

Virtual Private Cloud

API Reference(Ankara Region)

Issue 02
Date 2024-04-15



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1 Before You Start

1.1 Overview

Welcome to *Virtual Private Cloud API Reference*. The Virtual Private Cloud (VPC) service enables you to provision logically isolated, configurable, and manageable virtual networks for Elastic Cloud Servers (ECSs), improving the security of resources in the cloud system and simplifying network deployment.

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

If you plan to access VPCs through an API, ensure that you are familiar with VPC concepts. For details, see "Service Overview" in *Virtual Private Cloud User Guide*.

1.2 API Calling

VPC 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. Contact the enterprise administrator for regions and endpoints.

1.4 Notes and Constraints

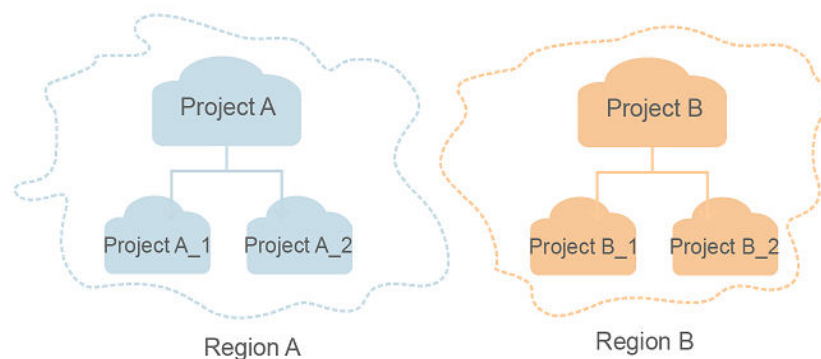
The number of VPCs that you can create is determined by your quota. To view or increase the quota, see "What Is a Quota?" in the *Virtual Private Cloud User Guide*.

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

VPC APIs include both native OpenStack APIs and extension APIs.

A combination of these two types of APIs allows you to use all functions provided by the VPC service. If a function involves both native OpenStack APIs and extension VPC APIs, use extension VPC APIs preferentially.

Table 2-1 API description

Type	Subtype	Description
VPC API	VPC	APIs for creating, querying, updating, and deleting VPCs
VPC API	Subnet	APIs for creating, querying, updating, and deleting subnets
VPC API	EIP	APIs for assigning, querying, updating, and releasing EIPs
VPC API	Bandwidth	APIs for querying and updating bandwidth.
VPC API	Bandwidth (V2.0)	<ul style="list-style-type: none"> APIs for assigning and deleting shared bandwidth. APIs for adding an EIP to or removing an EIP from a shared bandwidth
VPC API	Quota	API for querying quota values
VPC API	Private IP address	APIs for assigning, querying, and releasing private IP addresses
VPC API	Security group	<ul style="list-style-type: none"> APIs for creating, querying, and deleting security groups
VPC API	Port	APIs for creating, querying, updating, and deleting ports

Type	Subtype	Description
VPC API	VPC peering connection	<ul style="list-style-type: none"> • APIs for creating, querying, updating, and deleting VPC peering connections • APIs for accepting and rejecting VPC peering connection requests
VPC API	VPC route	APIs for creating, querying, and deleting VPC routes
VPC API	Querying IP address usage on a specified network	APIs for querying the usage of IP addresses on a specified network, including the total number of IP addresses and the number of used IP addresses.
OpenStack Neutron API	API version	APIs for querying all available API versions and displaying the results in pages.
OpenStack Neutron API	Port	APIs for creating, querying, updating, and deleting ports
OpenStack Neutron API	Network	APIs for creating, querying, updating, and deleting networks
OpenStack Neutron API	Subnet	APIs for creating, querying, updating, and deleting subnets
OpenStack Neutron API	Router	APIs for creating, querying, updating, and deleting routers
OpenStack Neutron API	Floating IP address	APIs for assigning, querying, updating, and releasing floating IP addresses
OpenStack Neutron API	network ACL	<ul style="list-style-type: none"> • APIs for creating, updating, and releasing network ACLs • APIs for creating, updating, deleting, and querying network ACL rules. • APIs for creating, updating, deleting, and querying network ACL policies
OpenStack Neutron API	Security group	<ul style="list-style-type: none"> • APIs for creating, querying, updating, and deleting security groups • APIs for creating, querying, and deleting security group rules

3 Calling APIs

3.1 Making an API Request

This section describes the structure of a REST API request, and uses the IAM API for 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 API.

VPC 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": "*****#", // IAM user password  
          "domain": {  
            "name": "domainname" // Name of an IAM account  
          }  
        }  
      }  
    }  
  },  
  "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.

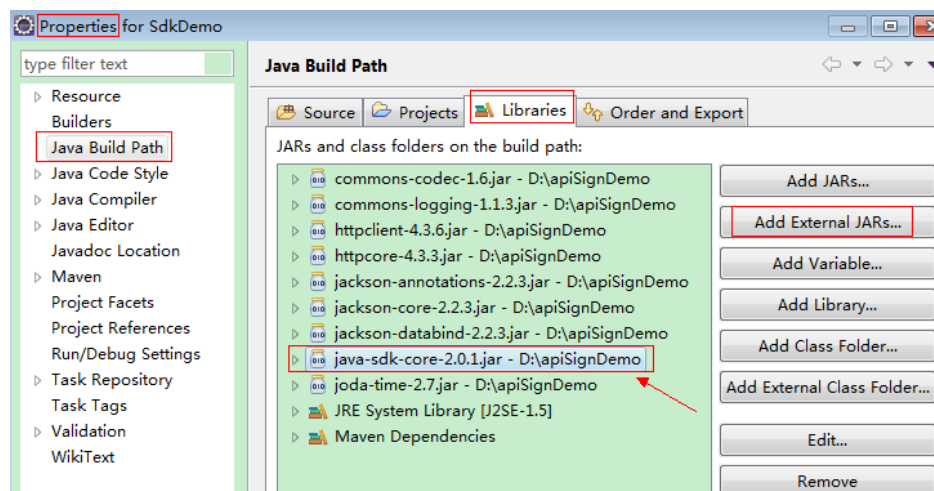
Download the demo project at <https://github.com/api-gate-way/SdkDemo>.

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.

Extract a JAR file from the downloaded package. Add the extracted JAR file to the project as a dependency package. The following figure shows an example.

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 extract the demo project.

Step 3 Import the demo project to Eclipse.

Figure 3-2 Selecting Existing Projects into Workspace

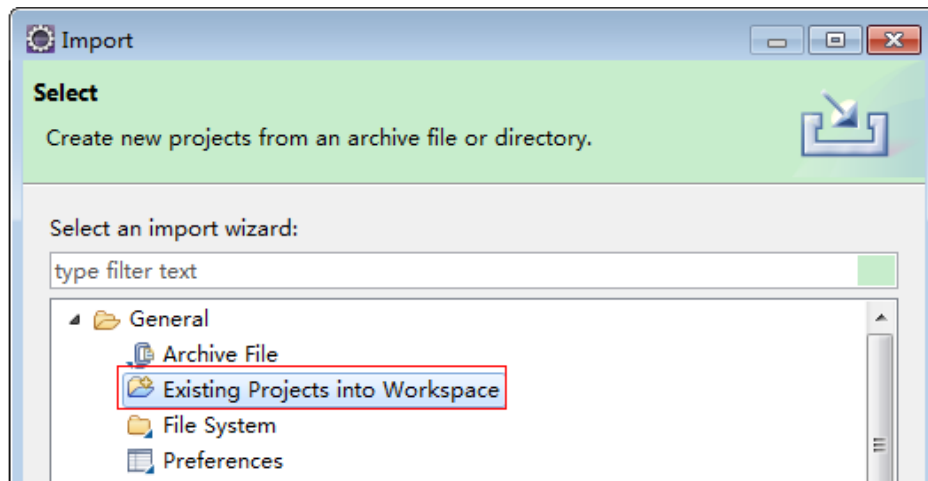


Figure 3-3 Selecting the demo project

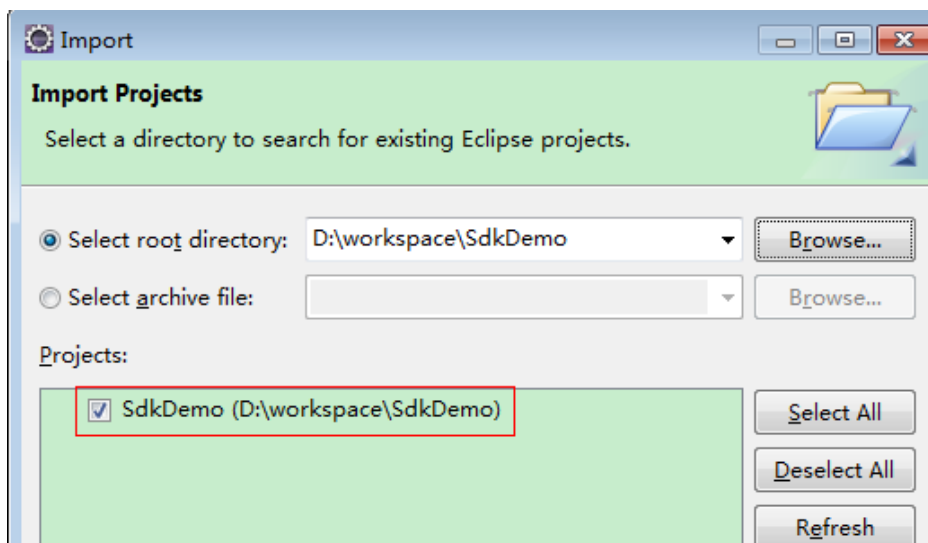
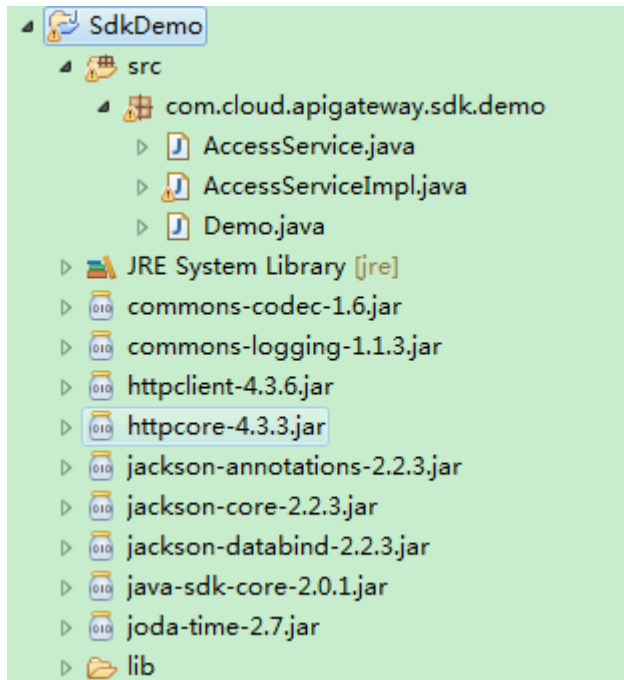


Figure 3-4 Structure of the demo project



Step 4 Sign the request.

The signature method is integrated into the JAR file imported in [Step 3](#). Before sending the request, you need to sign the requested content. The obtained signature is included in the HTTP header of 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**: Implements the **access** method, 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**, 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 Getting Started

4.1 Creating a VPC

Scenarios

This section describes how to call the VPC creation API to create a VPC. For details about the parameters for creating a VPC and the response message, see section [Creating a VPC](#).

Prerequisites

You have planned the region where you want to create the VPC and obtained the endpoint required for API calls. For details, see [Endpoints](#).

To use token authentication, you need to obtain a token and add **X-Auth-Token** to the request headers. Obtain the token by performing the steps provided in section [Authentication](#).

NOTE

The token obtained from IAM is valid for only 24 hours. If you want to use one token for authentication, you can cache it to avoid frequently obtaining the token.

Procedure

1. Send **POST** `https://VPC endpoint/v1/{project_id}/vpcs`. Parameter **project_id** indicates the project ID.
2. Add **X-Auth-Token** to the request header.
3. Specify the following parameters in the request body:

```
{
  "vpc": {
    "name": "vpc", //VPC name
    "cidr": "192.168.0.0/16" //Available subnet IP address ranges in the VPC
  }
}
```
4. Check the response message.
 - The request is successful if the following response is displayed. In the response, **id** indicates the VPC ID.


```
{
  "vpc": {
    "id": "b6684a27-b049-407d-90b4-c9551f2390e1",
    "name": "vpc",
    "cidr": "192.168.0.0/16",
    "status": "CREATING",
    "routes": []
  }
}
```

- For details about the error codes displayed if the request fails, see section [Error Codes](#).
5. Query the VPC details as well as update or delete the VPC based on the **vpc_id** and **project_id** values.

5 APIs

5.1 Virtual Private Cloud

5.1.1 Creating a VPC

Function

This API is used to create a VPC.

URI

POST /v1/{project_id}/vpcs

[Table 5-1](#) describes the parameters.

Table 5-1 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameters

Table 5-2 Request parameter

Name	Mandatory	Type	Description
vpc	Yes	vpc object	Specifies the VPC objects.

Table 5-3 VPC objects

Name	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none"> Specifies the VPC name. The value can contain no more than 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). Each VPC name of a tenant must be unique if the VPC name is not left blank.
description	No	String	<ul style="list-style-type: none"> Provides supplementary information about the VPC. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	No	String	<ul style="list-style-type: none"> Specifies the available IP address ranges for subnets in the VPC. Possible values are as follows: <ul style="list-style-type: none"> 10.0.0.0/8-24 172.16.0.0/12-24 192.168.0.0/16-24 If cidr is not specified, the default value is left blank. The value must be in CIDR format, for example, 192.168.0.0/16.

Example Request

- Create a VPC named **vpc** and set its CIDR block to 192.168.0.0/16.

POST https://{Endpoint}/v1/{project_id}/vpcs

```
{
  "vpc": {
    "name": "vpc",
    "description": "test",
    "cidr": "192.168.0.0/16",
  }
}
```

Response Parameters

Table 5-4 Response parameter

Name	Type	Description
vpc	vpc object	Specifies the VPC objects.

Table 5-5 VPC objects

Name	Type	Description
id	String	Specifies a resource ID in UUID format.
name	String	<ul style="list-style-type: none">Specifies the VPC name.The value can contain no more than 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).Each VPC name of a tenant must be unique if the VPC name is not left blank.
description	String	<ul style="list-style-type: none">Provides supplementary information about the VPC.The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	<ul style="list-style-type: none">Specifies the available IP address ranges for subnets in the VPC.Possible values are as follows:<ul style="list-style-type: none">10.0.0.0/8-24172.16.0.0/12-24192.168.0.0/16-24If cidr is not specified, the default value is left blank.The value must be in CIDR format, for example, 192.168.0.0/16.
status	String	<ul style="list-style-type: none">Specifies the VPC status.Possible values are as follows:<ul style="list-style-type: none">CREATING: The VPC is being created.OK: The VPC is created successfully.

Example Response

```
{
  "vpc": {
    "id": "99d9d709-8478-4b46-9f3f-2206b1023fd3",
    "name": "vpc",
    "description": "test",
    "cidr": "192.168.0.0/16",
    "status": "CREATING",
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.1.2 Querying VPC Details

Function

This API is used to query details about a VPC.

URI

GET /v1/{project_id}/vpcs/{vpc_id}

[Table 5-6](#) describes the parameters.

Table 5-6 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
vpc_id	Yes	Specifies the VPC ID, which uniquely identifies the VPC.

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v1/{project_id}/vpcs/99d9d709-8478-4b46-9f3f-2206b1023fd3
```

Response Parameters

Table 5-7 Response parameter

Name	Type	Description
vpc	vpc object	Specifies the VPC objects.

Table 5-8 VPC objects

Name	Type	Description
id	String	Specifies a resource ID in UUID format.

Name	Type	Description
name	String	<ul style="list-style-type: none"> Specifies the VPC name. The value can contain no more than 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). Each VPC name of a tenant must be unique if the VPC name is not left blank.
description	String	<ul style="list-style-type: none"> Provides supplementary information about the VPC. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	<ul style="list-style-type: none"> Specifies the available IP address ranges for subnets in the VPC. Possible values are as follows: <ul style="list-style-type: none"> 10.0.0.0/8-24 172.16.0.0/12-24 192.168.0.0/16-24 If cidr is not specified, the default value is left blank. The value must be in CIDR format, for example, 192.168.0.0/16.
status	String	<ul style="list-style-type: none"> Specifies the VPC status. Possible values are as follows: <ul style="list-style-type: none"> CREATING: The VPC is being created. OK: The VPC is created successfully.

Example Response

```
{
  "vpc": {
    "id": "99d9d709-8478-4b46-9f3f-2206b1023fd3",
    "name": "vpc",
    "description": "test",
    "cidr": "192.168.0.0/16",
    "status": "OK",
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.1.3 Querying VPCs

Function

This API is used to query VPCs using search criteria and to display the VPCs in a list.

URI

GET /v1/{project_id}/vpcs

Example:

GET https://{Endpoint}/v1/{project_id}/vpcs?limit=10&marker=13551d6b-755d-4757-b956-536f674975c0

[Table 5-9](#) describes the parameters.

Table 5-9 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
id	No	String	Specifies the VPC ID that is used as the filtering condition.

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax ($2^{31}-1$). The default value is 2000.</p> <p>limit can be used together with marker. For details, see the parameter description of marker.</p>

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v1/{project_id}/vpcs
```


Response Parameters

Table 5-10 Response parameter

Name	Type	Description
vpcs	Array of vpc objects	Specifies the VPC objects .

Table 5-11 VPC objects

Name	Type	Description
id	String	Specifies a resource ID in UUID format.
name	String	<ul style="list-style-type: none"> Specifies the VPC name. The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). Each VPC name of a tenant must be unique if the VPC name is not left blank.
description	String	<ul style="list-style-type: none"> Provides supplementary information about the VPC. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	<ul style="list-style-type: none"> Specifies the available IP address ranges for subnets in the VPC. Possible values are as follows: <ul style="list-style-type: none"> 10.0.0.0/8-24 172.16.0.0/12-24 192.168.0.0/16-24 If cidr is not specified, the value is left blank by default. If cidr is specified, the value must be in CIDR format, for example, 192.168.0.0/16.
status	String	<ul style="list-style-type: none"> Specifies the VPC status. Possible values are as follows: <ul style="list-style-type: none"> CREATING: The VPC is being created. OK: The VPC is created.

Example Response

```
{
  "vpcs": [
    {
      "id": "13551d6b-755d-4757-b956-536f674975c0",
```

```
"name": "default",
"description": "test",
"cidr": "172.16.0.0/16",
"status": "OK",
},
{
  "id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",
  "name": "222",
  "description": "test",
  "cidr": "192.168.0.0/16",
  "status": "OK",
},
{
  "id": "99d9d709-8478-4b46-9f3f-2206b1023fd3",
  "name": "vpc",
  "description": "test",
  "cidr": "192.168.0.0/16",
  "status": "OK",
}
]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.1.4 Updating a VPC

Function

This API is used to update information about a VPC.

URI

PUT /v1/{project_id}/vpcs/{vpc_id}

[Table 5-12](#) describes the parameters.

Table 5-12 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
vpc_id	Yes	Specifies the VPC ID, which uniquely identifies the VPC.

Request Parameters

Table 5-13 Request parameter

Name	Mandatory	Type	Description
vpc	Yes	vpc object	Specifies the VPC objects.

Table 5-14 VPC objects

Name	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none"> Specifies the VPC name. The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). Each VPC name of a tenant must be unique if the VPC name is not left blank.
description	No	String	<ul style="list-style-type: none"> Provides supplementary information about the VPC. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	No	String	<ul style="list-style-type: none"> Specifies the available IP address ranges for subnets in the VPC. Possible values are as follows: <ul style="list-style-type: none"> 10.0.0.0/8-24 172.16.0.0/12-24 192.168.0.0/16-24 If cidr is not specified, the value is left blank by default. Constraints: <ul style="list-style-type: none"> The value must be in CIDR format, for example, 192.168.0.0/16. If you want to update the CIDR block of the VPC, the new CIDR block must contain all subnets in the VPC.
routes	No	Array of route objects	<ul style="list-style-type: none"> Specifies the route list. For details, see Table 5-15.

Table 5-15 route objects

Name	Mandatory	Type	Description
destination	No	String	<ul style="list-style-type: none"> Specifies the destination CIDR block of a route. The value must be in CIDR format.
nexthop	No	String	<ul style="list-style-type: none"> Specifies the next hop of a route. The value must be an IP address in the subnet of the VPC.

Example Request

- Change the name, description, and CIDR block of the VPC whose ID is 99d9d709-8478-4b46-9f3f-2206b1023fd3 to **vpc1**, **test1**, and **192.168.0.0/16**, respectively.

```
PUT https://{Endpoint}/v1/{project_id}/vpcs/99d9d709-8478-4b46-9f3f-2206b1023fd3
{
  "vpc": {
    "name": "vpc1",
    "description": "test1",
    "cidr": "192.168.0.0/16"
  }
}
```

Response Parameters

Table 5-16 Response parameter

Name	Type	Description
vpc	vpc object	Specifies the VPC objects.

Table 5-17 VPC objects

Name	Type	Description
id	String	Specifies a resource ID in UUID format.
name	String	Specifies the VPC name.
description	String	<ul style="list-style-type: none"> Provides supplementary information about the VPC. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).

Name	Type	Description
cidr	String	<ul style="list-style-type: none"> Specifies the available IP address ranges for subnets in the VPC. Possible values are as follows: <ul style="list-style-type: none"> 10.0.0.0/8-24 172.16.0.0/12-24 192.168.0.0/16-24 If cidr is not specified, the default value is left blank. The value must be in CIDR format, for example, 192.168.0.0/16.
status	String	<ul style="list-style-type: none"> Specifies the VPC status. Possible values are as follows: <ul style="list-style-type: none"> CREATING: The VPC is being created. OK: The VPC is created successfully.
routes	Array of route objects	<ul style="list-style-type: none"> Specifies the route information. For details, see the description of the route objects.

Table 5-18 route objects

Name	Type	Description
destination	String	<ul style="list-style-type: none"> Specifies the destination CIDR block of a route. The value must be in CIDR format.
nexthop	String	<ul style="list-style-type: none"> Specifies the next hop of a route. The value must be an IP address in the subnet of the VPC.

Example Response

```
{
  "vpc": {
    "id": "99d9d709-8478-4b46-9f3f-2206b1023fd3",
    "name": "vpc1",
    "description": "test1",
    "cidr": "192.168.0.0/16",
    "status": "OK",
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.1.5 Deleting a VPC

Function

This API is used to delete a VPC.

URI

DELETE /v1/{project_id}/vpcs/{vpc_id}

[Table 5-19](#) describes the parameters.

Table 5-19 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
vpc_id	Yes	Specifies the VPC ID that uniquely identifies the VPC.

Request Parameters

None

Example Request

```
DELETE https://{Endpoint}/v1/{project_id}/vpcs/13551d6b-755d-4757-b956-536f674975c0
```

Response Parameters

None

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.2 Subnet

5.2.1 Creating a Subnet

Function

This API is used to create a subnet.

URI

POST /v1/{project_id}/subnets

[Table 5-20](#) describes the parameters.

Table 5-20 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameters

Table 5-21 Request parameter

Name	Mandatory	Type	Description
subnet	Yes	subnet object	Specifies the subnet objects .

Table 5-22 subnet objects

Name	Mandatory	Type	Description
name	Yes	String	<ul style="list-style-type: none">Specifies the subnet name.The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	No	String	<ul style="list-style-type: none">Provides supplementary information about the subnet.The value can contain no more than 255 characters and cannot contain angle brackets (< or >).

Name	Mandatory	Type	Description
cidr	Yes	String	<ul style="list-style-type: none"> Specifies the subnet CIDR block. The value must be within the VPC CIDR block. The value must be in CIDR format. The subnet mask cannot be greater than 28.
gateway_ip	Yes	String	<ul style="list-style-type: none"> Specifies the gateway of the subnet. The value must be an IP address in the subnet. The value must be a valid IP address.
ipv6_enable	No	Boolean	<ul style="list-style-type: none"> Specifies whether IPv6 is enabled. The value can be true (enabled) or false (disabled). If this parameter is left blank, the system automatically sets it to false by default.
dhcp_enable	No	Boolean	<ul style="list-style-type: none"> Specifies whether DHCP is enabled for the subnet. The value can be true (enabled) or false (disabled). If this parameter is left blank, the value is set to true by default. If this parameter is set to false, newly created ECSs cannot obtain IP addresses, and usernames and passwords cannot be injected using Cloud-init.
primary_dns	No	String	<ul style="list-style-type: none"> Specifies the primary IP address of DNS server on the subnet. The value must be an IP address. If the value is not specified, the default value will be left blank.

Name	Mandatory	Type	Description
secondary_dns	No	String	<ul style="list-style-type: none"> Specifies the standby IP address of DNS server on the subnet. The value must be an IP address. If the value is not specified, the default value will be left blank. If only secondary_dns is specified and primary_dns is not specified, primary_dns will automatically use the value of secondary_dns. <p>If there is only one DNS server address, only primary_dns is displayed.</p>
dnsList	No	Array of strings	<ul style="list-style-type: none"> Specifies the DNS server address list of a subnet. This field is required if you need to use more than two DNS servers. This parameter value is the superset of both DNS server address 1 and DNS server address 2. If the value is not specified, the default value will be left blank.
availability_zone	No	String	<ul style="list-style-type: none"> Specifies the AZ to which the subnet belongs, which can be obtained from endpoints. For details, see Endpoints. The value must be an existing AZ in the system. If the value is not specified, the default value will be left blank.
vpc_id	Yes	String	Specifies the ID of the VPC to which the subnet belongs.
extra_dhcp_options	No	Array of extra_dhcp_option objects	Specifies the NTP server address configured for the subnet. For details, see Table 5-23 .

Table 5-23 extra_dhcp_opt object

Name	Mandatory	Type	Description
opt_value	No	String	<ul style="list-style-type: none"> Specifies the NTP server address configured for the subnet. Constraints: The option ntp for opt_name indicates the NTP server configured for the subnet. Currently, only IPv4 addresses are supported. A maximum of four IP addresses can be configured, and each address must be unique. Multiple IP addresses must be separated using commas (.). The option null for opt_name indicates that no NTP server is configured for the subnet. The parameter value cannot be an empty string.
opt_name	Yes	String	<ul style="list-style-type: none"> Specifies the NTP server address configured for the subnet. Currently, the value can only be set to ntp.

Example Request

- Create a subnet with name set to **subnet**, CIDR block set to 192.168.20.0/24, and gateway IP address set to 192.168.20.1 in the VPC with ID of 3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85.

POST https://{Endpoint}/v1/{project_id}/subnets

```
{
  "subnet": {
    "name": "subnet",
    "description": "",
    "cidr": "192.168.20.0/24",
    "gateway_ip": "192.168.20.1",
    "ipv6_enable": true,
    "dhcp_enable": true,
    "primary_dns": "114.xx.xx.114",
    "secondary_dns": "114.xx.xx.115",
    "dnsList": [
      "114.xx.xx.114",
      "114.xx.xx.115"
    ],
    "vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85"
  }
}
```

Response Parameters

Table 5-24 Response parameter

Name	Type	Description
subnet	subnet object	Specifies the subnet objects .

Table 5-25 subnet objects

Name	Type	Description
id	String	Specifies the resource identifier in the form of UUID.
name	String	<ul style="list-style-type: none"> Specifies the subnet name. The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	<ul style="list-style-type: none"> Provides supplementary information about the subnet. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	<ul style="list-style-type: none"> Specifies the subnet CIDR block. The value must be within the VPC CIDR block. The value must be in CIDR format. The subnet mask cannot be greater than 28.
gateway_ip	String	<ul style="list-style-type: none"> Specifies the gateway of the subnet. The value must be an IP address in the subnet. The value must be a valid IP address.
ipv6_enable	Boolean	Specifies whether IPv6 is enabled.
cidr_v6	String	Specifies the IPv6 subnet CIDR block. If the subnet is an IPv4 subnet, this parameter is not returned.
gateway_ip_v6	String	Specifies the IPv6 subnet gateway. If the subnet is an IPv4 subnet, this parameter is not returned.

Name	Type	Description
dhcp_enable	Boolean	Specifies whether DHCP is enabled for the subnet.
primary_dns	String	<ul style="list-style-type: none"> Specifies the primary IP address of DNS server on the subnet. The value must be an IP address. If the value is not specified, the default value will be left blank.
secondary_dns	String	<ul style="list-style-type: none"> Specifies the standby IP address of DNS server on the subnet. The value must be an IP address. If the value is not specified, the default value will be left blank. If only secondary_dns is specified and primary_dns is not specified, primary_dns will automatically use the value of secondary_dns. If there is only one DNS server address, only primary_dns is displayed.
dnsList	Array of strings	<ul style="list-style-type: none"> Specifies the DNS server address list of a subnet. This field is required if you need to use more than two DNS servers. This parameter value is the superset of both DNS server address 1 and DNS server address 2. If the value is not specified, the default value will be left blank.
availability_zone	String	<ul style="list-style-type: none"> Specifies the AZ to which the subnet belongs, which can be obtained from endpoints. For details, see Endpoints. The value must be an existing AZ in the system. If the value is not specified, the default value will be left blank.
vpc_id	String	Specifies the ID of the VPC to which the subnet belongs.

Name	Type	Description
status	String	<ul style="list-style-type: none"> Specifies the status of the subnet. The value can be ACTIVE, UNKNOWN, or ERROR. <ul style="list-style-type: none"> ACTIVE: indicates that the subnet has been associated with a VPC. UNKNOWN: indicates that the subnet has not been associated with a VPC. ERROR: indicates that the subnet is abnormal. The system creates a subnet and then associates the subnet with a VPC in the threads. In the concurrent scenario, if the CIDR block of the created subnet is the same as that of an existing subnet, the created subnet fails to associate with a VPC after underlying system verification. As a result, the subnet creation fails. The value of status is UNKNOWN before the subnet is associated with a VPC. After the subnet is associated with a VPC in the threads, the status of the subnet is ACTIVE.
neutron_network_id	String	Specifies the ID of the corresponding network (OpenStack Neutron API).
neutron_subnet_id	String	Specifies the ID of the corresponding subnet (OpenStack Neutron API).
neutron_subnet_id_v6	String	Specifies the ID of the IPv6 subnet (OpenStack Neutron API). If the subnet is an IPv4 subnet, this parameter is not returned.
extra_dhcp_opts	Array of extra_dhcp_opt objects	Specifies the NTP server address configured for the subnet. For details, see Table 5-26 .

Table 5-26 extra_dhcp_opt object

Name	Mandatory	Type	Description
opt_value	No	String	<ul style="list-style-type: none"> Specifies the NTP server address configured for the subnet. Constraints: The option ntp for opt_name indicates the NTP server configured for the subnet. Currently, only IPv4 addresses are supported. A maximum of four IP addresses can be configured, and each address must be unique. Multiple IP addresses must be separated using commas (.). The option null for opt_name indicates that no NTP server is configured for the subnet. The parameter value cannot be an empty string.
opt_name	Yes	String	<ul style="list-style-type: none"> Specifies the NTP server address configured for the subnet. Currently, the value can only be set to ntp.

Example Response

```
{
  "subnet": {
    "id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
    "name": "subnet",
    "description": "",
    "cidr": "192.168.20.0/24",
    "dnsList": [
      "114.xx.xx.114",
      "114.xx.xx.115"
    ],
    "status": "UNKNOWN",
    "vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",
    "gateway_ip": "192.168.20.1",
    "ipv6_enable": true,
    "cidr_v6": "2001:db8:a583::/64",
    "gateway_ip_v6": "2001:db8:a583::1",
    "dhcp_enable": true,
    "primary_dns": "114.xx.xx.114",
    "secondary_dns": "114.xx.xx.115",
    "availability_zone": "aa-bb-cc",
    "neutron_network_id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
    "neutron_subnet_id": "213cb9d-3122-2ac1-1a29-91ffc1231a12",
    "neutron_subnet_id_v6": "e0fa7de1-a6e2-44c9-b052-b9d8cebe93c4",
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.2.2 Querying Subnet Details

Function

This API is used to query details about a subnet.

URI

GET /v1/{project_id}/subnets/{subnet_id}

[Table 5-27](#) describes the parameters.

Table 5-27 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
subnet_id	Yes	Specifies the subnet ID, which uniquely identifies the subnet. If you use the management console, the value of this parameter is the Network ID value.

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v1/{project_id}/subnets/4779ab1c-7c1a-44b1-a02e-93dfc361b32d
```

Response Parameters

Table 5-28 Response parameter

Name	Type	Description
subnet	subnet object	Specifies the subnet objects .

Table 5-29 subnet objects

Name	Type	Description
id	String	Specifies a resource ID in UUID format.
name	String	<ul style="list-style-type: none"> Specifies the subnet name. The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	<ul style="list-style-type: none"> Provides supplementary information about the subnet. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	Specifies the subnet CIDR block.
gateway_ip	String	Specifies the subnet gateway address.
ipv6_enable	Boolean	Specifies whether IPv6 is enabled.
cidr_v6	String	Specifies the IPv6 subnet CIDR block. If the subnet is an IPv4 subnet, this parameter is not returned.
gateway_ip_v6	String	Specifies the IPv6 subnet gateway. If the subnet is an IPv4 subnet, this parameter is not returned.
dhcp_enable	Boolean	Specifies whether DHCP is enabled for the subnet.
primary_dns	String	Specifies the primary IP address of DNS server on the subnet.
secondary_dns	String	Specifies the standby IP address of DNS server on the subnet.
dnsList	Array of strings	Specifies the IP address list of DNS servers on the subnet.
availability_zone	String	Identifies the AZ to which the subnet belongs.

Name	Type	Description
vpc_id	String	Specifies the ID of the VPC to which the subnet belongs.
status	String	<ul style="list-style-type: none"> Specifies the status of the subnet. The value can be ACTIVE, UNKNOWN, or ERROR. <ul style="list-style-type: none"> ACTIVE: indicates that the subnet has been associated with a VPC. UNKNOWN: indicates that the subnet has not been associated with a VPC. ERROR: indicates that the subnet is abnormal.
neutron_network_id	String	Specifies the ID of the corresponding network (OpenStack Neutron API).
neutron_subnet_id	String	Specifies the ID of the corresponding subnet (OpenStack Neutron API).
neutron_subnet_id_v6	String	Specifies the ID of the IPv6 subnet (OpenStack Neutron API). If the subnet is an IPv4 subnet, this parameter is not returned.

Example Response

```
{
  "subnet": {
    "id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
    "name": "subnet",
    "description": "",
    "cidr": "192.168.20.0/24",
    "dnsList": [
      "114.xx.xx.114",
      "114.xx.xx.115"
    ],
    "status": "ACTIVE",
    "vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",
    "gateway_ip": "192.168.20.1",
    "ipv6_enable": false,
    "dhcp_enable": true,
    "primary_dns": "114.xx.xx.114",
    "secondary_dns": "114.xx.xx.115",
    "availability_zone": "aa-bb-cc",
    "neutron_network_id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
    "neutron_subnet_id": "213cb9d-3122-2ac1-1a29-91ffc1231a12"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.2.3 Querying Subnets

Function

This API is used to query subnets using search criteria and to display the subnets in a list.

URI

GET /v1/{project_id}/subnets

Example:

```
GET https://{Endpoint}/v1/{project_id}/subnets?limit=10&marker=4779ab1c-7c1a-44b1-a02e-93dfc361b32d&vpc_id=3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85
```

[Table 5-30](#) describes the parameters.

Table 5-30 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2³¹-1). The default value is 2000.</p> <p>limit can be used together with marker. For details, see the parameter description of marker.</p>
vpc_id	No	String	<p>Specifies the VPC ID that is used to query subnets.</p>

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v1/{project_id}/subnets
```

Response Parameters

Table 5-31 Response parameter

Name	Type	Description
subnets	Array of subnet objects	Specifies the subnet objects.

Table 5-32 subnet objects

Name	Type	Description
id	String	Specifies a resource ID in UUID format.
name	String	<ul style="list-style-type: none"> Specifies the subnet name. The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	<ul style="list-style-type: none"> Provides supplementary information about the subnet. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	Specifies the subnet CIDR block.
gateway_ip	String	Specifies the subnet gateway address.
ipv6_enable	Boolean	Specifies whether IPv6 is enabled.
cidr_v6	String	Specifies the IPv6 subnet CIDR block. If the subnet is an IPv4 subnet, this parameter is not returned.
gateway_ip_v6	String	Specifies the IPv6 subnet gateway address. If the subnet is an IPv4 subnet, this parameter is not returned.
dhcp_enable	Boolean	Specifies whether the DHCP function is enabled for the subnet.
primary_dns	String	Specifies the primary IP address of DNS server on the subnet.
secondary_dns	String	Specifies the standby IP address of DNS server on the subnet.
dnsList	Array of strings	Specifies the IP address list of DNS servers on the subnet.

Name	Type	Description
availability_zone	String	Identifies the AZ to which the subnet belongs.
vpc_id	String	Specifies the ID of the VPC to which the subnet belongs.
status	String	<ul style="list-style-type: none">Specifies the status of the subnet.The value can be ACTIVE, UNKNOWN, or ERROR.<ul style="list-style-type: none">ACTIVE: indicates that the subnet has been associated with a VPC.UNKNOWN: indicates that the subnet has not been associated with a VPC.ERROR: indicates that the subnet is abnormal.
neutron_network_id	String	Specifies the ID of the network (OpenStack Neutron API).
neutron_subnet_id	String	Specifies the ID of the subnet (OpenStack Neutron API).
neutron_subnet_id_v6	String	Specifies the ID of the IPv6 subnet (OpenStack Neutron API). If the subnet is an IPv4 subnet, this parameter is not returned.

Example Response

```
{
  "subnets": [
    {
      "id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
      "name": "subnet",
      "description": "",
      "cidr": "192.168.20.0/24",
      "dnsList": [
        "114.xx.xx.114",
        "114.xx.xx.115"
      ],
      "status": "ACTIVE",
      "vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",
      "gateway_ip": "192.168.20.1",
      "ipv6_enable": true,
      "cidr_v6": "2001:db8:a583::/64",
      "gateway_ip_v6": "2001:db8:a583::1",
      "dhcp_enable": true,
      "primary_dns": "114.xx.xx.114",
      "secondary_dns": "114.xx.xx.115",
      "availability_zone": "aa-bb-cc",
      "neutron_network_id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
      "neutron_subnet_id": "213cb9d-3122-2ac1-1a29-91ffc1231a12",
      "neutron_subnet_id_v6": "e0fa7de1-a6e2-44c9-b052-b9d8cebe93c4",
    }
  ]
}
```

```
"id": "531dec0f-3116-411b-a21b-e612e42349fd",
"name": "Subnet1",
"description": "",
"cidr": "192.168.1.0/24",
"dnsList": [
  "114.xx.xx.114",
  "114.xx.xx.115"
],
"status": "ACTIVE",
"vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",
"gateway_ip": "192.168.1.1",
"ipv6_enable": false,
"dhcp_enable": true,
"primary_dns": "114.xx.xx.114",
"secondary_dns": "114.xx.xx.115",
"availability_zone": "aa-bb-cc",
"neutron_network_id": "531dec0f-3116-411b-a21b-e612e42349fd",
"neutron_subnet_id": "1aac193-a2ad-f153-d122-12d64c2c1d78"
}
]
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.2.4 Updating Subnet Information

Function

This API is used to update information about a subnet.

URI

PUT /v1/{project_id}/vpcs/{vpc_id}/subnets/{subnet_id}

[Table 5-33](#) describes the parameters.

Table 5-33 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
vpc_id	Yes	Specifies the VPC ID of the subnet.

Name	Mandatory	Description
subnet_id	Yes	Specifies the subnet ID that uniquely identifies the subnet. If you use the management console, the value of this parameter is the Network ID value.

Request Parameters

Table 5-34 Request parameter

Name	Mandatory	Type	Description
subnet	Yes	subnet object	Specifies the subnet objects .

Table 5-35 subnet objects

Name	Mandatory	Type	Description
name	Yes	String	<ul style="list-style-type: none">Specifies the subnet name.The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	No	String	<ul style="list-style-type: none">Provides supplementary information about the subnet.The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
ipv6_enable	No	Boolean	<ul style="list-style-type: none">Specifies whether IPv6 is enabled.The value can be true (enabled) or false (disabled).

Name	Mandatory	Type	Description
dhcp_enable	No	Boolean	<ul style="list-style-type: none"> Specifies whether DHCP is enabled for the subnet. The value can be true (enabled) or false (disabled). If this parameter is left blank, the system automatically sets it to true by default. If this parameter is set to false, newly created ECSs cannot obtain IP addresses, and usernames and passwords cannot be injected using Cloud-init.
primary_dns	No	String	<ul style="list-style-type: none"> Specifies the primary IP address of DNS server on the subnet. The value must be a valid IP address.
secondary_dns	No	String	<ul style="list-style-type: none"> Specifies the standby IP address of DNS server on the subnet. The value must be a valid IP address. The value of secondary_dns must be different from that of primary_dns. If there is only one DNS server address, only primary_dns is displayed.
dnsList	No	Array of strings	<ul style="list-style-type: none"> Specifies the DNS server address list of a subnet. This field is required if you need to use more than two DNS servers. This parameter value is the superset of both DNS server address 1 and DNS server address 2.

Example Request

- Change the name of the subnet whose ID is 4779ab1c-7c1a-44b1-a02e-93dfc361b32d to **subnet02**, and also change its DNS and DHCP configurations.
PUT https://{Endpoint}/v1/{project_id}/vpcs/{vpc_id}/subnets/4779ab1c-7c1a-44b1-a02e-93dfc361b32d

```
{
  "subnet": {
```



```
"name": "subnet02",  
"ipv6_enable": true,  
"dhcp_enable": false,  
"primary_dns": "114.xx.xx.115",  
"secondary_dns": "114.xx.xx.116"  
}
```

Response Parameters

Table 5-36 Response parameter

Name	Type	Description
subnet	subnet object	Specifies the subnet objects.

Table 5-37 subnet objects

Name	Type	Description
id	String	Specifies a resource ID in UUID format.
status	String	<ul style="list-style-type: none">• Specifies the status of the subnet.• The value can be ACTIVE, UNKNOWN, or ERROR.<ul style="list-style-type: none">– ACTIVE: indicates that the subnet has been associated with a VPC.– UNKNOWN: indicates that the subnet has not been associated with a VPC.– ERROR: indicates that the subnet is abnormal.

Example Response

```
{  
  "subnet": {  
    "id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",  
    "status": "ACTIVE"  
  }  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.2.5 Deleting a Subnet

Function

This API is used to delete a subnet.

URI

DELETE /v1/{project_id}/vpcs/{vpc_id}/subnets/{subnet_id}

[Table 5-38](#) describes the parameters.

Table 5-38 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
vpc_id	Yes	Specifies the ID of the subnet VPC.
subnet_id	Yes	Specifies the subnet ID, which uniquely identifies the subnet. If you use the management console, the value of this parameter is the Network ID value.

Request Parameters

None

Example Request

```
DELETE https://{Endpoint}/v1/{project_id}/vpcs/{vpc_id}/subnets/4779ab1c-7c1a-44b1-a02e-93dfc361b32d
```

Response Parameters

None

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.3 EIP

5.3.1 Assigning an EIP

Function

This API is used to assign an EIP.

The EIP service provides independent public IP addresses and bandwidth for Internet access. EIPs can be bound to or unbound from ECSs, virtual IP addresses, NAT gateways, or load balancers.

URI

POST /v1/{project_id}/publicips

[Table 5-39](#) describes the parameters.

Table 5-39 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameters

Table 5-40 Request body parameter

Name	Mandatory	Type	Description
publicip	Yes	publicip object	Specifies the EIP object. For details, see Table 5-41 .
bandwidth	Yes	bandwidth object	Specifies the bandwidth object. For details, see Table 5-42 .

Table 5-41 Description of the **publicip** field

Name	Mandatory	Type	Description
type	Yes	String	<ul style="list-style-type: none"> Specifies the EIP type. Constraints: <ul style="list-style-type: none"> The configured value must be supported by the system. publicip_id is an IPv4 port. If publicip_type is not specified, the default value is 5_bgp.
alias	No	String	<ul style="list-style-type: none"> Specifies the EIP name. The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).

Table 5-42 Description of the **bandwidth** field

Name	Mandatory	Type	Description
name	Yes	String	<ul style="list-style-type: none"> Specifies the bandwidth name. The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). This parameter is mandatory when share_type is set to PER. This parameter will be ignored when share_type is set to WHOLE with an ID specified.

Name	Mandatory	Type	Description
size	Yes	Integer	<ul style="list-style-type: none"> • Specifies the bandwidth size. • The value ranges from 1 Mbit/s to 300 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the bandwidth range of each region on the management console.) • This parameter is mandatory when share_type is set to PER. This parameter will be ignored when share_type is set to WHOLE with an ID specified. • The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows: <ul style="list-style-type: none"> - The minimum increment is 1 Mbit/s if the allowed bandwidth ranges from 0 Mbit/s to 300 Mbit/s (with 300 Mbit/s included). - The minimum increment is 50 Mbit/s if the allowed bandwidth ranges from 300 Mbit/s to 1000 Mbit/s (with

Name	Mandatory	Type	Description
			1000 Mbit/s included). – The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.
share_type	Yes	String	<ul style="list-style-type: none"> Specifies the bandwidth type. The value is PER, indicating that the bandwidth is dedicated.
charge_mode	No	String	<ul style="list-style-type: none"> The value is traffic, indicating that the billing is based on traffic.

Example Request

Example request (IPv4 EIP with dedicated bandwidth)

POST https://{Endpoint}/v1/{project_id}/publicips

```
{
  "publicip": {
    "type": "5_bgp",
    "ip_version": 4
  },
  "bandwidth": {
    "name": "bandwidth123",
    "size": 10,
    "share_type": "PER"
  }
}
```

Response Message

- Response parameter

Table 5-43 Response parameter

Name	Type	Description
publicip	publicip object	Specifies the EIP object. For details, see Table 5-44 .

Table 5-44 Description of the **publicip** field

Name	Type	Description
id	String	Specifies the unique identifier of an EIP.
status	String	<ul style="list-style-type: none"> • Specifies the EIP status. • Possible values are as follows: <ul style="list-style-type: none"> - FREEZED (Frozen) - BIND_ERROR (Binding failed) - BINDING (Binding) - PENDING_DELETE (Releasing) - PENDING_CREATE (Assigning) - PENDING_UPDATE (Updating) - NOTIFYING (Assigning) - NOTIFY_DELETE (Release) - DOWN (Unbound) - ACTIVE (Bound) - ELB (Bound to a load balancer) - ERROR (Exceptions)
type	String	<ul style="list-style-type: none"> • Specifies the EIP type. • Constraints: <ul style="list-style-type: none"> - The configured value must be supported by the system. - publicip_id is an IPv4 port. If publicip_type is not specified, the default value is 5_bgp.
public_ip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available.
tenant_id	String	Specifies the project ID.

Name	Type	Description
create_time	String	Specifies the time (UTC) when the EIP is assigned. Format: <i>yyyy-MM-dd HH:mm:ss</i>
bandwidth_size	Integer	Specifies the bandwidth (Mbit/s).
alias	String	Specifies the EIP name.

Example Response

Example response (IPv4 EIP with dedicated bandwidth)

```
{
  "publicip": {
    "id": "f588ccfa-8750-4d7c-bf5d-2ede24414706",
    "alias": "tom",
    "public_border_group": "center",
    "status": "PENDING_CREATE",
    "type": "5_bgp",
    "public_ip_address": "161.xx.xx.7",
    "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
    "ip_version": 4,
    "create_time": "2015-07-16 04:10:52",
    "bandwidth_size": 0,
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.3.2 Querying an EIP

Function

This API is used to query a specific EIP.

URI

GET /v1/{project_id}/publicips/{publicip_id}

[Table 5-45](#) describes the parameters.

Table 5-45 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
publicip_id	Yes	Specifies the unique identifier of an EIP.

Request Message

- Request parameter
None
- Example request
Get `https://{Endpoint}/v1/{project_id}/publicips/{publicip_id}`

Response Message

- Response parameter

Table 5-46 Response parameter

Name	Type	Description
publicip	publicip object	Specifies the EIP object. For details, see Table 5-47 .

Table 5-47 Description of the **publicip** field

Name	Type	Description
id	String	Specifies the unique identifier of an EIP.

Name	Type	Description
status	String	<ul style="list-style-type: none"> • Specifies the EIP status. • Possible values are as follows: <ul style="list-style-type: none"> - FREEZED (Frozen) - BIND_ERROR (Binding failed) - BINDING (Binding) - PENDING_DELETE (Releasing) - PENDING_CREATE (Assigning) - PENDING_UPDATE (Updating) - NOTIFYING (Assigning) - NOTIFY_DELETE (Releasing) - DOWN (Unbound) - ACTIVE (Bound) - ELB (Bound to a load balancer) - ERROR (Exceptions)
type	String	<ul style="list-style-type: none"> • Specifies the EIP type. • Constraints: <ul style="list-style-type: none"> - The configured value must be supported by the system. - publicip_id is an IPv4 port. If publicip_type is not specified, the default value is 5_bgp.
private_ip_address	String	<ul style="list-style-type: none"> • Specifies the private IP address bound to the EIP. • This parameter is returned only if the private IP address is bound to the EIP.

Name	Type	Description
port_id	String	<ul style="list-style-type: none"> Specifies the port ID. This parameter is returned only when a port is associated with the EIP.
tenant_id	String	Specifies the project ID.
create_time	String	Specifies the time (UTC) when the EIP is assigned. Format: <i>yyyy-MM-dd HH:mm:ss</i>
bandwidth_id	String	Specifies the ID of the EIP bandwidth.
bandwidth_size	Integer	Specifies the bandwidth (Mbit/s).
bandwidth_share_type	String	<ul style="list-style-type: none"> Specifies the EIP bandwidth type. The value can be PER or WHOLE. <ul style="list-style-type: none"> PER: Dedicated bandwidth WHOLE: Shared bandwidth
alias	String	Specifies the EIP name.
public_border_group	String	Specifies whether it is in a central site or an edge site. The value can be: <ul style="list-style-type: none"> center <i>Edge site name</i> An EIP can only be bound to a resource of the same region.

- Example response

```
{
  "publicip": {
    "id": "2ec9b78d-9368-46f3-8f29-d1a95622a568",
    "status": "DOWN",
    "alias": "tom",
    "type": "5_bgp",
    "public_ip_address": "161.xx.xx.12",
    "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
    "private_ip_address": "192.168.10.5",
    "create_time": "2015-07-16 04:32:50",
    "bandwidth_id": "49c8825b-bed9-46ff-9416-704b96d876a2",
```

```
"bandwidth_share_type": "PER",  
"bandwidth_size": 10, //The EIP bandwidth size is 10 Mbit/s.  
"ip_version": 4  
}  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.3.3 Querying EIPs

Function

This API is used to query EIPs.

URI

GET /v1/{project_id}/publicips

[Table 5-48](#) describes the parameters.

Table 5-48 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.

Name	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2 ³¹ -1). The default value is 2000. limit can be used together with marker . For details, see the parameter description of marker .

Request Message

- Request parameter
None
- Example request
GET https://{Endpoint}/v1/{project_id}/publicips?limit={limit}&marker={marker}

Response Message

- Response parameter

Table 5-49 Response parameter

Name	Type	Description
publicips	Array of publicips objects	Specifies the EIP object. For details, see Table 5-50 .

Table 5-50 Description of the **publicips** field

Name	Type	Description
id	String	Specifies the unique identifier of an EIP.

Name	Type	Description
status	String	<ul style="list-style-type: none"> • Specifies the EIP status. • Possible values are as follows: <ul style="list-style-type: none"> - FREEZED (Frozen) - BIND_ERROR (Binding failed) - BINDING (Binding) - PENDING_DELETE (Releasing) - PENDING_CREATE (Assigning) - PENDING_UPDATE (Updating) - DOWN (Unbound) - ACTIVE (Bound) - ELB (Bound to a load balancer) - ERROR (Exceptions)
type	String	<ul style="list-style-type: none"> • Specifies the EIP type. • Constraints: <ul style="list-style-type: none"> - The configured value must be supported by the system. - publicip_id is an IPv4 port. If publicip_type is not specified, the default value is 5_bgp.
public_ip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available.
private_ip_address	String	<ul style="list-style-type: none"> • Specifies the private IP address bound to the EIP. • This parameter is returned only if the private IP address is bound to the EIP.

Name	Type	Description
port_id	String	<ul style="list-style-type: none"> Specifies the port ID. This parameter is returned only when a port is associated with the EIP.
tenant_id	String	Specifies the project ID.
create_time	String	Specifies the time (UTC) when the EIP is assigned. Format: <i>yyyy-MM-dd HH:mm:ss</i>
bandwidth_id	String	Specifies the ID of the EIP bandwidth.
bandwidth_size	Integer	Specifies the bandwidth (Mbit/s).
bandwidth_share_type	String	<ul style="list-style-type: none"> Specifies the EIP bandwidth type. The value can be PER or WHOLE. <ul style="list-style-type: none"> PER: Dedicated bandwidth WHOLE: Shared bandwidth
alias	String	Specifies the EIP name.
public_border_group	String	Specifies whether it is in a central site or an edge site. The value can be: <ul style="list-style-type: none"> center <i>Edge site name</i> An EIP can only be bound to a resource of the same region.

- Example response

```
{
  "publicips": [
    {
      "id": "6285e7be-fd9f-497c-bc2d-dd0bdea6efe0",
      "status": "DOWN",
      "alias": "tom",
      "type": "5_bgp",
      "public_ip_address": "161.xx.xx.9",
      "private_ip_address": "192.168.10.5",
      "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
      "create_time": "2015-07-16 04:22:32",
    }
  ]
}
```



```
"bandwidth_id": "3fa5b383-5a73-4dcb-a314-c6128546d855",
"bandwidth_share_type": "PER",
"bandwidth_size": 5,
"ip_version": 4
},
{
  "id": "80d5b82e-43b9-4f82-809a-37bec5793bd4",
  "status": "DOWN",
  "type": "5_bgp",
  "public_ip_address": "161.xx.xx.10",
  "private_ip_address": "192.168.10.6",
  "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
  "create_time": "2015-07-16 04:23:03",
  "bandwidth_id": "a79fd11a-047b-4f5b-8f12-99c178cc780a",
  "bandwidth_share_type": "PER",
  "bandwidth_size": 5,
  "ip_version": 4
}
]
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.3.4 Updating an EIP

Function

This API is used to convert the EIP version, bind an EIP to a NIC, or unbind an EIP from a NIC.

URI

PUT /v1/{project_id}/publicips/{publicip_id}

[Table 5-51](#) describes the parameters.

Table 5-51 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
publicip_id	Yes	Specifies the unique identifier of an EIP.

Request Message

- Request parameter

Table 5-52 Request parameter

Name	Mandatory	Type	Description
publicip	Yes	publicip object	Specifies the EIP object. For details, see Table 5-53 .

Table 5-53 Description of the **publicip** field

Name	Mandatory	Type	Description
port_id	No	String	<ul style="list-style-type: none"> Specifies the port ID. The value must be an existing port ID. If this parameter is not included or the parameter value is left blank, the EIP is unbound. If the specified port ID does not exist or has already been bound with an EIP, an error message will be displayed.
alias	No	String	<ul style="list-style-type: none"> Specifies the EIP name. The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).

- Example request 1 (Binding an EIP to a NIC)
PUT https://{Endpoint}/v1/{project_id}/publicips/{publicip_id}

```
{
  "publicip": {
    "port_id": "f588ccfa-8750-4d7c-bf5d-2ede24414706"
  }
}
```

Response Message

- Response parameter

Table 5-54 Response parameter

Name	Type	Description
publicip	publicip object	Specifies the EIP object. For details, see Table 5-55 .

Table 5-55 Description of the **publicips** field

Name	Type	Description
id	String	Specifies the unique identifier of an EIP.
status	String	<ul style="list-style-type: none"> • Specifies the EIP status. • Possible values are as follows: <ul style="list-style-type: none"> - FREEZED (Frozen) - BIND_ERROR (Binding failed) - BINDING (Binding) - PENDING_DELETE (Releasing) - PENDING_CREATE (Assigning) - PENDING_UPDATE (Updating) - NOTIFYING (Assigning) - NOTIFY_DELETE (Releasing) - DOWN (Unbound) - ACTIVE (Bound) - ELB (Bound to a load balancer) - ERROR (Exceptions)

Name	Type	Description
type	String	<ul style="list-style-type: none"> Specifies the EIP type. Constraints: <ul style="list-style-type: none"> The configured value must be supported by the system. publicip_id is an IPv4 port. If publicip_type is not specified, the default value is 5_bgp.
public_ip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available.
private_ip_address	String	<ul style="list-style-type: none"> Specifies the private IP address bound to the EIP. This parameter is returned only when a port is associated with the EIP.
port_id	String	<ul style="list-style-type: none"> Specifies the port ID. This parameter is returned only when a port is associated with the EIP.
tenant_id	String	Specifies the project ID.
create_time	String	Specifies the time (UTC) when the EIP is assigned. Format: <i>yyyy-MM-dd HH:mm:ss</i>
bandwidth_id	String	Specifies the ID of the EIP bandwidth.
bandwidth_size	Integer	Specifies the bandwidth (Mbit/s).

Name	Type	Description
bandwidth_share_type	String	<ul style="list-style-type: none">Specifies the EIP bandwidth type.The value can be PER or WHOLE.<ul style="list-style-type: none">PER: Dedicated bandwidthWHOLE: Shared bandwidth
alias	String	Specifies the EIP name.

- Example response (Binding an EIP to a NIC)

```
{
  "publicip": {
    "id": "f6318bef-6508-4ea5-a48f-6152b6b1a8fb",
    "status": "ACTIVE",
    "alias": "tom",
    "type": "5_bgp",
    "port_id": "a135e9b8-1630-40d2-a6c5-eb534a61efbe",
    "public_ip_address": "10.xx.xx.162",
    "private_ip_address": "192.168.1.131",
    "tenant_id": "26ae5181a416420998eb2093aaed84d9",
    "create_time": "2019-03-27 01:33:18",
    "bandwidth_size": 7,
    "ip_version": 4,
    "bandwidth_name": "bandwidth-2aef",
    "bandwidth_share_type": "PER",
    "bandwidth_id": "7a258fff-10d8-44b8-8124-c59079eb8f4c"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.3.5 Releasing an EIP

Function

This API is used to release an EIP.

URI

DELETE /v1/{project_id}/publicips/{publicip_id}

[Table 5-56](#) describes the parameters.

Table 5-56 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
publicip_id	Yes	Specifies the unique identifier of an EIP.

Request Message

- Request parameter
None
- Example request
DELETE https://{Endpoint}/v1/{project_id}/publicips/{publicip_id}

Response Message

- Response parameter
None
- Example response
None
Or

```
{  
  "code": "xxx",  
  "message": "xxxxx"  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.4 Bandwidth

5.4.1 Querying a Bandwidth

Function

This API is used to query details about a bandwidth.

URI

GET /v1/{project_id}/bandwidths/{bandwidth_id}

[Table 5-57](#) describes the parameters.

Table 5-57 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth.

Request Message

- Request parameter
None
- Example request
Get `https://{Endpoint}/v1/{project_id}/bandwidths/{bandwidth_id}`

Response Message

- Response parameter

Table 5-58 Response parameter

Name	Type	Description
bandwidth	bandwidth object	Specifies the bandwidth object.

Table 5-59 Description of the **bandwidth** field

Name	Type	Description
name	String	<ul style="list-style-type: none"> Specifies the bandwidth name. The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).

Name	Type	Description
size	Integer	<ul style="list-style-type: none"> Specifies the bandwidth size. The value ranges from 1 Mbit/s to 300 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the bandwidth range of each region on the management console.)
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	<ul style="list-style-type: none"> The value is PER, indicating that the bandwidth is dedicated.
publicip_info	Array of publicip_info objects	<ul style="list-style-type: none"> Specifies information about the EIP that uses the bandwidth. For details, see Table 5-60.
tenant_id	String	Specifies the project ID.
bandwidth_type	String	<ul style="list-style-type: none"> Specifies the bandwidth type. The value is bgp.
charge_mode	String	<ul style="list-style-type: none"> Specifies whether the billing is based on traffic or bandwidth. Possible values can be bandwidth (billed by bandwidth) and traffic (billed by traffic). If the value is an empty character string or no value is specified, value bandwidth is used.
status	String	<ul style="list-style-type: none"> Specifies the bandwidth status. Possible values are as follows: <ul style="list-style-type: none"> FREEZED (Frozen) NORMAL (Normal)

Table 5-60 publicip_info object

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available.

Name	Type	Description
publicip_type	String	<ul style="list-style-type: none">Specifies the EIP type.Constraints:<ul style="list-style-type: none">The configured value must be supported by the system.publicip_id is an IPv4 port. If publicip_type is not specified, the default value is 5_bgp.

- Example response

```
{
  "bandwidth": {
    "id": "3cbd5ae9-368f-4bc8-8841-f2ecc322c64a",
    "name": "EIPResourceSetup_1553594229",
    "size": 5,
    "share_type": "PER",
    "publicip_info": [
      {
        "publicip_id": "22b02f40-b95f-465a-ae9b-7c8b0f042a41",
        "publicip_address": "10.xx.xx.62",
        "ip_version": 4,
        "publicip_type": "5_bgp",
      }
    ],
    "tenant_id": "26ae5181a416420998eb2093aaed84d9",
    "bandwidth_type": "bgp",
    "charge_mode": "bandwidth",
    "status": "NORMAL",
    "created_at": "2020-04-21T07:58:02Z",
    "updated_at": "2020-04-21T07:58:02Z"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.4.2 Querying Bandwidths

Function

This API is used to query bandwidths using search criteria.

URI

GET /v1/{project_id}/bandwidths

[Table 5-61](#) describes the parameters.

Table 5-61 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2³¹-1). The default value is 2000.</p> <p>limit can be used together with marker. For details, see the parameter description of marker.</p>

- Example request

```
GET https://{Endpoint}/v1/{project_id}/bandwidths?limit={limit}&marker={marker}
```

Response Message

- Response parameter

Table 5-62 Response parameter

Name	Type	Description
bandwidths	Array of bandwidths objects	Specifies the bandwidth objects. For details, see Table 5-63 .

Table 5-63 Description of the **bandwidths** field

Name	Type	Description
name	String	<ul style="list-style-type: none"> • Specifies the bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
size	Integer	<ul style="list-style-type: none"> • Specifies the bandwidth size in Mbit/s. • The value ranges from 1 Mbit/s to 300 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the bandwidth range of each region on the management console.)
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	<ul style="list-style-type: none"> • The value is PER, indicating that the bandwidth is dedicated. <p>If this parameter is not set, the list of all bandwidths will be returned by default.</p>
publicip_info	Array of publicip_info objects	<ul style="list-style-type: none"> • Specifies the information about the EIP that uses the bandwidth. For details, see Table 5-64.
tenant_id	String	Specifies the project ID.
bandwidth_type	String	<ul style="list-style-type: none"> • Specifies the bandwidth type. • The value is bgp.

Name	Type	Description
charge_mode	String	<ul style="list-style-type: none"> Specifies whether the bandwidth is billed by traffic or by bandwidth size. Possible values can be bandwidth (billed by bandwidth) and traffic (billed by traffic). If the value is an empty character string or no value is specified, value bandwidth is used.
status	String	<ul style="list-style-type: none"> Specifies the bandwidth status. Possible values are as follows: <ul style="list-style-type: none"> FREEZED (Frozen) NORMAL (Normal)

Table 5-64 publicip_info object

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available.
publicip_type	String	<ul style="list-style-type: none"> Specifies the EIP type. Constraints: <ul style="list-style-type: none"> The configured value must be supported by the system. publicip_id is an IPv4 port. If publicip_type is not specified, the default value is 5_bgp.

- Example response

```
{
  "bandwidths": [
    {
      "id": "09b99c91-da7c-449f-94e2-f4934c5b2a71",
      "name": "test-f632a7b0-ef50-4ac5-97e9-ddc56b3d5977",
      "size": 200,
      "share_type": "PER",
      "publicip_info": [
        {
          "publicip_id": "2a65923c-7133-415d-ae3b-cf9635a942c5",
          "publicip_address": "10.xx.xx.3",
          "ip_version": 4,
          "publicip_type": "5_bgp"
        }
      ]
    }
  ],
  "tenant_id": "26ae5181a416420998eb2093aaed84d9",
}
```

```
"bandwidth_type": "bgp",
"charge_mode": "bandwidth",
},
{
  "status": "NORMAL"
},
{
  "id": "0a583ff1-b43e-4000-ade3-e7af0097f832",
  "name": "test-7e880d5b-f458-40ad-a7e5-735c44cd8b7d",
  "size": 300,
  "share_type": "PER",
  "publicip_info": [
    {
      "publicip_id": "c754bc9a-16d5-4763-9674-d7561917aa80",
      "publicip_address": "10.xx.xx.9",
      "ip_version": 4,
      "publicip_type": "5_bgp"
    }
  ],
  "tenant_id": "26ae5181a416420998eb2093aaed84d9",
  "bandwidth_type": "bgp",
  "charge_mode": "bandwidth",
},
{
  "status": "NORMAL"
},
{
  "id": "0a673f00-3640-4a13-949e-7049b2916baf",
  "name": "bandwidth123",
  "size": 10,
  "share_type": "PER",
  "publicip_info": [
    {
      "publicip_id": "cec7fb70-2f82-4561-bd83-2121fb642fdc",
      "publicip_address": "10.xx.xx.184",
      "ip_version": 4,
      "publicip_type": "5_bgp"
    }
  ],
  "tenant_id": "26ae5181a416420998eb2093aaed84d9",
  "bandwidth_type": "bgp",
  "charge_mode": "bandwidth",
},
{
  "status": "NORMAL"
},
{
  "id": "0dde1eae-1783-46dc-998c-930fbe261ff9",
  "name": "bandwidth123",
  "size": 100,
  "share_type": "PER",
  "publicip_info": [
    {
      "publicip_id": "24232038-e178-40ad-80e4-5abb75db84be",
      "publicip_address": "10.xx.xx.101",
      "ip_version": 4,
      "publicip_type": "5_bgp"
    }
  ],
  "tenant_id": "26ae5181a416420998eb2093aaed84d9",
  "bandwidth_type": "bgp",
  "charge_mode": "bandwidth",
},
{
  "status": "NORMAL"
}
]
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.4.3 Updating a Bandwidth

Function

This API is used to update information about a bandwidth.

URI

PUT /v1/{project_id}/bandwidths/{bandwidth_id}

[Table 5-65](#) describes the parameters.

Table 5-65 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth.

Request Message

- Request parameter

Table 5-66 Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	bandwidth object	Specifies the bandwidth objects. For details, see Table 5-67 .

Table 5-67 Description of the **bandwidth** field

Name	Mandator y	Type	Description
name	No	String	<ul style="list-style-type: none"> Specifies the bandwidth name. The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). If the value is left blank, the name of the bandwidth is not changed. Either parameter name or size must be specified.
size	No	Integer	<ul style="list-style-type: none"> Specifies the bandwidth size in Mbit/s. The value ranges from 1 Mbit/s to 300 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.) If the parameter is not included, the bandwidth size is not changed. Either parameter name or size must be specified. If a decimal fraction (for example 10.2) or a character string (for example "10") is specified, the specified value will be automatically converted to an integer. The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows: <ul style="list-style-type: none"> The minimum increment is 1 Mbit/s if the allowed bandwidth ranges from 0 Mbit/s to 300 Mbit/s (with 300 Mbit/s included). The minimum increment is 50 Mbit/s if the allowed bandwidth ranges from 300 Mbit/s to 1000 Mbit/s (with 1000 Mbit/s included). The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.

- Example request

```
PUT https://{Endpoint}/v1/{project_id}/bandwidths/{bandwidth_id}
{
  "bandwidth":
    {"name": "bandwidth123",
     "size": 10
    }
}
```

Response Message

- Response parameter

Table 5-68 Response parameter

Name	Type	Description
bandwidth	bandwidth object	Specifies the bandwidth objects. For details, see Table 5-69 .

Table 5-69 Description of the **bandwidth** field

Name	Type	Description
name	String	<ul style="list-style-type: none"> • Specifies the bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
size	Integer	<ul style="list-style-type: none"> • Specifies the bandwidth size in Mbit/s. • The value ranges from 1Mbit/s~300Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the bandwidth range of each region on the management console.)
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	<ul style="list-style-type: none"> • The value is PER, indicating that the bandwidth is dedicated.
publicip_info	Array of publicip_info objects	<ul style="list-style-type: none"> • Specifies the information about the EIP that uses the bandwidth. For details, see Table 5-70.
tenant_id	String	Specifies the project ID.
bandwidth_type	String	<ul style="list-style-type: none"> • Specifies the bandwidth type. • The value is bgp.

Name	Type	Description
charge_mode	String	<ul style="list-style-type: none"> Specifies whether the bandwidth is billed by traffic or by bandwidth size. Possible values can be bandwidth (billed by bandwidth) and traffic (billed by traffic). If the value is an empty character string or no value is specified, value bandwidth is used.

Table 5-70 publicip_info objects

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available.
publicip_type	String	<ul style="list-style-type: none"> Specifies the EIP type. Constraints: <ul style="list-style-type: none"> The configured value must be supported by the system. publicip_id is an IPv4 port. If publicip_type is not specified, the default value is 5_bgp.

- Example response

```

{
  "bandwidth": {
    "id": "3fa5b383-5a73-4dcb-a314-c6128546d855",
    "name": "bandwidth123",
    "size": 10,
    "share_type": "PER",
    "publicip_info": [
      {
        "publicip_id": "6285e7be-fd9f-497c-bc2d-dd0bdea6efe0",
        "publicip_address": "161.xx.xx.9",
        "publicip_type": "5_bgp",
        "ip_version": 4
      }
    ],
    "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
    "bandwidth_type": "bgp",
    "charge_mode": "bandwidth",
    "status": "NORMAL"
  }
}

```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.5 Bandwidth (V2.0)

5.5.1 Assigning a Shared Bandwidth

Function

This API is used to assign a shared bandwidth.

URI

POST /v2.0/{project_id}/bandwidths

[Table 5-71](#) describes the parameters.

Table 5-71 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Message

- Request parameter

Table 5-72 Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	bandwidth object	Specifies the bandwidth objects. For details, see Table 5-73 .

Table 5-73 Description of the **bandwidth** field

Name	Mandatory	Type	Description
name	Yes	String	<ul style="list-style-type: none"> Specifies the bandwidth name. The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
size	Yes	Integer	<ul style="list-style-type: none"> Specifies the bandwidth size. The shared bandwidth has a minimum limit, which may vary depending on sites. The default minimum value is 5 Mbit/s. The value ranges from 1 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.) If a decimal fraction (for example 10.2) or a character string (for example "10") is specified, the specified value will be automatically converted to an integer. The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows: <ul style="list-style-type: none"> The minimum increment is 1 Mbit/s if the allowed bandwidth ranges from 0 Mbit/s to 300 Mbit/s (with 300 Mbit/s included). The minimum increment is 50 Mbit/s if the allowed bandwidth ranges from 300 Mbit/s to 1000 Mbit/s (with 1000 Mbit/s included). The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.

- Example request

POST https://{{Endpoint}}/v2.0/{{project_id}}/bandwidths

```
{
  "bandwidth": {
```

```

    "name": "bandwidth123",
    "size": 10,
  }
}

```

Response Message

- Response parameter

Table 5-74 Response parameter

Name	Type	Description
bandwidth	bandwidth object	Specifies the bandwidth objects. For details, see Table 5-75 .

Table 5-75 Description of the **bandwidth** field

Name	Type	Description
name	String	<ul style="list-style-type: none"> • Specifies the bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
size	Integer	<ul style="list-style-type: none"> • Specifies the bandwidth size. • The value ranges from 1 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	<ul style="list-style-type: none"> • Specifies whether the bandwidth is shared or dedicated. • The value can be PER or WHOLE. <ul style="list-style-type: none"> - WHOLE: Shared bandwidth - PER: Dedicated bandwidth
publicip_info	Array of publicip_info objects	<ul style="list-style-type: none"> • Specifies information about the EIP that uses the bandwidth. For details, see Table 5-76. • The bandwidth, whose type is WHOLE, can be used by multiple EIPs. The bandwidth, whose type is PER, can be used by only one EIP.

Name	Type	Description
tenant_id	String	Specifies the project ID.
bandwidth_type	String	<ul style="list-style-type: none"> Specifies the bandwidth type. The default value for the shared bandwidth is share.
charge_mode	String	<ul style="list-style-type: none"> Specifies whether the bandwidth is billed by traffic or by bandwidth size. Possible values can be bandwidth (billed by bandwidth) and traffic (billed by traffic). If the value is an empty character string or no value is specified, value bandwidth is used. The shared bandwidth can be billed only by bandwidth.
status	String	<ul style="list-style-type: none"> Specifies the bandwidth status. Possible values are as follows: <ul style="list-style-type: none"> FREEZED (Frozen) NORMAL (Normal)

Table 5-76 publicip_info object

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available.
publicip_type	String	<ul style="list-style-type: none"> Specifies the EIP type. Constraints: <ul style="list-style-type: none"> The configured value must be supported by the system. publicip_id is an IPv4 port. If publicip_type is not specified, the default value is 5_bgp.

- Example response

```
{
  "bandwidth": {
    "id": "1bffc5f2-ff19-45a6-96d2-dfdca49cc387",
    "name": "bandwidth123",
    "size": 10,
    "share_type": "WHOLE",
    "publicip_info": [],
    "tenant_id": "26ae5181a416420998eb2093aaed84d9",
```

```
"bandwidth_type": "share",  
"charge_mode": "bandwidth",  
"status": "NORMAL",  
"created_at": "2020-04-21T07:58:02Z",  
"updated_at": "2020-04-21T07:58:02Z"  
}  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.5.2 Assigning Multiple Shared Bandwidths

Function

This API is used to assign multiple shared bandwidths at a time.

URI

POST /v2.0/{project_id}/batch-bandwidths

[Table 5-77](#) describes the parameters.

Table 5-77 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Message

- Request parameter

Table 5-78 Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	bandwidth object	Specifies the bandwidth objects. For details, see Table 5-79 .

Table 5-79 Description of the **bandwidth** field

Name	Mandatory	Type	Description
name	Yes	String	<ul style="list-style-type: none">• Specifies the bandwidth name.• The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).

Name	Mandatory	Type	Description
size	Yes	Integer	<ul style="list-style-type: none"> • Specifies the bandwidth size. The shared bandwidth has a minimum limit, which may vary depending on sites. The default minimum value is 5 Mbit/s. • The value ranges from 1 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.) • The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The details are as follows: <ul style="list-style-type: none"> - The minimum increment is 1 Mbit/s if the allowed bandwidth ranges from 0 Mbit/s to 300 Mbit/s (with 300 Mbit/s included). - The minimum increment is 50 Mbit/s if the allowed bandwidth

Name	Mandator y	Type	Description
			<p>ranges from 300 Mbit/s to 1000 Mbit/s (with 1000 Mbit/s included).</p> <ul style="list-style-type: none"> - The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.
count	Yes	Integer	<ul style="list-style-type: none"> • Specifies the number of shared bandwidths that can be assigned at a time. • The value is a positive integer. • If a decimal fraction (for example 2.2) or a character string (for example "2") is specified, the specified value will be automatically converted to an integer.

- Example request

POST https://{Endpoint}/v2.0/{project_id}/batch-bandwidths

```
{
  "bandwidth": {
    "name": "bandwidth123",
    "size": 10,
    "count": 2
  }
}
```

Response Message

- Response parameter

Table 5-80 Response parameter

Name	Type	Description
bandwidths	Array of bandwidths objects	Specifies the bandwidth objects. For details, see Table 5-81 .

Table 5-81 Description of the **bandwidths** field

Name	Type	Description
name	String	<ul style="list-style-type: none"> Specifies the bandwidth name. The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
size	Integer	<ul style="list-style-type: none"> Specifies the bandwidth size. The value ranges from 1 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	<ul style="list-style-type: none"> Specifies whether the bandwidth is shared or dedicated. The value can be PER or WHOLE. <ul style="list-style-type: none"> WHOLE: Shared bandwidth PER: Dedicated bandwidth
publicip_info	Array of publicip_info objects	<ul style="list-style-type: none"> Specifies information about the EIP that uses the bandwidth. For details, see Table 5-82. The bandwidth, whose type is WHOLE, can be used by multiple EIPs. The bandwidth, whose type is PER, can be used by only one EIP.
tenant_id	String	Specifies the project ID.
bandwidth_type	String	<ul style="list-style-type: none"> Specifies the bandwidth type. The default value for the shared bandwidth is share.

Name	Type	Description
charge_mode	String	<ul style="list-style-type: none"> Specifies whether the bandwidth is billed by traffic or by bandwidth size. Possible values can be bandwidth (billed by bandwidth) and traffic (billed by traffic). If the value is an empty character string or no value is specified, value bandwidth is used. The shared bandwidth can be billed only by bandwidth.
status	String	<ul style="list-style-type: none"> Specifies the bandwidth status. Possible values are as follows: <ul style="list-style-type: none"> FREEZED (Frozen) NORMAL (Normal)

Table 5-82 publicip_info object

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available.
publicip_type	String	<ul style="list-style-type: none"> Specifies the EIP type. Constraints: <ul style="list-style-type: none"> The configured value must be supported by the system. publicip_id is an IPv4 port. If publicip_type is not specified, the default value is 5_bgp.

- Example response

```

{
  "bandwidths": [
    {
      "id": "7e5a1a30-6e88-4ce5-b5fa-1d6c6864e084",
      "name": "bandwidth123",
      "size": 10,
      "share_type": "WHOLE",
      "publicip_info": [],
      "tenant_id": "26ae5181a416420998eb2093aaed84d9",
      "bandwidth_type": "share",
      "charge_mode": "bandwidth",
      "billing_info": "",
      "status": "NORMAL"
    }
  ],
  {

```

```
"id": "ed2da50a-3ce9-4d86-9f17-e8f3801299a5",  
"name": "bandwidth123",  
"size": 10,  
"share_type": "WHOLE",  
"publicip_info": [],  
"tenant_id": "26ae5181a416420998eb2093aaed84d9",  
"bandwidth_type": "share",  
"charge_mode": "bandwidth",  
"billing_info": "",  
"status": "NORMAL"  
}  
]  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.5.3 Deleting a Shared Bandwidth

Function

This API is used to delete a shared bandwidth.

URI

DELETE /v2.0/{project_id}/bandwidths/{bandwidth_id}

[Table 5-83](#) describes the parameters.

Table 5-83 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth. Currently, only the shared bandwidth can be deleted.

Request Message

- Request parameter
None

- Example request
DELETE https://{Endpoint}/v2.0/{project_id}/bandwidths/{bandwidth_id}

Response Message

- Response parameter
None
- Example response

Or

```
{  
  "code": "xxx",  
  "message": "xxxxx"  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.5.4 Adding an EIP to a Shared Bandwidth

Function

This API is used to add an EIP to a shared bandwidth.

URI

POST /v2.0/{project_id}/bandwidths/{bandwidth_id}/insert

[Table 5-84](#) describes the parameters.

Table 5-84 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth.

Request Message

- Request parameter

Table 5-85 Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	bandwidth object	Specifies the bandwidth objects. For details, see Table 5-86 .

Table 5-86 Description of the **bandwidth** field

Name	Mandatory	Type	Description
publicip_info	Yes	Array of publicip_info objects	<ul style="list-style-type: none"> Specifies information about the EIP to be added to the shared bandwidth. For details, see Table 5-87. The bandwidth, whose type is WHOLE, can be used by multiple EIPs. The number of EIPs varies depending on the tenant quota. By default, a shared bandwidth can be used by up to 20 EIPs.

Table 5-87 **publicip_info** object

Name	Mandatory	Type	Description
publicip_id	Yes	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_type	No	String	<ul style="list-style-type: none"> Specifies the EIP type. Constraints: <ul style="list-style-type: none"> The configured value must be supported by the system. publicip_id is an IPv4 port. If publicip_type is not specified, the default value is 5_bgp.

- Example request

POST https://{Endpoint}/v2.0/{project_id}/bandwidths/{bandwidth_id}/insert

```
{
  "bandwidth": {
    "publicip_info": [
      {
        "publicip_id": "29b114d1-2d41-4741-a1f0-b6f80aabceff",
        "publicip_type": "5_bgp",
      }
    ]
  }
}
```

Response Message

- Response parameter

Table 5-88 Response parameter

Name	Type	Description
bandwidth	bandwidth object	Specifies the bandwidth objects. For details, see Table 5-89 .

Table 5-89 Description of the **bandwidth** field

Name	Type	Description
name	String	<ul style="list-style-type: none"> • Specifies the bandwidth name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
size	Integer	<ul style="list-style-type: none"> • Specifies the bandwidth size. • The value ranges from 1 Mbit/s to 2000 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)
id	String	Specifies the bandwidth ID, which uniquely identifies the bandwidth.
share_type	String	<ul style="list-style-type: none"> • Specifies whether the bandwidth is shared or dedicated. • The value can be PER or WHOLE. <ul style="list-style-type: none"> – WHOLE: Shared bandwidth – PER: Dedicated bandwidth
publicip_info	Array of publicip_info objects	<ul style="list-style-type: none"> • Specifies information about the EIP that uses the bandwidth. For details, see Table 5-90. • The bandwidth, whose type is WHOLE, can be used by multiple EIPs. The bandwidth, whose type is PER, can be used by only one EIP.
tenant_id	String	Specifies the project ID.

Name	Type	Description
bandwidth_type	String	<ul style="list-style-type: none"> Specifies the bandwidth type. The default value for the shared bandwidth is share.
charge_mode	String	<ul style="list-style-type: none"> Specifies whether the bandwidth is billed by traffic or by bandwidth size. Possible values can be bandwidth (billed by bandwidth) and traffic (billed by traffic). If the value is an empty character string or no value is specified, value bandwidth is used. The shared bandwidth can be billed only by bandwidth.
status	String	<ul style="list-style-type: none"> Specifies the bandwidth status. Possible values are as follows: <ul style="list-style-type: none"> FREEZED (Frozen) NORMAL (Normal)

Table 5-90 publicip_info objects

Name	Type	Description
publicip_id	String	Specifies the ID of the EIP that uses the bandwidth.
publicip_address	String	Specifies the obtained EIP if only IPv4 EIPs are available.
publicip_type	String	<ul style="list-style-type: none"> Specifies the EIP type. Constraints: <ul style="list-style-type: none"> The configured value must be supported by the system. publicip_id is an IPv4 port. If publicip_type is not specified, the default value is 5_bgp.

- Example response

```
{
  "bandwidth": {
    "id": "3fa5b383-5a73-4dcb-a314-c6128546d855",
    "name": "bandwidth123",
    "size": 10,
    "share_type": "WHOLE",
    "publicip_info": [
      {
        "publicip_id": "1d184b2c-4ec9-49b5-a3f9-27600a76ba3f",
        "publicip_address": "99.xx.xx.82",
```



```
        "publicip_type": "5_bgp",  
        "ip_version": 4  
    }  
  ],  
  "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",  
  "charge_mode": "traffic",  
  "bandwidth_type": "share",  
  "status": "NORMAL"  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.5.5 Removing an EIP from a Shared Bandwidth

Function

This API is used to remove an EIP from a shared bandwidth.

URI

POST /v2.0/{project_id}/bandwidths/{bandwidth_id}/remove

[Table 5-91](#) describes the parameters.

Table 5-91 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
bandwidth_id	Yes	Specifies the bandwidth ID, which uniquely identifies the bandwidth.

Request Message

- Request parameter

Table 5-92 Request parameter

Name	Mandatory	Type	Description
bandwidth	Yes	bandwidth object	Specifies the bandwidth objects. For details, see Table 5-93 .

Table 5-93 Description of the **bandwidth** field

Name	Mandatory	Type	Description
publicip_info	Yes	Array of publicip_info objects	<ul style="list-style-type: none">Specifies information about the EIP to be removed from the bandwidth. For details, see Table 5-94.The bandwidth, whose type is WHOLE, can be used by multiple EIPs. The number of EIPs varies depending on the tenant quota. By default, a shared bandwidth can be used by up to 20 EIPs.
charge_mode	Yes	String	After an EIP is removed from a shared bandwidth, a dedicated bandwidth will be allocated to the EIP, and you will be billed for the dedicated bandwidth. Specifies whether the dedicated bandwidth used by the EIP that has been removed from a shared bandwidth is billed by traffic or by bandwidth. The value can be bandwidth or traffic .
size	Yes	Integer	After an EIP is removed from a shared bandwidth, a dedicated bandwidth will be allocated to the EIP, and you will be billed for the dedicated bandwidth. Specifies the size (Mbit/s) of the dedicated bandwidth used by the EIP that has been removed from a shared bandwidth. The value ranges from 1 Mbit/s to 300 Mbit/s by default. (The specific range may vary depending on the configuration in each region. You can see the bandwidth range of each region on the management console.)

Table 5-94 publicip_info object

Name	Mandatory	Type	Description
publicip_id	Yes	String	Specifies the ID of the EIP that uses the bandwidth.

- Example request

POST https://{{Endpoint}}/v2.0/{{project_id}}/bandwidths/{{bandwidth_id}}/remove

```
{
  "bandwidth": {
    "publicip_info": [
      {
        "publicip_id": "d91b0028-6f6b-4478-808a-297b75b6812a"
      },
      {
        "publicip_id": "1d184b2c-4ec9-49b5-a3f9-27600a76ba3f"
      }
    ],
    "charge_mode": "traffic",
    "size": 22
  }
}
```

Response Message

- Response parameter

None

- Example response

None

Or

```
{
  "code": "xxx",
  "message": "xxxxx"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.6 Quota

5.6.1 Querying Quotas

Function

This API is used to query network resource quotas of a tenant. The network resources include VPCs, subnets, security groups, security group rules, EIPs, and VPNs.

URI

GET /v1/{project_id}/quotas

Example:

GET https://{Endpoint}/v1/{project_id}/quotas?type={type}

[Table 5-95](#) describes the parameters.

Table 5-95 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Name	Mandatory	Type	Description
type	No	String	<ul style="list-style-type: none"> • Specifies the resource type. • Values: <ul style="list-style-type: none"> - vpc: VPC - subnet: Subnet - securityGroup: Security group - securityGroupRule: Security group rule - publicIp: EIP - vpcPeer: VPC peering connection - loadbalancer: Load balancer - listener: Load balancer listener - physicalConnect: Direct Connect connection - virtualInterface: Virtual interface - firewall: Firewall - shareBandwidthIP: IP address added to a shared bandwidth - shareBandwidth: Shared bandwidth - address_group: IP address group - flow_log: VPC flow log - vpcContainRoutetable: Number of route tables associated with a VPC - routetableContainRoutes: Number of routes in a route table

Request Parameters

None

Example Request

GET https://{Endpoint}/v1/{project_id}/quotas

Response Parameters

Table 5-96 Response parameter

Name	Type	Description
quotas	quotas object	Specifies the quota object. For details, see Table 5-97 .

Table 5-97 Description of the **quotas** field

Name	Type	Description
resources	Array of resource objects	Specifies the resource objects. For details, see Table 5-98 .

Table 5-98 Description of the **resource** field

Name	Type	Description
type	String	<ul style="list-style-type: none"> • Specifies the resource type. • Values: <ul style="list-style-type: none"> – vpc: VPC – subnet: Subnet – securityGroup: Security group – securityGroupRule: Security group rule – publicIp: EIP – vpcPeer: VPC peering connection – loadbalancer: Load balancer – listener: Load balancer listener – physicalConnect: Direct Connect connection – virtualInterface: Virtual interface – firewall: Firewall – shareBandwidthIP: IP address added to a shared bandwidth – shareBandwidth: Shared bandwidth – address_group: IP address group – flow_log: VPC flow log – vpcContainRoutetable: Number of route tables associated with a VPC – routetableContainRoutes: Number of routes in a route table

Name	Type	Description
used	Integer	<ul style="list-style-type: none">Specifies the number of created network resources.The value ranges from 0 to the value of quota.
quota	Integer	<ul style="list-style-type: none">Specifies the maximum quota values for the resources.The value ranges from the default quota value to the maximum quota value.
min	Integer	Specifies the minimum quota value allowed.

 **NOTE**

If value **-1** is returned when you use an API to query your VPC quota, this indicates that the VPC quota is not limited.

Example Response

```
{
  "quotas": {
    "resources": [
      {
        "type": "vpc",
        "used": 4,
        "quota": 150,
        "min": 0
      },
      {
        "type": "subnet",
        "used": 5,
        "quota": 400,
        "min": 0
      },
      {
        "type": "securityGroup",
        "used": 1,
        "quota": 100,
        "min": 0
      },
      {
        "type": "securityGroupRule",
        "used": 6,
        "quota": 5000,
        "min": 0
      },
      {
        "type": "publicIp",
        "used": 2,
        "quota": 10,
        "min": 0
      },
      {
        "type": "vpcPeer",
        "used": 0,
        "quota": 50,
        "min": 0
      },
      {
        "type": "physicalConnect",
        "used": 0,

```

```
    "quota":10,  
    "min":0  
  },  
  {  
    "type":"virtualInterface",  
    "used":0,  
    "quota":50,  
    "min":0  
  },  
  {  
    "type": "firewall",  
    "used": 0,  
    "quota": 200,  
    "min": 0  
  },  
  {  
    "type": "shareBandwidth",  
    "used": 0,  
    "quota": 5,  
    "min": 0  
  },  
  {  
    "type": "shareBandwidthIP",  
    "used": 0,  
    "quota": 20,  
    "min": 0  
  },  
  {  
    "type": "loadbalancer",  
    "used": 0,  
    "quota": 10,  
    "min": 0  
  },  
  {  
    "type": "listener",  
    "used": 0,  
    "quota": 10,  
    "min": 0  
  },  
  {  
    "type": "vpcContainRoutetable",  
    "used": 0,  
    "quota": 1,  
    "min": 0  
  },  
  {  
    "type": "routetableContainRoutes",  
    "used": 0,  
    "quota": 200,  
    "min": 0  
  },  
  {  
    "type": "address_group",  
    "used": 0,  
    "quota": 50,  
    "min": 0  
  }  
] }  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.7 Private IP Address

5.7.1 Assigning a Private IP Address

Function

This API is used to assign a private IP address.

URI

POST /v1/{project_id}/privateips

[Table 5-99](#) describes the parameters.

Table 5-99 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameters

Table 5-100 Request parameter

Name	Mandatory	Type	Description
privateips	Yes	Array of privateip objects	Specifies the private IP address objects. For details, see Table 5-101 .

Table 5-101 Description of the [privateip](#) field

Name	Mandatory	Type	Description
subnet_id	Yes	String	Specifies the ID of the subnet from which IP addresses are assigned. If you use the management console, the value of this parameter is the Network ID value.

Name	Mandatory	Type	Description
ip_address	No	String	<ul style="list-style-type: none"> Specifies the target IP address. The value can be an available IP address in the subnet. If it is not specified, the system automatically assigns an IP address.

Example Request

- Assign two private IP addresses from the subnet whose ID is 531dec0f-3116-411b-a21b-e612e42349fd. One IP address is automatically assigned, and the other is specified to 192.168.1.17.

POST https://{Endpoint}/v1/{project_id}/privateips

```
{
  "privateips":
  [
    {
      "subnet_id": "531dec0f-3116-411b-a21b-e612e42349fd"
    },
    {
      "subnet_id": "531dec0f-3116-411b-a21b-e612e42349fd",
      "ip_address": "192.168.1.17"
    }
  ]
}
```

Response Parameters

Table 5-102 Response parameter

Name	Type	Description
privateips	Array of privateip objects	Specifies the private IP address objects. For details, see Table 5-103 .

Table 5-103 Description of the [privateip](#) field

Name	Type	Description
status	String	<ul style="list-style-type: none"> Specifies the status of the private IP address. Possible values are as follows: <ul style="list-style-type: none"> ACTIVE DOWN
id	String	Specifies the ID of the private IP address, which uniquely identifies the private IP address.

Name	Type	Description
subnet_id	String	Specifies the ID of the subnet from which IP addresses are assigned. If you use the management console, the value of this parameter is the Network ID value.
tenant_id	String	Specifies the project ID.
device_owner	String	<ul style="list-style-type: none"> Specifies the resource using the private IP address. The parameter is left blank if it is not used. The value can be: <ul style="list-style-type: none"> network:dhcp: DHCP service IP address network:router_interface_distributed: Gateway IP address compute:xxx (<i>xxx</i> indicates the AZ name. For example, compute:aa-bb-cc indicates that the IP address is used by an ECS in the AZ aa-bb-cc.): IP address of an ECS NIC neutron:VIP_PORT: Virtual IP address neutron:LOADBALANCERV2: IP address of a shared load balancer neutron:LOADBALANCERV3: IP address of a dedicated load balancer network:endpoint_interface: IP address of a VPC endpoint network:nat_gateway: IP address used by a NAT gateway The value range specifies only the type of private IP addresses supported by the current service.
ip_address	String	Specifies the assigned private IP address.

Example Response

```
{
  "privateips": [
    {
      "status": "DOWN",
      "id": "c60c2ce1-1e73-44bd-bf48-fd688448ff7b",
      "subnet_id": "531dec0f-3116-411b-a21b-e612e42349fd",
      "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
      "device_owner": "",
      "ip_address": "192.168.1.10"
    }
  ]
}
```

```
    },  
    {  
      "status": "DOWN",  
      "id": "4b123c18-ae92-4dfa-92cd-d44002359aa1",  
      "subnet_id": "531dec0f-3116-411b-a21b-e612e42349fd",  
      "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",  
      "device_owner": "",  
      "ip_address": "192.168.1.17"  
    }  
  ]  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.7.2 Querying Private IP Address Details

Function

This API is used to query details about a private IP address using the specified ID.

URI

GET /v1/{project_id}/privateips/{privateip_id}

[Table 5-104](#) describes the parameters.

Table 5-104 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
privateip_id	Yes	Specifies the ID of the private IP address, which uniquely identifies the private IP address.

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v1/{project_id}/privateips/d600542a-b231-45ed-af05-e9930cb14f78
```

Response Parameters

Table 5-105 Response parameter

Name	Type	Description
privateip	privateip object	Specifies the private IP address objects. For details, see Table 5-106 .

Table 5-106 Description of the **privateip** field

Name	Type	Description
status	String	<ul style="list-style-type: none">Specifies the status of the private IP address.Possible values are as follows:<ul style="list-style-type: none">ACTIVEDOWN
id	String	Specifies the ID of the private IP address, which uniquely identifies the private IP address.
subnet_id	String	Specifies the ID of the subnet from which IP addresses are assigned. If you use the management console, the value of this parameter is the Network ID value.
tenant_id	String	Specifies the project ID.

Name	Type	Description
device_owner	String	<ul style="list-style-type: none"> Specifies the resource using the private IP address. The parameter is left blank if it is not used. The value can be: <ul style="list-style-type: none"> network:dhcp: DHCP service IP address network:router_interface_distributed: Gateway IP address compute:xxx (<i>xxx</i> indicates the AZ name. For example, compute:aa-bb-cc indicates that the IP address is used by an ECS in the AZ aa-bb-cc.): IP address of an ECS NIC neutron:VIP_PORT: Virtual IP address neutron:LOADBALANCERV2: IP address of a shared load balancer neutron:LOADBALANCERV3: IP address of a dedicated load balancer network:endpoint_interface: IP address of a VPC endpoint network:nat_gateway: IP address used by a NAT gateway The value range specifies only the type of private IP addresses supported by the current service.
ip_address	String	Specifies the assigned private IP address.

Example Response

```
{
  "privateip":
  {
    "status": "DOWN",
    "id": "d600542a-b231-45ed-af05-e9930cb14f78",
    "subnet_id": "531dec0f-3116-411b-a21b-e612e42349fd",
    "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
    "device_owner": "",
    "ip_address": "192.168.1.11"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.7.3 Querying Private IP Addresses

Function

This API is used to query private IP addresses using search criteria and to display the private IP addresses in a list.

URI

GET /v1/{project_id}/subnets/{subnet_id}/privateips

Example:

```
GET https://{Endpoint}/v1/{project_id}/subnets/{subnet_id}/privateips?  
limit=10&marker=4779ab1c-7c1a-44b1-a02e-93dfc361b32d
```

[Table 5-107](#) describes the parameters.

Table 5-107 Parameter description

Name	Mandator y	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
subnet_id	Yes	String	Specifies the unique ID of the subnet to which the private IP address belongs. If you use the management console, the value of this parameter is the Network ID value.

Name	Mandator y	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax ($2^{31}-1$). The default value is 2000.</p> <p>limit can be used together with marker. For details, see the parameter description of marker.</p>

Request Parameters

None

Example Request

GET https://{Endpoint}/v1/{project_id}/subnets/{subnet_id}/privateips

Response Parameters

Table 5-108 Request parameter

Name	Type	Description
privateips	Array of privateip objects	Specifies the private IP address objects. For details, see Table 5-109 .

Table 5-109 Description of the **privateip** field

Name	Type	Description
status	String	<ul style="list-style-type: none"> Specifies the status of the private IP address. Possible values are as follows: <ul style="list-style-type: none"> ACTIVE DOWN
id	String	Specifies the ID of the private IP address, which uniquely identifies the private IP address.
subnet_id	String	<p>Specifies the ID of the subnet from which IP addresses are assigned.</p> <p>If you use the management console, the value of this parameter is the Network ID value.</p>
tenant_id	String	Specifies the project ID.

Name	Type	Description
device_owner	String	<ul style="list-style-type: none"> Specifies the resource using the private IP address. The parameter is left blank if it is not used. The value can be: <ul style="list-style-type: none"> network:dhcp: DHCP service IP address network:router_interface_distributed: Gateway IP address compute:xxx (<i>xxx</i> indicates the AZ name. For example, compute:aa-bb-cc indicates that the IP address is used by an ECS in the AZ aa-bb-cc.): IP address of an ECS NIC neutron:VIP_PORT: Virtual IP address neutron:LOADBALANCERV2: IP address of a shared load balancer neutron:LOADBALANCERV3: IP address of a dedicated load balancer network:endpoint_interface: IP address of a VPC endpoint network:nat_gateway: IP address used by a NAT gateway The value range specifies only the type of private IP addresses supported by the current service.
ip_address	String	Specifies the assigned private IP address.

Example Response

```
{
  "privateips": [
    {
      "status": "DOWN",
      "id": "d600542a-b231-45ed-af05-e9930cb14f78",
      "subnet_id": "531dec0f-3116-411b-a21b-e612e42349fd",
      "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
      "device_owner": "",
      "ip_address": "192.168.1.11"
    },
    {
      "status": "DOWN",
      "id": "d600542a-b231-45ed-af05-e9930cb14f79",
      "subnet_id": "531dec0f-3116-411b-a21b-e612e42349fd",
      "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
      "device_owner": "",
      "ip_address": "192.168.1.12"
    }
  ]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.7.4 Deleting a Private IP Address

Function

This API is used to delete a private IP address.

URI

DELETE /v1/{project_id}/privateips/{privateip_id}

[Table 5-110](#) describes the parameters.

Table 5-110 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
privateip_id	Yes	Specifies the ID of the private IP address, which uniquely identifies the private IP address.

Request Parameters

None

Example Request

DELETE https://{Endpoint}/v1/{project_id}/privateips/4779ab1c-7c1a-44b1-a02e-93dfc361b32d

Response Parameters

None

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.8 Security Group

5.8.1 Creating a Security Group

Function

This API is used to create a security group.

URI

POST /v1/{project_id}/security-groups

[Table 5-111](#) describes the parameters.

Table 5-111 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameters

Table 5-112 Request parameter

Name	Mandatory	Type	Description
security_group	Yes	security_group object	Specifies the security group objects. For details, see Table 5-113 .

Table 5-113 Description of [security_group](#) fields

Name	Mandatory	Type	Description
name	Yes	String	<ul style="list-style-type: none">Specifies the security group name.The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).

Name	Mandatory	Type	Description
vpc_id	No	String	Specifies the ID of the VPC that the security group is associated with. NOTE Currently, this parameter is not recommended because it is only used as a prompt and does not restrict that the security group must be associated with the VPC.

Example Request

- Create a security group named **sg-01** in the VPC with ID of 3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85.

POST https://{Endpoint}/v1/{project_id}/security-groups

```
{
  "security_group": {
    "name": "sg-01",
    "vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",
  }
}
```

Response Parameters

Table 5-114 Response parameter

Name	Type	Description
security_group	security_group object	Specifies the security group objects. For details, see Table 5-115 .

Table 5-115 Description of **security_group** fields

Name	Type	Description
name	String	Specifies the security group name.
description	String	Provides supplementary information about the security group.
id	String	Specifies the security group ID, which uniquely identifies the security group.

Name	Type	Description
vpc_id	String	Specifies the ID of the VPC that the security group is associated with. NOTE Currently, this parameter is not recommended because it is only used as a prompt and does not restrict that the security group must be associated with the VPC.
security_group_rules	Array of security_group_rule objects	Specifies the default security group rules, which ensure that resources in the security group can communicate with one another.

Table 5-116 security_group_rule objects

Name	Type	Description
id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
description	String	<ul style="list-style-type: none"> Provides supplementary information about the security group rule. The value can contain no more than 255 characters, including letters and digits.
security_group_id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
direction	String	<ul style="list-style-type: none"> Specifies the direction of access control. Possible values are as follows: <ul style="list-style-type: none"> egress ingress
ethertype	String	<ul style="list-style-type: none"> Specifies the IP protocol version. The value can be IPv4 or IPv6.

Name	Type	Description
protocol	String	<ul style="list-style-type: none"> Specifies the protocol type. The value can be icmp, tcp, udp, or an IP protocol number (0 to 255, for example, 47 for GRE) If the parameter is left blank, all protocols are supported.
port_range_min	Integer	<ul style="list-style-type: none"> Specifies the start port number. The value ranges from 1 to 65535. The value cannot be greater than the port_range_max value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.
port_range_max	Integer	<ul style="list-style-type: none"> Specifies the end port number. The value ranges from 1 to 65535. If the protocol is not icmp, the value cannot be smaller than the port_range_min value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.
remote_ip_prefix	String	<ul style="list-style-type: none"> Specifies the remote IP address. If the access control direction is set to egress, the parameter specifies the source IP address. If the access control direction is set to ingress, the parameter specifies the destination IP address. The value can be in the CIDR format or IP addresses. The parameter is mutually exclusive with parameter remote_group_id and remote_address_group_id.

Name	Type	Description
remote_group_id	String	<ul style="list-style-type: none"> Specifies the ID of the peer security group. The value is mutually exclusive with parameter remote_ip_prefix and remote_address_group_id.
remote_address_group_id	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.
tenant_id	String	<ul style="list-style-type: none"> Specifies the ID of the project to which the security group rule belongs.

Example Response

```
{
  "security_group": {
    "id": "16b6e77a-08fa-42c7-aa8b-106c048884e6",
    "name": "qq",
    "description": "",
    "vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",
    "security_group_rules": [
      {
        "id": "f11a3824-ac19-4fad-b4f1-c5f4a6dd0a80",
        "tenant_id": "060576782980d5762f9ec014dd2f1148",
        "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
        "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
        "direction": "ingress",
        "protocol": null,
        "description": "",
        "ethertype": "IPv6",
        "remote_ip_prefix": null,
        "remote_address_group_id": null,
        "port_range_max": null,
        "port_range_min": null
      },
      {
        "id": "3d6480e8-9ea4-46dc-bb1b-8db190cd5677",
        "tenant_id": "060576782980d5762f9ec014dd2f1148",
        "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
        "remote_group_id": null,
        "direction": "egress",
        "protocol": null,
        "description": "",
        "ethertype": "IPv6",
        "remote_ip_prefix": null,
        "remote_address_group_id": null,
        "port_range_max": null,
        "port_range_min": null
      },
      {
        "id": "9581f18c-1fdd-43da-ace9-7758a56ef28a",
        "tenant_id": "060576782980d5762f9ec014dd2f1148",
        "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",

```



```
    "remote_group_id": null,  
    "direction": "egress",  
    "protocol": null,  
    "description": "",  
    "ethertype": "IPv4",  
    "remote_ip_prefix": null,  
    "remote_address_group_id": null,  
    "port_range_max": null,  
    "port_range_min": null  
  },  
  {  
    "id": "a3ba270e-e58b-432d-a912-aeb7eace9fb8",  
    "tenant_id": "060576782980d5762f9ec014dd2f1148",  
    "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",  
    "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",  
    "direction": "ingress",  
    "protocol": null,  
    "description": "",  
    "ethertype": "IPv4",  
    "remote_ip_prefix": null,  
    "remote_address_group_id": null,  
    "port_range_max": null,  
    "port_range_min": null  
  }  
] } }
```

Status Codes

See [Status Codes](#).

Error Codes

See [Error Codes](#).

5.8.2 Querying Security Group Details

Function

This API is used to query details about a security group.

URI

GET /v1/{project_id}/security-groups/{security_group_id}

[Table 5-117](#) describes the parameters.

Table 5-117 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Name	Mandatory	Description
security_group_id	Yes	Specifies the security group ID, which uniquely identifies the security group.

Request Parameters

None

Example Request

GET https://{Endpoint}/v1/{project_id}/security-groups/16b6e77a-08fa-42c7-aa8b-106c048884e6

Response Parameters

Table 5-118 Response parameter

Name	Type	Description
security_group	security_group object	Specifies the security group object.

Table 5-119 Description of **security_group** fields

Name	Type	Description
name	String	Specifies the security group name.
description	String	Provides supplementary information about the security group.
id	String	Specifies the security group ID, which uniquely identifies the security group.
vpc_id	String	Specifies the resource ID of the VPC to which the security group belongs. NOTE Currently, this parameter is not recommended because it is only used as a prompt and does not restrict that the security group must be associated with the VPC.

Name	Type	Description
security_group_rules	Array of security_group_rule objects	Specifies the default security group rules, which ensure that resources in the security group can communicate with one another.

Table 5-120 security_group_rule objects

Name	Type	Description
id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
description	String	<ul style="list-style-type: none"> Provides supplementary information about the security group rule. The value can contain no more than 255 characters, including letters and digits.
security_group_id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
direction	String	<ul style="list-style-type: none"> Specifies the direction of access control. Possible values are as follows: <ul style="list-style-type: none"> egress ingress
ethertype	String	<ul style="list-style-type: none"> Specifies the IP protocol version. The value can be IPv4 or IPv6.
protocol	String	<ul style="list-style-type: none"> Specifies the protocol type. The value can be icmp, tcp, udp, or an IP protocol number (0 to 255, for example, 47 for GRE) If the parameter is left blank, all protocols are supported.

Name	Type	Description
port_range_min	Integer	<ul style="list-style-type: none"> Specifies the start port number. The value ranges from 1 to 65535. The value cannot be greater than the port_range_max value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.
port_range_max	Integer	<ul style="list-style-type: none"> Specifies the end port number. The value ranges from 1 to 65535. If the protocol is not icmp, the value cannot be smaller than the port_range_min value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.
remote_ip_prefix	String	<ul style="list-style-type: none"> Specifies the remote IP address. If the access control direction is set to egress, the parameter specifies the source IP address. If the access control direction is set to ingress, the parameter specifies the destination IP address. The value can be in the CIDR format or IP addresses. The parameter is mutually exclusive with parameter remote_group_id and remote_address_group_id.
remote_group_id	String	<ul style="list-style-type: none"> Specifies the ID of the peer security group. The value is mutually exclusive with parameter remote_ip_prefix and remote_address_group_id.

Name	Type	Description
remote_address_group_id	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.
tenant_id	String	<ul style="list-style-type: none"> Specifies the ID of the project to which the security group rule belongs.

Example Response

```
{
  "security_group": {
    "id": "16b6e77a-08fa-42c7-aa8b-106c048884e6",
    "name": "qq",
    "description": "qq",
    "vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",
    "security_group_rules": [
      {
        "id": "f11a3824-ac19-4fad-b4f1-c5f4a6dd0a80",
        "tenant_id": "060576782980d5762f9ec014dd2f1148",
        "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
        "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
        "direction": "ingress",
        "protocol": null,
        "description": "",
        "ethertype": "IPv6",
        "remote_ip_prefix": null,
        "remote_address_group_id": null,
        "port_range_max": null,
        "port_range_min": null
      },
      {
        "id": "3d6480e8-9ea4-46dc-bb1b-8db190cd5677",
        "tenant_id": "060576782980d5762f9ec014dd2f1148",
        "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
        "remote_group_id": null,
        "direction": "egress",
        "protocol": null,
        "description": "",
        "ethertype": "IPv6",
        "remote_ip_prefix": null,
        "remote_address_group_id": null,
        "port_range_max": null,
        "port_range_min": null
      },
      {
        "id": "9581f18c-1 added-43da-ace9-7758a56ef28a",
        "tenant_id": "060576782980d5762f9ec014dd2f1148",
        "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
        "remote_group_id": null,
        "direction": "egress",
        "protocol": null,
        "description": "",
        "ethertype": "IPv4",
        "remote_ip_prefix": null,
        "remote_address_group_id": null,
        "port_range_max": null,
        "port_range_min": null
      }
    ]
  }
}
```

```
    "port_range_min": null
  },
  {
    "id": "a3ba270e-e58b-432d-a912-aeb7eace9fb8",
    "tenant_id": "060576782980d5762f9ec014dd2f1148",
    "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "direction": "ingress",
    "protocol": null,
    "description": "",
    "ethertype": "IPv4",
    "remote_ip_prefix": null,
    "remote_address_group_id": null,
    "port_range_max": null,
    "port_range_min": null
  }
]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.8.3 Querying Security Groups

Function

This API is used to query security groups using search criteria and to display the security groups in a list.

URI

GET /v1/{project_id}/security-groups

Example:

```
GET https://{Endpoint}/v1/{project_id}/security-groups?limit=10&marker=4779ab1c-7c1a-44b1-a02e-93dfc361b32d&vpc_id=3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85
```

[Table 5-121](#) describes the parameters.

Table 5-121 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none">• If parameters marker and limit are not passed, resource records on the first page will be returned.• If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned.• If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned.• If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.

Name	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2 ³¹ -1). The default value is 2000. limit can be used together with marker . For details, see the parameter description of marker .
vpc_id	No	String	Specifies that the VPC ID is used as the filtering condition.
remote_address_group_id	No	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. You can log in to the management console and view the ID on the IP address group page. The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.

Request Parameters

None

Example Request

GET https://{Endpoint}/v1/{project_id}/security-groups

Response Parameters

Table 5-122 Response parameter

Name	Type	Description
security_groups	Array of security_group objects	Specifies the security group objects. For details, see Table 5-123 .

Table 5-123 Description of **security_group** fields

Name	Type	Description
name	String	Specifies the security group name.
description	String	Provides supplementary information about the security group.
id	String	Specifies the security group ID, which uniquely identifies the security group.
vpc_id	String	Specifies the resource ID of the VPC to which the security group belongs. NOTE Currently, this parameter is not recommended because it is only used as a prompt and does not restrict that the security group must be associated with the VPC.
security_group_rules	Array of security_group_rule objects	Specifies the default security group rules, which ensure that resources in the security group can communicate with one another.

Table 5-124 **security_group_rule** objects

Name	Type	Description
id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
description	String	<ul style="list-style-type: none"> Provides supplementary information about the security group rule. The value can contain no more than 255 characters, including letters and digits.
security_group_id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.

Name	Type	Description
direction	String	<ul style="list-style-type: none"> Specifies the direction of access control. Possible values are as follows: <ul style="list-style-type: none"> egress ingress
ethertype	String	<ul style="list-style-type: none"> Specifies the IP protocol version. The value can be IPv4 or IPv6.
protocol	String	<ul style="list-style-type: none"> Specifies the protocol type. The value can be icmp, tcp, udp, or an IP protocol number (0 to 255, for example, 47 for GRE) If the parameter is left blank, all protocols are supported.
port_range_min	Integer	<ul style="list-style-type: none"> Specifies the start port number. The value ranges from 1 to 65535. The value cannot be greater than the port_range_max value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.
port_range_max	Integer	<ul style="list-style-type: none"> Specifies the end port number. The value ranges from 1 to 65535. If the protocol is not icmp, the value cannot be smaller than the port_range_min value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.

Name	Type	Description
remote_ip_prefix	String	<ul style="list-style-type: none"> Specifies the remote IP address. If the access control direction is set to egress, the parameter specifies the source IP address. If the access control direction is set to ingress, the parameter specifies the destination IP address. The value can be in the CIDR format or IP addresses. The parameter is mutually exclusive with parameter remote_group_id and remote_address_group_id.
remote_group_id	String	<ul style="list-style-type: none"> Specifies the ID of the peer security group. The value is mutually exclusive with parameter remote_ip_prefix and remote_address_group_id.
remote_address_group_id	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.
tenant_id	String	<ul style="list-style-type: none"> Specifies the ID of the project to which the security group rule belongs.

Example Response

```
{
  "security_groups": [
    {
      "id": "16b6e77a-08fa-42c7-aa8b-106c048884e6",
      "name": "qq",
      "description": "qq",
      "vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",

      "security_group_rules": [
        {
          "id": "f11a3824-ac19-4fad-b4f1-c5f4a6dd0a80",
          "tenant_id": "060576782980d5762f9ec014dd2f1148",
          "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "direction": "ingress",
          "protocol": null,
          "description": "",
          "ethertype": "IPv6",
          "remote_ip_prefix": null,

```

```

    "remote_address_group_id": null,
    "port_range_max": null,
    "port_range_min": null
  },
  {
    "id": "3d6480e8-9ea4-46dc-bb1b-8db190cd5677",
    "tenant_id": "060576782980d5762f9ec014dd2f1148",
    "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "remote_group_id": null,
    "direction": "egress",
    "protocol": null,
    "description": "",
    "ethertype": "IPv6",
    "remote_ip_prefix": null,
    "remote_address_group_id": null,
    "port_range_max": null,
    "port_range_min": null
  },
  {
    "id": "9581f18c-1fdd-43da-ace9-7758a56ef28a",
    "tenant_id": "060576782980d5762f9ec014dd2f1148",
    "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "remote_group_id": null,
    "direction": "egress",
    "protocol": null,
    "description": "",
    "ethertype": "IPv4",
    "remote_ip_prefix": null,
    "remote_address_group_id": null,
    "port_range_max": null,
    "port_range_min": null
  },
  {
    "id": "a3ba270e-e58b-432d-a912-aeb7eace9fb8",
    "tenant_id": "060576782980d5762f9ec014dd2f1148",
    "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "direction": "ingress",
    "protocol": null,
    "description": "",
    "ethertype": "IPv4",
    "remote_ip_prefix": null,
    "remote_address_group_id": null,
    "port_range_max": null,
    "port_range_min": null
  }
]
},
{
  "id": "9c0f56be-a9ac-438c-8c57-fce62de19419",
  "name": "default",
  "description": "qq",
  "vpc_id": "13551d6b-755d-4757-b956-536f674975c0",

  "security_group_rules": [
    {
      "direction": "egress",
      "ethertype": "IPv4",
      "id": "95479e0a-e312-4844-b53d-a5e4541b783f",
      "description": "",
      "security_group_id": "9c0f56be-a9ac-438c-8c57-fce62de19419"
    },
    {
      "direction": "ingress",
      "ethertype": "IPv4",
      "id": "0c4a2336-b036-4fa2-bc3c-1a291ed4c431",
      "description": "",
      "remote_group_id": "9c0f56be-a9ac-438c-8c57-fce62de19419",
      "security_group_id": "9c0f56be-a9ac-438c-8c57-fce62de19419"
    }
  ]
}

```

```
}  
  ]  
} ]  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.8.4 Deleting a Security Group

Function

This API is used to delete a security group.

URI

DELETE /v1/{project_id}/security-groups/{security_group_id}

[Table 5-125](#) describes the parameters.

Table 5-125 Parameter description

Name	Mandatory	Description
security_group_id	Yes	Specifies the security group ID, which uniquely identifies the security group.
project_id	No	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameters

None

Example Request

```
DELETE https://{Endpoint}/v1/{project_id}/security-groups/0c4a2336-b036-4fa2-bc3c-1a291ed4c431
```

Response Parameters

None

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.8.5 Creating a Security Group Rule

Function

This API is used to create a security group rule.

URI

POST /v1/{project_id}/security-group-rules

Request Parameters

Table 5-126 Request parameter

Name	Mandatory	Type	Description
security_group_rule	Yes	security_group_rule object	Specifies the security group rule objects. For details, see Table 5-127 .

Table 5-127 Description of the `security_group_rule` field

Name	Mandatory	Type	Description
security_group_id	Yes	String	Specifies the security group ID.
description	No	String	<ul style="list-style-type: none">Provides supplementary information about the security group rule.The value can contain no more than 255 characters, including letters and digits.
direction	Yes	String	<ul style="list-style-type: none">Access control direction specified in a security group rule.The value can be:<ul style="list-style-type: none">egressingress

Name	Mandatory	Type	Description
ethertype	No	String	<ul style="list-style-type: none"> Specifies the IP protocol version. The value can be IPv4 or IPv6. If you do not set this parameter, IPv4 is used by default.
protocol	No	String	<ul style="list-style-type: none"> Specifies the protocol type. The value can be icmp, tcp, udp, or an IP protocol number (0 to 255, for example, 47 for GRE) If the parameter is left blank, all protocols are supported.
port_range_min	No	Integer	<ul style="list-style-type: none"> Specifies the start port number. The value ranges from 1 to 65535. The value cannot be greater than the port_range_max value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.
port_range_max	No	Integer	<ul style="list-style-type: none"> Specifies the end port number. The value ranges from 1 to 65535. If the protocol is not icmp, the value cannot be smaller than the port_range_min value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.

Name	Mandatory	Type	Description
remote_ip_prefix	No	String	<ul style="list-style-type: none"> Specifies the remote IP address. If the access control direction is set to egress, the parameter specifies the source IP address. If the access control direction is set to ingress, the parameter specifies the destination IP address. The value can be in the CIDR format or IP addresses. The parameter is mutually exclusive with parameter remote_group_id and remote_address_group_id.
remote_group_id	No	String	<ul style="list-style-type: none"> Specifies the ID of the peer security group. The value is mutually exclusive with parameter remote_ip_prefix and remote_address_group_id.
remote_address_group_id	No	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. You can log in to the management console and view the ID on the IP address group page. This parameter is mutually exclusive with parameters remote_ip_prefix and remote_group_id.

Example Request

- Create an inbound rule in the security group whose ID is a7734e61-b545-452d-a3cd-0189cbd9747a.

POST https://{Endpoint}/v1/{project_id}/security-group-rules

```
{
  "security_group_rule": {
    "direction": "ingress",
    "port_range_min": "80",
    "ethertype": "IPv4",
    "port_range_max": "80",
```



```

    "protocol": "tcp",
    "remote_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
    "security_group_id": "a7734e61-b545-452d-a3cd-0189cbd9747a"
  }
}
POST https://{Endpoint}/v1/{project_id}/security-group-rules

{
  "security_group_rule": {
    "direction": "ingress",
    "port_range_min": "80",
    "ethertype": "IPv6",
    "port_range_max": "90",
    "protocol": "tcp",
    "security_group_id": "a7734e61-b545-452d-a3cd-0189cbd9747a"
  }
}

```

Response Parameters

Table 5-128 Response parameter

Name	Type	Description
security_group_rule	security_group_rule object	Specifies the security group rule objects. For details, see Table 5-129 .

Table 5-129 security_group_rule objects

Name	Type	Description
id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
description	String	<ul style="list-style-type: none"> Provides supplementary information about the security group rule. The value can contain no more than 255 characters, including letters and digits.
security_group_id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
direction	String	<ul style="list-style-type: none"> Specifies the direction of access control. Possible values are as follows: <ul style="list-style-type: none"> egress ingress

Name	Type	Description
ethertype	String	<ul style="list-style-type: none"> Specifies the IP protocol version. The value can be IPv4 or IPv6.
protocol	String	<ul style="list-style-type: none"> Specifies the protocol type. The value can be icmp, tcp, udp, or an IP protocol number (0 to 255, for example, 47 for GRE) If the parameter is left blank, all protocols are supported.
port_range_min	Integer	<ul style="list-style-type: none"> Specifies the start port number. The value ranges from 1 to 65535. The value cannot be greater than the port_range_max value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.
port_range_max	Integer	<ul style="list-style-type: none"> Specifies the end port number. The value ranges from 1 to 65535. If the protocol is not icmp, the value cannot be smaller than the port_range_min value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.
remote_ip_prefix	String	<ul style="list-style-type: none"> Specifies the remote IP address. If the access control direction is set to egress, the parameter specifies the source IP address. If the access control direction is set to ingress, the parameter specifies the destination IP address. The value can be in the CIDR format or IP addresses. The parameter is mutually exclusive with parameter remote_group_id and remote_address_group_id.

Name	Type	Description
remote_group_id	String	<ul style="list-style-type: none">Specifies the ID of the peer security group.The value is mutually exclusive with parameter remote_ip_prefix and remote_address_group_id.
remote_address_group_id	String	<ul style="list-style-type: none">Specifies the remote IP address group ID.The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.
tenant_id	String	<ul style="list-style-type: none">Specifies the ID of the project to which the security group rule belongs.

Example Response

```
{
  "security_group_rule": {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "2bc0accf-312e-429a-956e-e4407625eb62",
    "description": "",
    "port_range_max": 80,
    "port_range_min": 80,
    "protocol": "tcp",
    "remote_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
    "remote_ip_prefix": null,
    "security_group_id": "a7734e61-b545-452d-a3cd-0189cbd9747a",
    "tenant_id": "e4f50856753b4dc6afee5fa6b9b6c550",
    "remote_address_group_id": null
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.8.6 Querying Security Group Rule Details

Function

This API is used to query details about a security group rule.

URI

GET /v1/{project_id}/security-group-rules/{security_group_rule_id}

[Table 5-130](#) describes the parameters.

Table 5-130 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
security_group_rule_id	Yes	Specifies the security group rule ID, which uniquely identifies the security group rule.

Request Parameters

None

Example Request

GET https://{Endpoint}/v1/{project_id}/security-group-rules/2bc0accf-312e-429a-956e-e4407625eb62

Response Parameters

Table 5-131 Response parameter

Name	Type	Description
security_group_rule	security_group_rule object	Specifies the security group rule objects. For details, see Table 5-132 .

Table 5-132 [security_group_rule](#) objects

Name	Type	Description
id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.

Name	Type	Description
description	String	<ul style="list-style-type: none"> Provides supplementary information about the security group rule. The value can contain no more than 255 characters, including letters and digits.
security_group_id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
direction	String	<ul style="list-style-type: none"> Specifies the direction of access control. Possible values are as follows: <ul style="list-style-type: none"> egress ingress
ethertype	String	<ul style="list-style-type: none"> Specifies the IP protocol version. The value can be IPv4 or IPv6.
protocol	String	<ul style="list-style-type: none"> Specifies the protocol type. The value can be icmp, tcp, udp, or an IP protocol number (0 to 255, for example, 47 for GRE) If the parameter is left blank, all protocols are supported.
port_range_min	Integer	<ul style="list-style-type: none"> Specifies the start port number. The value ranges from 1 to 65535. The value cannot be greater than the port_range_max value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.

Name	Type	Description
port_range_max	Integer	<ul style="list-style-type: none"> Specifies the end port number. The value ranges from 1 to 65535. If the protocol is not icmp, the value cannot be smaller than the port_range_min value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.
remote_ip_prefix	String	<ul style="list-style-type: none"> Specifies the remote IP address. If the access control direction is set to egress, the parameter specifies the source IP address. If the access control direction is set to ingress, the parameter specifies the destination IP address. The value can be in the CIDR format or IP addresses. The parameter is mutually exclusive with parameter remote_group_id and remote_address_group_id.
remote_group_id	String	<ul style="list-style-type: none"> Specifies the ID of the peer security group. The value is mutually exclusive with parameter remote_ip_prefix and remote_address_group_id.
remote_address_group_id	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.
tenant_id	String	<ul style="list-style-type: none"> Specifies the ID of the project to which the security group rule belongs.

Example Response

```
{
  "security_group_rule": {
    "direction": "ingress",
```

```
"ethertype": "IPv4",  
"id": "2bc0accf-312e-429a-956e-e4407625eb62",  
"description": "",  
"port_range_max": 80,  
"port_range_min": 80,  
"protocol": "tcp",  
"remote_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",  
"remote_ip_prefix": null,  
"security_group_id": "a7734e61-b545-452d-a3cd-0189cbd9747a",  
"tenant_id": "e4f50856753b4dc6afee5fa6b9b6c550",  
"remote_address_group_id": null  
}  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.8.7 Querying Security Group Rules

Function

This API is used to query security group rules using search criteria and to display the security group rules in a list.

URI

GET /v1/{project_id}/security-group-rules

Example:

```
GET https://{Endpoint}/v1/{project_id}/security-group-rules?security_group_id=a7734e61-  
b545-452da3cd-0189cbd9747a&limit=10&marker=4779ab1c-7c1a-44b1-a02e-93dfc361b32d
```

[Table 5-133](#) describes the parameters.

Table 5-133 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.

Name	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2 ³¹ -1). The default value is 2000. limit can be used together with marker . For details, see the parameter description of marker .
security_group_id	No	String	Specifies the security group ID.

Request Parameters

None

Example Request

GET https://{Endpoint}/v1/{project_id}/security-group-rules

Response Parameters

Name	Type	Description
security_group_rules	Array of security_group_rule objects	Specifies the security group rule objects. For details, see Table 5-134 .

Table 5-134 security_group_rule objects

Name	Type	Description
id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
description	String	<ul style="list-style-type: none"> Provides supplementary information about the security group rule. The value can contain no more than 255 characters, including letters and digits.

Name	Type	Description
security_group_id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
direction	String	<ul style="list-style-type: none"> Specifies the direction of access control. Possible values are as follows: <ul style="list-style-type: none"> egress ingress
ethertype	String	<ul style="list-style-type: none"> Specifies the IP protocol version. The value can be IPv4 or IPv6.
protocol	String	<ul style="list-style-type: none"> Specifies the protocol type. The value can be icmp, tcp, udp, or an IP protocol number (0 to 255, for example, 47 for GRE) If the parameter is left blank, all protocols are supported.
port_range_min	Integer	<ul style="list-style-type: none"> Specifies the start port number. The value ranges from 1 to 65535. The value cannot be greater than the port_range_max value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.
port_range_max	Integer	<ul style="list-style-type: none"> Specifies the end port number. The value ranges from 1 to 65535. If the protocol is not icmp, the value cannot be smaller than the port_range_min value. An empty value indicates all ports. If the protocol is icmp, the value range is shown in ICMP-Port Range Relationship Table.

Name	Type	Description
remote_ip_prefix	String	<ul style="list-style-type: none"> Specifies the remote IP address. If the access control direction is set to egress, the parameter specifies the source IP address. If the access control direction is set to ingress, the parameter specifies the destination IP address. The value can be in the CIDR format or IP addresses. The parameter is mutually exclusive with parameter remote_group_id and remote_address_group_id.
remote_group_id	String	<ul style="list-style-type: none"> Specifies the ID of the peer security group. The value is mutually exclusive with parameter remote_ip_prefix and remote_address_group_id.
remote_address_group_id	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.
tenant_id	String	<ul style="list-style-type: none"> Specifies the ID of the project to which the security group rule belongs.

Example Response

```
{
  "security_group_rules": [
    {
      "direction": "egress",
      "ethertype": "IPv6",
      "id": "3c0e45ff-adaf-4124-b083-bf390e5482ff",
      "description": "",
      "port_range_max": null,
      "port_range_min": null,
      "protocol": null,
      "remote_group_id": null,
      "remote_ip_prefix": null,
      "security_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
      "tenant_id": "e4f50856753b4dc6afee5fa6b9b6c550",
      "remote_address_group_id": null
    },
    {
      "direction": "egress",
      "ethertype": "IPv4",
```

```
    "id": "93aa42e5-80db-4581-9391-3a608bd0e448",
    "description": "",
    "port_range_max": null,
    "port_range_min": null,
    "protocol": null,
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
    "tenant_id": "e4f50856753b4dc6afee5fa6b9b6c550",
    "remote_address_group_id": null
  },
  {
    "direction": "ingress",
    "ethertype": "IPv6",
    "id": "c0b09f00-1d49-4e64-a0a7-8a186d928138",
    "description": "",
    "port_range_max": null,
    "port_range_min": null,
    "protocol": null,
    "remote_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
    "remote_ip_prefix": null,
    "security_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
    "tenant_id": "e4f50856753b4dc6afee5fa6b9b6c550",
    "remote_address_group_id": null
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "f7d45c89-008e-4bab-88ad-d6811724c51c",
    "description": "",
    "port_range_max": null,
    "port_range_min": null,
    "protocol": null,
    "remote_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
    "remote_ip_prefix": null,
    "security_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
    "tenant_id": "e4f50856753b4dc6afee5fa6b9b6c550",
    "remote_address_group_id": null
  }
]
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.8.8 Deleting a Security Group Rule

Function

This API is used to delete a security group rule.

URI

DELETE /v1/{project_id}/security-group-rules/{security_group_rule_id}

[Table 5-135](#) describes the parameters.

Table 5-135 Parameter description

Name	Mandatory	Description
security_group_rule_id	Yes	Specifies the security group rule ID, which uniquely identifies the security group rule.
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameters

None

Example Request

```
DELETE https://{Endpoint}/v1/{project_id}/security-group-rules/2bc0accf-312e-429a-956e-e4407625eb62
```

Response Parameters

None

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.9 Port

5.9.1 Creating a Port

Function

This API is used to create a port to provide functions such as virtual IP addresses and NICs.

URI

POST /v1/{project_id}/ports

[Table 5-136](#) describes the parameters.

Table 5-136 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameters

Table 5-137 Request parameter

Name	Mandatory	Type	Description
port	Yes	port object	Specifies the port objects. For details, see Table 5-138 .

Table 5-138 Description of the **port** field

Name	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none"> Specifies the port name. The value can contain up to 255 characters. This parameter is left blank by default.
network_id	Yes	String	<ul style="list-style-type: none"> Specifies the ID of the network to which the port belongs. The network ID must exist.
admin_state_up	No	Boolean	<ul style="list-style-type: none"> Specifies the administrative state of the port. The default value is true.
device_owner	No	String	<ul style="list-style-type: none"> Specifies the device to which the port belongs. Currently, only "" and neutron:VIP_PORT are supported. neutron:VIP_PORT indicates the port of a virtual IP address.

Name	Mandatory	Type	Description
fixed_ips	No	Array of fixed_ip objects	<ul style="list-style-type: none"> Specifies the port IP address. For example, the value is <code>"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]</code>. For details, see Table 5-139. A port supports only one fixed IP address that cannot be changed.
tenant_id	No	String	Specifies the project ID.
security_groups	No	Array of strings	Specifies the UUID of the security group, for example, <code>"security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]</code> . This is an extended attribute.

Name	Mandatory	Type	Description
allowed_address_pairs	No	Array of allowed_address_pairs objects	<ul style="list-style-type: none">• Specifies the IP address and MAC address pair. An address pair consists of an IP address and a MAC address. This attribute is extended. For details, see parameter allowed_address_pair in Table 5-140.• The IP address cannot be 0.0.0.0/0.• Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24).• If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled.• If the virtual IP address is bound to a cloud server:<ul style="list-style-type: none">– The value of mac_address can be left blank or set to the MAC address of the NIC bound to the cloud server.– Set allowed_address_pairs of the cloud server to 1.1.1.1/0.
extra_dhcp_opts	No	Array of extra_dhcp_opt objects	Specifies the extended option (extended attribute) of DHCP. For details, see Table 5-141 .

Table 5-139 fixed_ip objects

Name	Mandatory	Type	Description
subnet_id	No	String	<ul style="list-style-type: none">Specifies the subnet ID. If you use the management console, the value of this parameter is the IPv4 Subnet ID or IPv6 Subnet ID value.You cannot change the parameter value.
ip_address	No	String	<ul style="list-style-type: none">Specifies the port IP address.You cannot change the parameter value.

Table 5-140 allowed_address_pairs objects

Name	Mandatory	Type	Description
ip_address	Yes	String	<ul style="list-style-type: none">Specifies the IP address.You cannot set it to 0.0.0.0/0.Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24).If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled.Set allowed_address_pairs of the cloud server to 1.1.1.1/0.If the value of parameter allowed_address_pairs is specified, parameter ip_address is mandatory.
mac_address	No	String	Specifies the MAC address.

Table 5-141 extra_dhcp_opt object

Name	Mandatory	Type	Description
opt_name	No	String	Specifies the name of the DHCP option. The value of this parameter can only be 51, indicating the DHCP lease time.
opt_value	No	String	Specifies the value of the DHCP option. If the value of opt_name is 51 , the value format of opt_value is <i>Xh</i> , indicating that the DHCP lease time is <i>X</i> hours. The value of <i>X</i> is -1 or from 1 to 30000 . If the value is -1 , the DHCP lease time is infinite.

Example Request

- Create a port. Set its network ID to 28a1c93c-9a5e-4a9f-813b-e495bdef7d34, subnet ID to 06bc2359-d75e-4f96-82f4-313e39c7148c, IP address to 192.168.0.38, and associated security group to f2c5b3fc-b971-4a86-87b9-032586260e3e.

POST https://{Endpoint}/v1/{project_id}/ports

```
{
  "port": {
    "fixed_ips": [
      {
        "ip_address": "192.168.0.38",
        "subnet_id": "06bc2359-d75e-4f96-82f4-313e39c7148c"
      }
    ],
    "network_id": "28a1c93c-9a5e-4a9f-813b-e495bdef7d34",
    "security_groups": [
      "f2c5b3fc-b971-4a86-87b9-032586260e3e"
    ]
  }
}
```

Response Parameters

Table 5-142 Response parameter

Name	Type	Description
port	port object	Specifies the port objects. For details, see Table 5-143 .

Table 5-143 Description of the **port** field

Name	Type	Description
id	String	Specifies the port ID that uniquely identifies the port.
name	String	<ul style="list-style-type: none"> Specifies the port name. The value can contain up to 255 characters. This parameter is left blank by default.
network_id	String	<ul style="list-style-type: none"> Specifies the ID of the network to which the port belongs. The network ID must exist.
admin_state_up	Boolean	<ul style="list-style-type: none"> Specifies the administrative state of the port. The default value is true.
mac_address	String	<ul style="list-style-type: none"> Specifies the MAC address of the port. The MAC address is assigned by the system not specified by users.
fixed_ips	Array of fixed_ip objects	<ul style="list-style-type: none"> Specifies the port IP address. For example, the value is "fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]. For details, see Table 5-144. In IPv4 scenarios, a port supports only one fixed IP address that cannot be changed. In IPv6 scenarios, a port supports a maximum of two fixed IP addresses that cannot be changed.
device_id	String	<ul style="list-style-type: none"> Specifies the ID of the device to which the port belongs. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.

Name	Type	Description
device_owner	String	<ul style="list-style-type: none"> Specifies the owner of the device to which the port belongs, which can be a DHCP server, router, load balancer, or Nova. The value can be network:dhcp, network:router_interface_distributed, compute:xxx, neutron:VIP_PORT, neutron:LOADBALANCERV2, neutron:LOADBALANCERV3, network:endpoint_interface, network:nat_gateway, or network:ucmp. (In value compute:xxx, xxx specifies the AZ name, for example, compute:aa-bb-cc indicates that the private IP address is used by an ECS in the aa-bb-cc AZ). This parameter value cannot be updated. You can only set device_owner to neutron:VIP_PORT for a virtual IP address port during port creation. If this parameter is not left blank, the port can only be deleted when this parameter value is neutron:VIP_PORT.
tenant_id	String	Specifies the project ID.
status	String	<ul style="list-style-type: none"> Specifies the port status. The status of a HANA SR-IOV VM port is always DOWN. The value can be ACTIVE, BUILD, or DOWN.
security_groups	Array of strings	Specifies the security group UUID (extended attribute).

Name	Type	Description
allowed_address_pairs	Array of allowed_address_pairs objects	<ul style="list-style-type: none"> • Specifies the IP address and MAC address pair. An address pair consists of an IP address and a MAC address. For details, see Table 5-145. • The IP address cannot be 0.0.0.0/0. • Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). • If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. • Set allowed_address_pairs of the cloud server to 1.1.1.1/0.
extra_dhcp_opts	Array of extra_dhcp_opt objects	Specifies the extended option (extended attribute) of DHCP. For details, see Table 5-146 .
binding:vif_details	binding:vif_details object	For details, see Table 5-147 .

Name	Type	Description
binding:profile	Object	<p>Specifies the user-defined settings. This is an extended attribute.</p> <p>Note:</p> <ul style="list-style-type: none"> • The internal_elb field is in boolean type and is available to common tenants. Set the value of this parameter to true only when you assign a virtual IP address to an internal network load balancer. Common tenants do not have the permission to change the value of this field, which is maintained by the system. Example: <code>{"internal_elb": true}</code> • The disable_security_groups field is in boolean type and is available to common tenants. The default value is false. In high-performance communication scenarios, you can set the parameter value to true, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to true. Example: <code>{"disable_security_groups": true }</code> Currently, the value can only be set to true. When the value is set to true, the FWaaS function does not take effect.
binding:vnic_type	String	<ul style="list-style-type: none"> • Specifies the type of the bound vNIC. • The value can be normal or direct. • normal indicates software switching. direct indicates SR-IOV PCIe passthrough, which is not supported.

Name	Type	Description
instance_id	String	<ul style="list-style-type: none"> Specifies the ID of the instance to which the port belongs, for example, RDS instance ID. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
instance_type	String	<ul style="list-style-type: none"> Specifies the type of the instance to which the port belongs, for example, RDS. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
port_security_enabled	Boolean	<ul style="list-style-type: none"> Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping do not take effect.
ipv6_bandwidth_id	String	<ul style="list-style-type: none"> Specifies the ID of the shared bandwidth associated with the IPv6 NIC. This parameter is displayed only when the IPv6 NIC is associated with a shared bandwidth.

Table 5-144 fixed_ip object

Name	Type	Description
subnet_id	String	<ul style="list-style-type: none"> Specifies the subnet ID. If you use the management console, the value of this parameter is the IPv4 Subnet ID or IPv6 Subnet ID value. You cannot change the parameter value.
ip_address	String	Specifies the port IP address.

Table 5-145 allowed_address_pairs objects

Name	Type	Description
ip_address	String	<ul style="list-style-type: none">Specifies the IP address.You cannot set it to 0.0.0.0/0.Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24).If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled.Set allowed_address_pairs of the cloud server to 1.1.1.1/0.
mac_address	String	Specifies the MAC address.

Table 5-146 extra_dhcp_opt object

Name	Type	Description
opt_name	String	Specifies the name of the DHCP option. The value of this parameter can only be 51, indicating the DHCP lease time.
opt_value	String	Specifies the value of the DHCP option. If the value of opt_name is 51 , the value format of opt_value is Xh , indicating that the DHCP lease time is X hours. The value of X is -1 or from 1 to 30000 . If the value is -1 , the DHCP lease time is infinite.

Table 5-147 binding:vif_details object

Name	Type	Description
primary_interface	Boolean	If the value is true, this is the primary NIC.
port_filter	Boolean	Specifies the port used for filtering in security groups to protect against MAC or IP spoofing.
ovs_hybrid_plug	Boolean	Specifies that OVS hybrid plug should be used by Nova APIs.

Example Response

```
{
  "port": {
    "id": "d00f9c13-412f-4855-8af3-de5d8c24cd60",
    "name": "test",
    "status": "DOWN",
    "admin_state_up": "true",
    "fixed_ips": [
      {
        "subnet_id": "70f2e74b-e660-410a-b754-0ca46744348a",
        "ip_address": "10.128.1.10"
      }
    ],
    "mac_address": "fa:16:3e:d7:f2:6c",
    "network_id": "5b808927-13c9-4e60-a4f4-ed6ffe225167",
    "tenant_id": "43f2d1cca56a40729dcb17212482f34d",
    "device_id": "",
    "device_owner": "",
    "security_groups": [
      "02b4e8ee-74fa-4a31-802e-5490df11245e"
    ],
    "extra_dhcp_opts": [],
    "allowed_address_pairs": [],
    "binding:vnic_type": "normal"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.9.2 Querying a Port

Function

This API is used to query a single port.

URI

GET /v1/{project_id}/ports/{port_id}

[Table 5-148](#) describes the parameters.

Table 5-148 Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Name	Mandatory	Description
port_id	Yes	Specifies the port ID that uniquely identifies the port.

Request Parameters

None

Example Request

GET https://{Endpoint}/v1/{project_id}/ports/d00f9c13-412f-4855-8af3-de5d8c24cd60

Response Parameters

Table 5-149 Response parameter

Name	Type	Description
port	port object	Specifies the port objects. For details, see Table 5-150 .

Table 5-150 Description of the **port** field

Parameter	Type	Description
id	String	Specifies the port ID that uniquely identifies the port.
name	String	<ul style="list-style-type: none"> Specifies the port name. The value can contain up to 255 characters. This parameter is left blank by default.
network_id	String	<ul style="list-style-type: none"> Specifies the ID of the network that the port belongs to. The network ID must exist.
admin_state_up	Boolean	<ul style="list-style-type: none"> Specifies the administrative state of the port. The default value is true.
mac_address	String	<ul style="list-style-type: none"> Specifies the port MAC address. The MAC address is assigned by the system not specified by users.

Parameter	Type	Description
fixed_ips	Array of fixed_ip objects	<ul style="list-style-type: none"> Specifies the port IP address. For example, the value is "fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]. For details, see Table 5-151. In IPv4 scenarios, a port supports only one fixed IP address that cannot be changed. In IPv6 scenarios, a port supports a maximum of two fixed IP addresses that cannot be changed.
device_id	String	<ul style="list-style-type: none"> Specifies the ID of the device that the port belongs to. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
device_owner	String	<ul style="list-style-type: none"> Specifies the owner of the device to which the port belongs, which can be a DHCP server, router, load balancer, or Nova. The value can be network:dhcp, network:router_interface_distributed, compute:xxx, neutron:VIP_PORT, neutron:LOADBALANCERV2, neutron:LOADBALANCERV3, network:endpoint_interface, network:nat_gateway, or network:ucmp. (In value compute:xxx, xxx specifies the AZ name, for example, compute:aa-bb-cc indicates that the private IP address is used by an ECS in the aa-bb-cc AZ). This parameter value cannot be updated. You can only set device_owner to neutron:VIP_PORT for a virtual IP address port during port creation. If this parameter is not left blank, the port can only be deleted when this parameter value is neutron:VIP_PORT.
tenant_id	String	Specifies the project ID.

Parameter	Type	Description
status	String	<ul style="list-style-type: none"> Specifies the port status. The status of a HANA SR-IOV VM port is always DOWN. The value can be ACTIVE, BUILD, or DOWN.
security_groups	Array of strings	Specifies the security group UUID (extended attribute).
allowed_address_pairs	Array of allowed_addresses_pairs objects	<ul style="list-style-type: none"> Specifies the IP address and MAC address pair. An address pair consists of an IP address and a MAC address. For details, see Table 5-152. The IP address cannot be 0.0.0.0/0. Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. Set allowed_address_pairs of the cloud server to 1.1.1.1/0.
extra_dhcp_opts	Array of extra_dhcp_options objects	Specifies the extended option (extended attribute) of DHCP. For details, see Table 5-153 .
binding:vif_details	binding:vif_details object	For details, see Table 5-154 .

Parameter	Type	Description
binding:profile	Object	<p>Specifies the user-defined settings. This is an extended attribute.</p> <p>Note:</p> <ul style="list-style-type: none"> The internal_elb field is in boolean type and is available to common tenants. Set the value of this parameter to true only when you assign a virtual IP address to an internal network load balancer. Common tenants do not have the permission to change the value of this field, which is maintained by the system. Example: <code>{"internal_elb": true}</code> The disable_security_groups field is in boolean type and is available to common tenants. The default value is false. In high-performance communication scenarios, you can set the parameter value to true, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to true. Example: <code>{"disable_security_groups": true }</code> Currently, the value can only be set to true. When the value is set to true, the FWaaS function does not take effect.
binding:vnic_type	String	<ul style="list-style-type: none"> Specifies the type of the bound vNIC. The value can be normal or direct. normal indicates software switching. direct indicates SR-IOV PCIe passthrough, which is not supported.
instance_id	String	<ul style="list-style-type: none"> Specifies the ID of the instance to which the port belongs, for example, RDS instance ID. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.

Parameter	Type	Description
instance_type	String	<ul style="list-style-type: none"> Specifies the type of the instance to which the port belongs, for example, RDS. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
port_security_enabled	Boolean	<ul style="list-style-type: none"> Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping do not take effect.
ipv6_bandwidth_id	String	<ul style="list-style-type: none"> Specifies the ID of the shared bandwidth associated with the IPv6 NIC. This parameter is displayed only when the IPv6 NIC is associated with a shared bandwidth.

Table 5-151 fixed_ip object

Name	Type	Description
subnet_id	String	<ul style="list-style-type: none"> Specifies the subnet ID. If you use the management console, the value of this parameter is the IPv4 Subnet ID or IPv6 Subnet ID value. You cannot change the parameter value.
ip_address	String	Specifies the port IP address.

Table 5-152 allowed_address_pairs objects

Name	Type	Description
ip_address	String	<ul style="list-style-type: none"> Specifies the IP address. You cannot set it to 0.0.0.0/0. Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. Set allowed_address_pairs of the cloud server to 1.1.1.1/0.
mac_address	String	Specifies the MAC address.

Table 5-153 extra_dhcp_opt object

Name	Type	Description
opt_name	String	Specifies the name of the DHCP option. The value of this parameter can only be 51, indicating the DHCP lease time.
opt_value	String	<p>Specifies the value of the DHCP option.</p> <p>If the value of opt_name is 51, the value format of opt_value is Xh, indicating that the DHCP lease time is X hours.</p> <p>The value of X is -1 or from 1 to 30000. If the value is -1, the DHCP lease time is infinite.</p>

Table 5-154 binding:vif_details object

Name	Type	Description
primary_interface	Boolean	If the value is true, this is the primary NIC.
port_filter	Boolean	Specifies the port used for filtering in security groups to protect against MAC or IP spoofing.
ovs_hybrid_plug	Boolean	Specifies that OVS hybrid plug should be used by Nova APIs.

Example Response

```
{
  "port": {
    "id": "d00f9c13-412f-4855-8af3-de5d8c24cd60",
    "name": "test",
    "status": "DOWN",
    "admin_state_up": "true",
    "fixed_ips": [
      {
        "subnet_id": "70f2e74b-e660-410a-b754-0ca46744348a",
        "ip_address": "10.128.1.10"
      }
    ],
    "mac_address": "fa:16:3e:d7:f2:6c",
    "network_id": "5b808927-13c9-4e60-a4f4-ed6ffe225167",
    "tenant_id": "43f2d1cca56a40729dcb17212482f34d",
    "device_id": "",
    "device_owner": "",
    "security_groups": [
      "02b4e8ee-74fa-4a31-802e-5490df11245e"
    ],
    "extra_dhcp_opts": [],
    "allowed_address_pairs": [],
    "binding:vnic_type": "normal",
    "instance_type": "RDS",
    "instance_id": "03a4e9ee-64eb-4a31-802e-5490df22146c"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.9.3 Querying Ports

Function

This API is used to query ports.

URI

GET /v1/{project_id}/ports

Example:

```
GET https://{Endpoint}/v1/{project_id}/ports?
id={port_id}&name={port_name}&admin_state_up={is_admin_status_up}&network_id={network_id}&mac_ad
dress={port_mac}&device_id={port_device_id}&device_owner={device_owner}&status={port_status}&fixed_ips
=ip_address={ip_address}&fixed_ips=subnet_id={subnet_id}
```

[Table 5-155](#) describes the parameters.

Table 5-155 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
id	No	String	<ul style="list-style-type: none"> Specifies the port ID that is used as the filter.
name	No	String	<ul style="list-style-type: none"> Specifies the port name that is used as the filter. The value can contain up to 255 characters.
admin_state_up	No	Boolean	<ul style="list-style-type: none"> Specifies the administrative state that is used as the filter. The value can be true or false.
network_id	No	String	<ul style="list-style-type: none"> Specifies the network ID that is used as the filter.
mac_address	No	String	<ul style="list-style-type: none"> Specifies the MAC address that is used as the filter.
device_id	No	String	<ul style="list-style-type: none"> Specifies the device ID that is used as the filter.
device_owner	No	String	<ul style="list-style-type: none"> Specifies the device owner that is used as the filter. For details about value range, see parameter device_owner in Table 5-157.
status	No	String	<ul style="list-style-type: none"> Specifies the status that is used as the filter. The value can be ACTIVE, BUILD, or DOWN.
security_groups	No	Array of strings	<ul style="list-style-type: none"> Specifies the UUID of the security group that is used as the filter.

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax ($2^{31}-1$). The default value is 2000.</p> <p>limit can be used together with marker. For details, see the parameter description of marker.</p>

Name	Mandatory	Type	Description
fixed_ips	No	Array of strings	<ul style="list-style-type: none"> Specifies the port IP address or the ID of the subnet that the port belongs to that is used as the filter. The value can be fixed_ips=ip_address={ip_address} or fixed_ips=subnet_id={subnet_id}. Set <i>{ip_address}</i> to an IP address, for example, 192.168.21.22. Set <i>{subnet_id}</i> to an IPv4 or IPv6 subnet ID, for example, 011fc878-5521-4654-a1ad-f5b0b5820302.
enable_efi	No	Boolean	<ul style="list-style-type: none"> Whether efi is enabled is used as the filter. The value can be true or false.

Request Parameters

None

Example Request

GET https://{Endpoint}/v1/{project_id}/ports

Response Parameters

Table 5-156 Response parameter

Name	Type	Description
ports	Array of port objects	Specifies the port objects. For details, see Table 5-157 .

Table 5-157 Description of the **port** field

Parameter	Type	Description
id	String	Specifies the port ID that uniquely identifies the port.
name	String	<ul style="list-style-type: none"> Specifies the port name. The value can contain up to 255 characters. This parameter is left blank by default.
network_id	String	<ul style="list-style-type: none"> Specifies the ID of the network that the port belongs to. The network ID must exist.
admin_state_up	Boolean	<ul style="list-style-type: none"> Specifies the administrative state of the port. The default value is true.
mac_address	String	<ul style="list-style-type: none"> Specifies the port MAC address. The MAC address is assigned by the system not specified by users.
fixed_ips	Array of fixed_ip objects	<ul style="list-style-type: none"> Specifies the port IP address. For example, the value is "fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]. For details, see Table 5-158. In IPv4 scenarios, a port supports only one fixed IP address that cannot be changed. In IPv6 scenarios, a port supports a maximum of two fixed IP addresses that cannot be changed.
device_id	String	<ul style="list-style-type: none"> Specifies the ID of the device that the port belongs to. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.

Parameter	Type	Description
device_owner	String	<ul style="list-style-type: none"> Specifies the owner of the device to which the port belongs, which can be a DHCP server, router, load balancer, or Nova. The value can be network:dhcp, network:router_interface_distributed, compute:xxx, neutron:VIP_PORT, neutron:LOADBALANCERV2, neutron:LOADBALANCERV3, network:endpoint_interface, network:nat_gateway, or network:ucmp. (In value compute:xxx, xxx specifies the AZ name, for example, compute:aa-bb-cc indicates that the private IP address is used by an ECS in the aa-bb-cc AZ). This parameter value cannot be updated. You can only set device_owner to neutron:VIP_PORT for a virtual IP address port during port creation. If this parameter is not left blank, the port can only be deleted when this parameter value is neutron:VIP_PORT.
tenant_id	String	Specifies the project ID.
status	String	<ul style="list-style-type: none"> Specifies the port status. The status of a HANA SR-IOV VM port is always DOWN. The value can be ACTIVE, BUILD, or DOWN.
security_groups	Array of strings	Specifies the security group UUID (extended attribute).

Parameter	Type	Description
allowed_address_pairs	Array of allowed_addresses_pairs objects	<ul style="list-style-type: none"> Specifies the IP address and MAC address pair. An address pair consists of an IP address and a MAC address. For details, see Table 5-159. The IP address cannot be 0.0.0.0/0. Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. Set allowed_address_pairs of the cloud server to 1.1.1.1/0.
extra_dhcp_opts	Array of extra_dhcp_option objects	Specifies the extended option (extended attribute) of DHCP. For details, see Table 5-160 .
binding:vif_details	binding:vif_details object	For details, see Table 5-161 .

Parameter	Type	Description
binding:profile	Object	<p>Specifies the user-defined settings. This is an extended attribute.</p> <p>Note:</p> <ul style="list-style-type: none"> The internal_elb field is in boolean type and is available to common tenants. Set the value of this parameter to true only when you assign a virtual IP address to an internal network load balancer. Common tenants do not have the permission to change the value of this field, which is maintained by the system. Example: <code>{"internal_elb": true}</code> The disable_security_groups field is in boolean type and is available to common tenants. The default value is false. In high-performance communication scenarios, you can set the parameter value to true, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to true. Example: <code>{"disable_security_groups": true }</code> Currently, the value can only be set to true. When the value is set to true, the FWaaS function does not take effect.
binding:vnic_type	String	<ul style="list-style-type: none"> Specifies the type of the bound vNIC. The value can be normal or direct. normal indicates software switching. direct indicates SR-IOV PCIe passthrough, which is not supported.
instance_id	String	<ul style="list-style-type: none"> Specifies the ID of the instance to which the port belongs, for example, RDS instance ID. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.

Parameter	Type	Description
instance_type	String	<ul style="list-style-type: none"> Specifies the type of the instance to which the port belongs, for example, RDS. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
port_security_enabled	Boolean	<ul style="list-style-type: none"> Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping do not take effect.
ipv6_bandwidth_id	String	<ul style="list-style-type: none"> Specifies the ID of the shared bandwidth associated with the IPv6 NIC. This parameter is displayed only when the IPv6 NIC is associated with a shared bandwidth.

Table 5-158 fixed_ip object

Name	Type	Description
subnet_id	String	<ul style="list-style-type: none"> Specifies the subnet ID. If you use the management console, the value of this parameter is the IPv4 Subnet ID or IPv6 Subnet ID value. You cannot change the parameter value.
ip_address	String	Specifies the port IP address.

Table 5-159 allowed_address_pairs objects

Name	Type	Description
ip_address	String	<ul style="list-style-type: none"> Specifies the IP address. You cannot set it to 0.0.0.0/0. Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. Set allowed_address_pairs of the cloud server to 1.1.1.1/0.
mac_address	String	Specifies the MAC address.

Table 5-160 extra_dhcp_opt object

Name	Type	Description
opt_name	String	Specifies the name of the DHCP option. The value of this parameter can only be 51, indicating the DHCP lease time.
opt_value	String	<p>Specifies the value of the DHCP option.</p> <p>If the value of opt_name is 51, the value format of opt_value is Xh, indicating that the DHCP lease time is X hours.</p> <p>The value of X is -1 or from 1 to 30000. If the value is -1, the DHCP lease time is infinite.</p>

Table 5-161 binding:vif_details object

Name	Type	Description
primary_interface	Boolean	If the value is true, this is the primary NIC.
port_filter	Boolean	Specifies the port used for filtering in security groups to protect against MAC or IP spoofing.
ovs_hybrid_plug	Boolean	Specifies that OVS hybrid plug should be used by Nova APIs.

Example Response

```
{
  "ports": [
    {
      "id": "d00f9c13-412f-4855-8af3-de5d8c24cd60",
      "name": "test",
      "status": "DOWN",
      "admin_state_up": "true",
      "fixed_ips": [
        {
          "subnet_id": "70f2e74b-e660-410a-b754-0ca46744348a",
          "ip_address": "10.128.1.10"
        }
      ],
      "mac_address": "fa:16:3e:d7:f2:6c",
      "network_id": "5b808927-13c9-4e60-a4f4-ed6ffe225167",
      "tenant_id": "43f2d1cca56a40729dcb17212482f34d",
      "device_id": "",
      "device_owner": "",
      "security_groups": [
        "02b4e8ee-74fa-4a31-802e-5490df11245e"
      ],
      "extra_dhcp_opts": [],
      "allowed_address_pairs": [],
      "binding:vnic_type": "normal",
      "instance_type": "RDS",
      "instance_id": "03a4e9ee-64eb-4a31-802e-5490df22146c"
    },
    {
      "id": "28ba8f45-7636-45e4-8c0a-675d7663717c",
      "name": "test1",
      "status": "DOWN",
      "admin_state_up": "true",
      "fixed_ips": [
        {
          "subnet_id": "061d3ca2-bd1f-4bd1-a01d-7a5155328c0e",
          "ip_address": "192.168.10.10"
        }
      ],
      "mac_address": "fa:16:3e:3d:91:cd",
      "network_id": "be2fe79a-3ee2-4d87-bd71-5afa78a5670d",
      "tenant_id": "43f2d1cca56a40729dcb17212482f34d",
      "device_id": "",
      "device_owner": "",
      "security_groups": [
        "0bfc8687-ca18-4c37-ac84-d2198baba585"
      ],
      "extra_dhcp_opts": [],
      "allowed_address_pairs": [],
      "binding:vnic_type": "normal"
    }
  ]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.9.4 Updating a Port

Function

This API is used to update a port.

URI

PUT /v1/{project_id}/ports/{port_id}

[Table 5-162](#) describes the parameters.

Table 5-162 Parameter description

Name	Mandatory	Description
port_id	Yes	Specifies the port ID that uniquely identifies the port.
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameters

Name	Mandatory	Type	Description
port	Yes	port object	Specifies the port objects. For details, see Table 5-163 .

Table 5-163 Description of the [port](#) field

Name	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none">Specifies the port name.The value can contain up to 255 characters. This parameter is left blank by default.
security_groups	No	Array of strings	Specifies the UUID of the security group. This is an extended attribute.

Name	Mandatory	Type	Description
allowed_address_pairs	No	Array of allowed_address_pairs objects	<ul style="list-style-type: none">• Specifies the IP address and MAC address pair. An address pair consists of an IP address and a MAC address. For details, see parameter allow_address_pair in Table 5-164.• Constraints:<ul style="list-style-type: none">– The IP address cannot be 0.0.0.0/0.– Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24).– If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled.– To assign a virtual IP address to an ECS, the IP address configured in allowed_address_pairs must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication.– Set allowed_address_pairs of the cloud server to 1.1.1.1/0.
extra_dhcp_opts	No	Array of extra_dhcp_opt objects	Specifies the extended option (extended attribute) of DHCP. For details, see Table 5-165 .

Table 5-164 allowed_address_pairs objects

Name	Mandatory	Type	Description
ip_address	Yes	String	<ul style="list-style-type: none"> Specifies the IP address. You cannot set it to 0.0.0.0/0. Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. Set allowed_address_pairs of the cloud server to 1.1.1.1/0. If the value of parameter allowed_address_pairs is specified, parameter ip_address is mandatory.
mac_address	No	String	Specifies the MAC address.

Table 5-165 extra_dhcp_opt object

Name	Mandatory	Type	Description
opt_name	No	String	Specifies the name of the DHCP option. The value of this parameter can only be 51, indicating the DHCP lease time.
opt_value	No	String	<p>Specifies the value of the DHCP option.</p> <p>If the value of opt_name is 51, the value format of opt_value is <i>Xh</i>, indicating that the DHCP lease time is <i>X</i> hours.</p> <p>The value of <i>X</i> is -1 or from 1 to 30000. If the value is -1, the DHCP lease time is infinite.</p>

Example Request

- Change the name of the port whose ID is 7204e0da-40de-4207-a536-6f59b84f6f0e to **abc**.

```
PUT https://{Endpoint}/v1/{project_id}/ports/7204e0da-40de-4207-a536-6f59b84f6f0e
{
  "port": {
    "name": "adc"
  }
}
```

Response Parameters

Table 5-166 Response parameter

Name	Type	Description
port	port object	Specifies the port objects. For details, see Table 5-167 .

Table 5-167 Description of the **port** field

Parameter	Type	Description
id	String	Specifies the port ID that uniquely identifies the port.
name	String	<ul style="list-style-type: none"> Specifies the port name. The value can contain up to 255 characters. This parameter is left blank by default.
network_id	String	<ul style="list-style-type: none"> Specifies the ID of the network that the port belongs to. The network ID must exist.
admin_state_up	Boolean	<ul style="list-style-type: none"> Specifies the administrative state of the port. The default value is true.
mac_address	String	<ul style="list-style-type: none"> Specifies the port MAC address. The MAC address is assigned by the system not specified by users.
fixed_ips	Array of fixed_ip objects	<ul style="list-style-type: none"> Specifies the port IP address. For example, the value is "fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]. For details, see Table 5-168. In IPv4 scenarios, a port supports only one fixed IP address that cannot be changed. In IPv6 scenarios, a port supports a maximum of two fixed IP addresses that cannot be changed.

Parameter	Type	Description
device_id	String	<ul style="list-style-type: none"> Specifies the ID of the device that the port belongs to. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
device_owner	String	<ul style="list-style-type: none"> Specifies the owner of the device to which the port belongs, which can be a DHCP server, router, load balancer, or Nova. The value can be network:dhcp, network:router_interface_distributed, compute:xxx, neutron:VIP_PORT, neutron:LOADBALANCERV2, neutron:LOADBALANCERV3, network:endpoint_interface, network:nat_gateway, or network:ucmp. (In value compute:xxx, xxx specifies the AZ name, for example, compute:aa-bb-cc indicates that the private IP address is used by an ECS in the aa-bb-cc AZ). This parameter value cannot be updated. You can only set device_owner to neutron:VIP_PORT for a virtual IP address port during port creation. If this parameter is not left blank, the port can only be deleted when this parameter value is neutron:VIP_PORT.
tenant_id	String	Specifies the project ID.
status	String	<ul style="list-style-type: none"> Specifies the port status. The status of a HANA SR-IOV VM port is always DOWN. The value can be ACTIVE, BUILD, or DOWN.
security_groups	Array of strings	Specifies the security group UUID (extended attribute).

Parameter	Type	Description
allowed_address_pairs	Array of allowed_address_pairs objects	<ul style="list-style-type: none"> Specifies the IP address and MAC address pair. An address pair consists of an IP address and a MAC address. For details, see Table 5-169. The IP address cannot be 0.0.0.0/0. Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. Set allowed_address_pairs of the cloud server to 1.1.1.1/0.
extra_dhcp_opts	Array of extra_dhcp_option objects	Specifies the extended option (extended attribute) of DHCP. For details, see Table 5-170 .
binding:vif_details	binding:vif_details object	For details, see Table 5-171 .

Parameter	Type	Description
binding:profile	Object	<p>Specifies the user-defined settings. This is an extended attribute.</p> <p>Note:</p> <ul style="list-style-type: none"> The internal_elb field is in boolean type and is available to common tenants. Set the value of this parameter to true only when you assign a virtual IP address to an internal network load balancer. Common tenants do not have the permission to change the value of this field, which is maintained by the system. Example: <code>{"internal_elb": true}</code> The disable_security_groups field is in boolean type and is available to common tenants. The default value is false. In high-performance communication scenarios, you can set the parameter value to true, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to true. Example: <code>{"disable_security_groups": true }</code> Currently, the value can only be set to true. When the value is set to true, the FWaaS function does not take effect.
binding:vnic_type	String	<ul style="list-style-type: none"> Specifies the type of the bound vNIC. The value can be normal or direct. normal indicates software switching. direct indicates SR-IOV PCIe passthrough, which is not supported.
instance_id	String	<ul style="list-style-type: none"> Specifies the ID of the instance to which the port belongs, for example, RDS instance ID. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.

Parameter	Type	Description
instance_type	String	<ul style="list-style-type: none"> Specifies the type of the instance to which the port belongs, for example, RDS. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
port_security_enabled	Boolean	<ul style="list-style-type: none"> Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping do not take effect.
ipv6_bandwidth_id	String	<ul style="list-style-type: none"> Specifies the ID of the shared bandwidth associated with the IPv6 NIC. This parameter is displayed only when the IPv6 NIC is associated with a shared bandwidth.

Table 5-168 fixed_ip object

Name	Type	Description
subnet_id	String	<ul style="list-style-type: none"> Specifies the subnet ID. If you use the management console, the value of this parameter is the IPv4 Subnet ID or IPv6 Subnet ID value. You cannot change the parameter value.
ip_address	String	Specifies the port IP address.

Table 5-169 allowed_address_pairs objects

Name	Type	Description
ip_address	String	<ul style="list-style-type: none"> Specifies the IP address. You cannot set it to 0.0.0.0/0. Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. Set allowed_address_pairs of the cloud server to 1.1.1.1/0.
mac_address	String	Specifies the MAC address.

Table 5-170 extra_dhcp_opt object

Name	Type	Description
opt_name	String	Specifies the name of the DHCP option. The value of this parameter can only be 51, indicating the DHCP lease time.
opt_value	String	<p>Specifies the value of the DHCP option.</p> <p>If the value of opt_name is 51, the value format of opt_value is Xh, indicating that the DHCP lease time is X hours.</p> <p>The value of X is -1 or from 1 to 30000. If the value is -1, the DHCP lease time is infinite.</p>

Table 5-171 binding:vif_details object

Name	Type	Description
primary_interface	Boolean	If the value is true, this is the primary NIC.
port_filter	Boolean	Specifies the port used for filtering in security groups to protect against MAC or IP spoofing.
ovs_hybrid_plug	Boolean	Specifies that OVS hybrid plug should be used by Nova APIs.

Example Response

```
{
  "port": {
    "id": "7204e0da-40de-4207-a536-6f59b84f6f0e",
    "name": "adc",
    "status": "DOWN",
    "admin_state_up": "true",
    "fixed_ips": [
      {
        "subnet_id": "689156ca-038f-4478-b265-fd26aa8bbe31",
        "ip_address": "192.168.0.9"
      }
    ],
    "mac_address": "fa:16:3e:d7:f2:6c",
    "network_id": "b4152e98-e3af-4e49-bb7f-7766e2b5ec63",
    "tenant_id": "caa6cf4337ea47fb823b15709ebe8591",
    "device_id": "",
    "device_owner": "",
    "security_groups": [
      "59b39002-e79b-4bac-8e27-aa884ab1beb6"
    ],
    "extra_dhcp_opts": [],
    "allowed_address_pairs": [],
    "binding:vnic_type": "normal"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.9.5 Deleting a Port

Function

This API is used to delete a port.

Restrictions

- A port with **device_owner** set to a value other than **neutron:VIP_PORT** cannot be deleted.
- A port with **device_id** specified cannot be deleted.

URI

DELETE /v1/{project_id}/ports/{port_id}

[Table 5-172](#) describes the parameters.

Table 5-172 Parameter description

Name	Mandatory	Description
port_id	Yes	Specifies the port ID that uniquely identifies the port.
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameters

None

Example Request

```
DELETE https://{Endpoint}/v1/{project_id}/ports/d00f9c13-412f-4855-8af3-de5d8c24cd60
```

Response Parameters

None

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.10 VPC Peering Connection

5.10.1 Querying VPC Peering Connections

Function

This API is used to query all VPC peering connections accessible to the tenant submitting the request. The connections are filtered based on the filtering condition. For details about pagination query, see section [Pagination](#).

URI

GET /v2.0/vpc/peerings

Example:

```
GET https://{Endpoint}/v2.0/vpc/peerings?
id={id}&name={name}&status={status}&tenant_id={tenant_id}&vpc_id={vpc_id}&limit={limit}&marker={marker}
```

Table 5-173 describes the parameters.

Table 5-173 Parameter description

Name	Mandatory	Type	Description
id	No	String	Specifies that the VPC peering connection ID is used as the filtering condition.
name	No	String	<ul style="list-style-type: none"> Specifies that the peering connection name is used as the filter. The value can contain no more than 64 characters.
status	No	String	Specifies that the VPC peering connection status is used as the filtering condition.
tenant_id	No	String	Specifies that the tenant ID is used as the filtering condition.
vpc_id	No	String	Specifies that the VPC ID is used as the filtering condition.

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax ($2^{31}-1$). The default value is 2000.</p> <p>limit can be used together with marker. For details, see the parameter description of marker.</p> <p>The default value is 2000.</p>

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/vpc/peerings
```

Response Parameters

Table 5-174 Response parameter

Parameter	Type	Description
peerings	Array of peering objects	Specifies the VPC peering connection object list. For details, see Table 5-175 .
peerings_links	Array of peerings_link objects	Specifies the VPC peering connection object list. For details, see Table 5-177 . Only when limit is used for filtering and the number of resources exceeds the value of limit or 2000 (default value of limit), value next will be returned for rel and a link for href .

Table 5-175 peering objects

Attribute	Type	Description
id	String	Specifies the VPC peering connection ID.
name	String	Specifies the VPC peering connection name.
status	String	Specifies the VPC peering connection status. Possible values are as follows: <ul style="list-style-type: none">● PENDING_ACCEPTANCE● REJECTED● EXPIRED● DELETED● ACTIVE
request_vpc_info	vpc_info object	Specifies information about the local VPC. For details, see Table 5-176 .

Attribute	Type	Description
accept_vpc_info	vpc_info object	Specifies information about the peer VPC. For details, see Table 5-176 .
description	String	Provides supplementary information about the VPC peering connection.
created_at	String	Specifies the time (UTC) when the VPC peering connection is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the VPC peering connection is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 5-176 vpc_info objects

Attribute	Type	Description
vpc_id	String	Specifies the ID of a VPC involved in a VPC peering connection.
tenant_id	String	Specifies the ID of the project to which a VPC involved in the VPC peering connection belongs.

Table 5-177 peerings_link object

Name	Type	Description
href	String	Specifies the API link.
rel	String	Specifies the relationship between the API link and the API version.

Example Response

```
{
  "peerings": [
    {
      "request_vpc_info": {
        "vpc_id": "9daeac7c-a98f-430f-8e38-67f9c044e299",
        "tenant_id": "f65e9ebc-ed5d-418b-a931-9a723718ba4e"
      },
      "accept_vpc_info": {
        "vpc_id": "f583c072-0bb8-4e19-afb2-afb7c1693be5",
        "tenant_id": "f65e9ebc-ed5d-418b-a931-9a723718ba4e"
      }
    }
  ]
}
```

```
    },  
    "name": "test",  
    "id": "b147a74b-39bb-4c7a-aed5-19cac4c2df13",  
    "status": "ACTIVE"  
  }  
]
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.10.2 Querying a VPC Peering Connection

Function

This API is used to query details about a VPC peering connection.

URI

GET /v2.0/vpc/peerings/{peering_id}

[Table 5-178](#) describes the parameters.

Table 5-178 Parameter description

Name	Mandatory	Type	Description
peering_id	Yes	String	Specifies the VPC peering connection ID, which uniquely identifies the VPC peering connection. The peering_id value is used as the filter.

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/vpc/peerings/22b76469-08e3-4937-8c1d-7aad34892be1
```

Response Parameters

Table 5-179 Response parameter

Parameter	Type	Description
peering	peering object	Specifies the VPC peering connection object list. For details, see Table 5-180 .

Table 5-180 peering objects

Attribute	Type	Description
id	String	Specifies the VPC peering connection ID.
name	String	Specifies the VPC peering connection name.
status	String	Specifies the VPC peering connection status. Possible values are as follows: <ul style="list-style-type: none"> ● PENDING_ACCEPTANCE ● REJECTED ● EXPIRED ● DELETED ● ACTIVE
request_vpc_info	vpc_info object	Specifies information about the local VPC. For details, see Table 5-181 .
accept_vpc_info	vpc_info object	Specifies information about the peer VPC. For details, see Table 5-181 .
description	String	Provides supplementary information about the VPC peering connection.
created_at	String	Specifies the time (UTC) when the VPC peering connection is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the VPC peering connection is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 5-181 vpc_info objects

Attribute	Type	Description
vpc_id	String	Specifies the ID of a VPC involved in a VPC peering connection.
tenant_id	String	Specifies the ID of the project to which a VPC involved in the VPC peering connection belongs.

Example Response

```
{
  "peering": {
    "name": "test",
    "id": "22b76469-08e3-4937-8c1d-7aad34892be1",
    "request_vpc_info": {
      "vpc_id": "9daeac7c-a98f-430f-8e38-67f9c044e299",
      "tenant_id": "f65e9ebc-ed5d-418b-a931-9a723718ba4e"
    },
    "accept_vpc_info": {
      "vpc_id": "f583c072-0bb8-4e19-afb2-afb7c1693be5",
      "tenant_id": "f65e9ebc-ed5d-418b-a931-9a723718ba4e"
    },
    "status": "ACTIVE"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.10.3 Creating a VPC Peering Connection

Function

This API is used to create a VPC peering connection.

If you create a VPC peering connection with another VPC of your own, the connection is created without the need for you to accept the connection.

If you create a VPC peering connection with a VPC of another tenant, the peer tenant must accept the connection so that the connection can be created. If the peer tenant refuses the connection, it cannot be created.

URI

POST /v2.0/vpc/peerings

Request Parameters

Table 5-182 Request parameter

Parameter	Mandatory	Type	Description
peering	Yes	peering object	Specifies the VPC peering connection. For details, see Table 5-183 .

Table 5-183 Description of the [peering](#) field

Attribute	Mandatory	Type	Description
name	Yes	String	Specifies the name of the VPC peering connection. The value can contain 1 to 64 characters.
description	No	String	Provides supplementary information about the VPC peering connection. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
request_vpc_info	Yes	vpc_info object	Specifies information about the local VPC. For details, see Table 5-184 .
accept_vpc_info	Yes	vpc_info object	Specifies information about the peer VPC. For details, see Table 5-184 .

Table 5-184 Description of the [vpc_info](#) field

Attribute	Mandatory	Type	Description
vpc_id	Yes	String	Specifies the ID of a VPC involved in a VPC peering connection.

Attribute	Mandatory	Type	Description
tenant_id	No	String	Specifies the ID of the project to which a VPC involved in the VPC peering connection belongs. This parameter is mandatory if the VPC peering connection is created between VPCs in different accounts.

Example Request

- Create a VPC peering connection. The VPC ID of the requester is 9daeac7c-a98f-430f-8e38-67f9c044e299, the VPC ID of the receiver is f583c072-0bb8-4e19-afb2-afb7c1693be5, and the VPC peering connection is named **test**.

```
POST https://{Endpoint}/v2.0/vpc/peerings
{
  "peering": {
    "name": "test",
    "request_vpc_info": {
      "vpc_id": "9daeac7c-a98f-430f-8e38-67f9c044e299"
    },
    "accept_vpc_info": {
      "vpc_id": "f583c072-0bb8-4e19-afb2-afb7c1693be5"
    }
  }
}
```

Response Parameters

Table 5-185 Response parameter

Parameter	Type	Description
peering	peering object	Specifies the VPC peering connection. For details, see Table 5-186 .

Table 5-186 peering objects

Attribute	Type	Description
id	String	Specifies the VPC peering connection ID.
name	String	Specifies the VPC peering connection name.

Attribute	Type	Description
status	String	Specifies the VPC peering connection status. Possible values are as follows: <ul style="list-style-type: none"> • PENDING_ACCEPTANCE • REJECTED • EXPIRED • DELETED • ACTIVE
request_vpc_info	vpc_info object	Specifies information about the local VPC. For details, see Table 5-187 .
accept_vpc_info	vpc_info object	Specifies information about the peer VPC. For details, see Table 5-187 .
description	String	Provides supplementary information about the VPC peering connection.
created_at	String	Specifies the time (UTC) when the VPC peering connection is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the VPC peering connection is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 5-187 vpc_info objects

Attribute	Type	Description
vpc_id	String	Specifies the ID of a VPC involved in a VPC peering connection.
tenant_id	String	Specifies the ID of the project to which a VPC involved in the VPC peering connection belongs.

Example Response

```
{
  "peering": {
    "name": "test",
    "id": "22b76469-08e3-4937-8c1d-7aad34892be1",
    "request_vpc_info": {
```

```
"vpc_id": "9daeac7c-a98f-430f-8e38-67f9c044e299",  
"tenant_id": "f65e9ebc-ed5d-418b-a931-9a723718ba4e"  
},  
"accept_vpc_info": {  
  "vpc_id": "f583c072-0bb8-4e19-afb2-afb7c1693be5",  
  "tenant_id": "f65e9ebc-ed5d-418b-a931-9a723718ba4e"  
},  
"status": "ACTIVE"  
}  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.10.4 Accepting a VPC Peering Connection

Function

After tenant A requests to create a VPC peering connection with a VPC of tenant B, the VPC peering connection takes effect only after tenant B accepts the request. This API is used by a tenant to accept a VPC peering connection request initiated by another tenant.

URI

PUT /v2.0/vpc/peerings/{peering_id}/accept

[Table 5-188](#) describes the parameters.

Table 5-188 Parameter description

Name	Mandatory	Type	Description
peering_id	Yes	String	Specifies the VPC peering connection ID, which uniquely identifies the VPC peering connection.

Request Parameters

None

Example Request

- Accept the VPC peering connection request from 22b76469-08e3-4937-8c1d-7aad34892be1.
PUT https://{Endpoint}/v2.0/vpc/peerings/22b76469-08e3-4937-8c1d-7aad34892be1/accept

Response Parameters

Table 5-189 Response parameter

Attribute	Type	Description
id	String	Specifies the VPC peering connection ID.
name	String	Specifies the VPC peering connection name.
status	String	Specifies the VPC peering connection status. Possible values are as follows: <ul style="list-style-type: none">• PENDING_ACCEPTANCE• REJECTED• EXPIRED• DELETED• ACTIVE
request_vpc_info	vpc_info object	Specifies information about the local VPC. For details, see Table 5-190 .
accept_vpc_info	vpc_info object	Specifies information about the peer VPC. For details, see Table 5-190 .
description	String	Provides supplementary information about the VPC peering connection.
created_at	String	Specifies the time (UTC) when the VPC peering connection is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the VPC peering connection is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 5-190 vpc_info objects

Attribute	Type	Description
vpc_id	String	Specifies the ID of a VPC involved in a VPC peering connection.

Attribute	Type	Description
tenant_id	String	Specifies the ID of the project that a VPC involved in the VPC peering connection belongs to.

Example Response

```
{
  "name": "test",
  "id": "22b76469-08e3-4937-8c1d-7aad34892be1",
  "request_vpc_info": {
    "vpc_id": "9daeac7c-a98f-430f-8e38-67f9c044e299",
    "tenant_id": "f65e9ebc-ed5d-418b-a931-9a723718ba4e"
  },
  "accept_vpc_info": {
    "vpc_id": "f583c072-0bb8-4e19-afb2-afb7c1693be5",
    "tenant_id": "059a737356594b41b447b557bf0aae56"
  },
  "status": "ACTIVE"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.10.5 Refusing a VPC Peering Connection

Function

After tenant A requests to create a VPC peering connection with a VPC of tenant B, the VPC peering connection takes effect only after tenant B accepts the request. However, tenant can refuse the VPC peering connection request. This API is used by a tenant to refuse a VPC peering connection request initiated by another tenant.

URI

PUT /v2.0/vpc/peerings/{peering_id}/reject

[Table 5-191](#) describes the parameters.

Table 5-191 Parameter description

Name	Mandatory	Type	Description
peering_id	Yes	String	Specifies the VPC peering connection ID, which uniquely identifies the VPC peering connection.

Request Parameters

None

Example Request

- Reject the VPC peering connection request from 22b76469-08e3-4937-8c1d-7aad34892be1.
PUT [https://\[Endpoint\]/v2.0/vpc/peerings/22b76469-08e3-4937-8c1d-7aad34892be1/reject](https://[Endpoint]/v2.0/vpc/peerings/22b76469-08e3-4937-8c1d-7aad34892be1/reject)

Response Parameters

Table 5-192 Response parameter

Attribute	Type	Description
id	String	Specifies the VPC peering connection ID.
name	String	Specifies the VPC peering connection name.
status	String	Specifies the VPC peering connection status. Possible values are as follows: <ul style="list-style-type: none">● PENDING_ACCEPTANCE● REJECTED● EXPIRED● DELETED● ACTIVE
request_vpc_info	vpc_info object	Specifies information about the local VPC. For details, see Table 5-193 .
accept_vpc_info	vpc_info object	Specifies information about the peer VPC. For details, see Table 5-193 .

Attribute	Type	Description
description	String	Provides supplementary information about the VPC peering connection.
created_at	String	Specifies the time (UTC) when the VPC peering connection is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the VPC peering connection is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 5-193 vpc_info objects

Attribute	Type	Description
vpc_id	String	Specifies the ID of a VPC involved in a VPC peering connection.
tenant_id	String	Specifies the ID of the project that a VPC involved in the VPC peering connection belongs to.

Example Response

```
{
  "name": "test",
  "id": "22b76469-08e3-4937-8c1d-7aad34892be1",
  "request_vpc_info": {
    "vpc_id": "9daeac7c-a98f-430f-8e38-67f9c044e299",
    "tenant_id": "f65e9ebc-ed5d-418b-a931-9a723718ba4e"
  },
  "accept_vpc_info": {
    "vpc_id": "f583c072-0bb8-4e19-afb2-afb7c1693be5",
    "tenant_id": "f65e9ebc-ed5d-418b-a931-9a723718ba4e"
  },
  "status": "REJECTED"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.10.6 Updating a VPC Peering Connection

Function

Updates a VPC peering connection.

URI

PUT /v2.0/vpc/peerings/{peering_id}

[Table 5-194](#) describes the parameters.

Table 5-194 Parameter description

Name	Mandatory	Type	Description
peering_id	Yes	String	Specifies the VPC peering connection ID, which uniquely identifies the VPC peering connection.

Request Parameters

Table 5-195 Request parameter

Parameter	Mandatory	Type	Description
peering	Yes	peering object	Updates a VPC peering connection. For details, see Table 5-196 . When updating a VPC peering connection, you must specify at least one attribute. Currently, only the VPC peering connection name and description can be updated.

Table 5-196 Description of the **peering** field

Parameter	Mandatory	Type	Description
name	No	String	Specifies the name of the VPC peering connection. The value can contain 1 to 64 characters.
description	No	String	Provides supplementary information about the VPC peering connection. The value can contain no more than 255 characters, including letters and digits.

Example Request

- Change the name of the VPC peering connection whose ID is 7a9a954a-eb41-4954-a300-11ab17a361a2 to **test2**.

```
PUT https://{Endpoint}/v2.0/vpc/peerings/7a9a954a-eb41-4954-a300-11ab17a361a2
```

```
{
  "peering": {
    "name": "test2"
  }
}
```

Response Parameters

Table 5-197 Response parameter

Parameter	Type	Description
peering	peering object	Specifies the VPC peering connection. For details, see Table 5-198 .

Table 5-198 peering objects

Attribute	Type	Description
id	String	Specifies the VPC peering connection ID.
name	String	Specifies the VPC peering connection name.
status	String	Specifies the VPC peering connection status. Possible values are as follows: <ul style="list-style-type: none">● PENDING_ACCEPTANCE● REJECTED● EXPIRED● DELETED● ACTIVE
request_vpc_info	vpc_info object	Specifies information about the local VPC. For details, see Table 5-199 .
accept_vpc_info	vpc_info object	Specifies information about the peer VPC. For details, see Table 5-199 .

Attribute	Type	Description
description	String	Provides supplementary information about the VPC peering connection.
created_at	String	Specifies the time (UTC) when the VPC peering connection is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the VPC peering connection is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 5-199 vpc_info objects

Attribute	Type	Description
vpc_id	String	Specifies the ID of a VPC involved in a VPC peering connection.
tenant_id	String	Specifies the ID of the project that a VPC involved in the VPC peering connection belongs to.

Example Response

```
{
  "peering": {
    "name": "test2",
    "id": "22b76469-08e3-4937-8c1d-7aad34892be1",
    "request_vpc_info": {
      "vpc_id": "9daeac7c-a98f-430f-8e38-67f9c044e299",
      "tenant_id": "f65e9ebc-ed5d-418b-a931-9a723718ba4e"
    },
    "accept_vpc_info": {
      "vpc_id": "f583c072-0bb8-4e19-afb2-afb7c1693be5",
      "tenant_id": "059a737356594b41b447b557bf0aae56"
    },
    "status": "ACTIVE"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.10.7 Deleting a VPC Peering Connection

Function

This API is used to delete a VPC peering connection.

A VPC peering connection can be deleted either by the local or peer tenant.

URI

DELETE /v2.0/vpc/peerings/{peering_id}

[Table 5-200](#) describes the parameters.

Table 5-200 Parameter description

Name	Mandatory	Type	Description
peering_id	Yes	String	Specifies the VPC peering connection ID, which uniquely identifies the VPC peering connection.

Request Parameters

None

Example Request

```
DELETE https://{Endpoint}/v2.0/vpc/peerings/2b098395-046a-4071-b009-312bcee665cb
```

Response Parameters

None

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.11 VPC Route

5.11.1 Querying VPC Routes

Function

This API is used to query all routes of the tenant submitting the request. The routes are filtered based on the filtering condition. For details about the response format of pagination query, see section [Pagination](#).

URI

GET /v2.0/vpc/routes

Example:

```
Example:  
GET https://{Endpoint}/v2.0/vpc/routes?  
id={id}&vpc_id={vpc_id}&tenant_id={tenant_id}&destination={destination}&type={type}&limit={limit}&marker={marker}
```

[Table 5-201](#) describes the parameters.

Table 5-201 Parameter description

Name	Mandatory	Type	Description
id	No	String	Specifies that the route ID is used as the filtering condition.
tenant_id	No	String	Specifies that the tenant ID is used as the filtering condition.
vpc_id	No	String	Specifies that the VPC ID is used as the filtering condition.
destination	No	String	Specifies that the route destination address (CIDR) is used as the filtering condition.
type	No	String	Specifies that the type is used as the filtering condition. Currently, the value can only be peering .

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax ($2^{31}-1$). The default value is 2000.</p> <p>limit can be used together with marker. For details, see the parameter description of marker.</p> <p>The default value is 2000.</p>

Request Parameters

None

Example Request

GET https://{Endpoint}/v2.0/vpc/routes?vpc_id=ab78be2d-782f-42a5-aa72-35879f6890ff

Response Parameters

Table 5-202 Response parameter

Parameter	Type	Description
routes	Array of route objects	Specifies the route object list. For details, see Table 5-203 .
routes_links	Array of routes_link objects	Specifies the route object list. For details, see Table 5-204 . The value of rel will be next and that of href will be a link only when limit is used for filtering and the number of resources exceeds the value of limit or 2000 (default value of limit).

Table 5-203 route objects

Attribute	Type	Description
id	String	Specifies the route ID.
destination	String	Specifies the destination address in the CIDR notation format, for example, 192.168.200.0/24.
nexthop	String	Specifies the next hop. If the route type is peering , enter the VPC peering connection ID.
type	String	Specifies the route type. Currently, the value can only be peering .
vpc_id	String	Specifies the VPC of the route. Set this parameter to the existing VPC ID.
tenant_id	String	Specifies the project ID.

Table 5-204 routes_link object

Name	Type	Description
href	String	Specifies the API link.
rel	String	Specifies the relationship between the API link and the API version.

Example Response

```
{
  "routes": [
    {
      "type": "peering",
      "nexthop": "60c809cb-6731-45d0-ace8-3bf5626421a9",
      "destination": "192.168.200.0/24",
      "vpc_id": "ab78be2d-782f-42a5-aa72-35879f6890ff",
      "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
      "id": "3d42a0d4-a980-4613-ae76-a2cddecff054"
    }
  ]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.11.2 Querying a VPC Route

Function

This API is used to query details about a route.

URI

GET /v2.0/vpc/routes/{route_id}

[Table 5-205](#) describes the parameters.

Table 5-205 Parameter description

Name	Mandatory	Type	Description
route_id	Yes	String	Specifies the route ID, which uniquely identifies the route.

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/vpc/routes/60c809cb-6731-45d0-ace8-3bf5626421a9
```

Response Parameters

Table 5-206 Response parameter

Parameter	Type	Description
route	route object	Specifies the route. For details, see Table 5-207 .

Table 5-207 route objects

Attribute	Type	Description
id	String	Specifies the route ID.
destination	String	Specifies the destination address in the CIDR notation format, for example, 192.168.200.0/24.
nexthop	String	Specifies the next hop. If the route type is peering , enter the VPC peering connection ID.
type	String	Specifies the route type. Currently, the value can only be peering .
vpc_id	String	Specifies the VPC of the route. Set this parameter to the existing VPC ID.
tenant_id	String	Specifies the project ID.

Example Response

```
{
  "route": {
    "type": "peering",
    "nexthop": "60c809cb-6731-45d0-ace8-3bf5626421a9",
    "destination": "192.168.200.0/24",
    "vpc_id": "ab78be2d-782f-42a5-aa72-35879f6890ff",
    "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
    "id": "3d42a0d4-a980-4613-ae76-a2cddecff054"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.11.3 Creating a VPC Route

Function

This API is used to create a route.

URI

POST /v2.0/vpc/routes

Request Parameters

Table 5-208 Request parameter

Parameter	Type	Mandatory	Description
route	route object	Yes	Specifies the route. For details, see Table 5-209 .

Table 5-209 route objects

Attribute	Type	Mandatory	Description
destination	String	Yes	Specifies the destination address in the CIDR notation format, for example, 192.168.200.0/24.
nexthop	String	Yes	Specifies the next hop. If the route type is peering , enter the VPC peering connection ID.
type	String	Yes	Specifies the route type. Currently, only the peering type is supported, that is, the next hop is a VPC peering connection.
vpc_id	String	Yes	Specifies the ID of the VPC ID requesting for creating a route.

Example Request

- Create a route in the route table of the VPC whose ID is ab78be2d-782f-42a5-aa72-35879f6890ff for the VPC peering connection. The next hop is the peering connection whose ID is 60c809cb-6731-45d0-ace8-3bf5626421a9, and the destination is 192.168.200.0/24.

POST https://{Endpoint}/v2.0/vpc/routes

```
{
  "route": {
    "type": "peering",
    "nexthop": "60c809cb-6731-45d0-ace8-3bf5626421a9",
    "destination": "192.168.200.0/24",
    "vpc_id": "ab78be2d-782f-42a5-aa72-35879f6890ff"
  }
}
```

Response Parameters

Table 5-210 Response parameter

Parameter	Type	Description
route	route object	Specifies the route. For details, see Table 5-211 .

Table 5-211 route objects

Attribute	Type	Description
id	String	Specifies the route ID.
destination	String	Specifies the destination address in the CIDR notation format, for example, 192.168.200.0/24.
nexthop	String	Specifies the next hop. If the route type is peering , enter the VPC peering connection ID.
type	String	Specifies the route type. Currently, the value can only be peering .
vpc_id	String	Specifies the VPC of the route. Set this parameter to the existing VPC ID.
tenant_id	String	Specifies the project ID.

Example Response

```
{
  "route": {
    "type": "peering",
    "nexthop": "60c809cb-6731-45d0-ace8-3bf5626421a9",
    "destination": "192.168.200.0/24",
    "vpc_id": "ab78be2d-782f-42a5-aa72-35879f6890ff",
  }
}
```

```
}
  "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
  "id": "3d42a0d4-a980-4613-ae76-a2cddecff054"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.11.4 Deleting a VPC Route

Function

This API is used to delete a route.

URI

DELETE /v2.0/vpc/routes/{route_id}

[Table 5-212](#) describes the parameters.

Table 5-212 Parameter description

Name	Mandatory	Type	Description
route_id	Yes	String	Specifies the route ID, which uniquely identifies the route.

Request Parameters

None

Example Request

```
DELETE https://{Endpoint}/v2.0/vpc/routes/60c809cb-6731-45d0-ace8-3bf5626421a9
```

Response Parameters

None

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.12 Route Table

5.12.1 Querying Route Tables

Function

This API is used to query route tables.

URI

GET /v1/{project_id}/routetables

Example:

```
GET https://{Endpoint}/v1/{project_id}/routetables?limit=10&marker=4779ab1c-7c1a-44b1-a02e-93dfc361b32d&vpc_id=3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85&subnet_id=9873b33f-ac1c-4630-ad1c-7dba1ed79r78
```

[Table 5-213](#) describes the parameters.

Table 5-213 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2 ³¹ -1). The default value is 2000. limit can be used together with marker . For details, see the parameter description of marker .

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
id	No	String	Specifies the route table ID that is used as the filter.
vpc_id	No	String	Specifies the VPC UUID that is used as the filter.
subnet_id	No	String	<p>Specifies the subnet UUID that is used as the filter.</p> <p>If you use the management console, the value of this parameter is the Network ID value.</p>

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v1/{project_id}/routetables?limit=10&marker=4779ab1c-7c1a-44b1-a02e-93dfc361b32d&vpc_id=3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85&subnet_id=9873b33f-ac1c-4630-ad1c-7dba1ed79r78
```

Response Parameters

Table 5-214 Response parameter

Name	Type	Description
routetables	Array of routetable objects	Specifies the route table list. For details, see Table 5-215 .

Table 5-215 Description of the **routetable** field

Name	Type	Description
id	String	<ul style="list-style-type: none">Specifies the route table ID that uniquely identifies a route table.The value must be in standard UUID format.
name	String	<ul style="list-style-type: none">Specifies the route table name.The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
default	Boolean	<ul style="list-style-type: none">Specifies whether the route table is the default one.The value can be true (default route table) or false (custom route table).
subnets	Array of subnet objects	<ul style="list-style-type: none">Specifies the subnets associated with the route table. For details, see Table 5-216.Only subnets in the VPC to which the route table belongs can be associated with the route table.
tenant_id	String	<ul style="list-style-type: none">Specifies the project ID.
vpc_id	String	<ul style="list-style-type: none">Specifies the ID of the VPC associated with the route table.
description	String	<ul style="list-style-type: none">Provides supplementary information about the route table.The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Name	Type	Description
created_at	String	<ul style="list-style-type: none"> Specifies the time (UTC) when the route table is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	<ul style="list-style-type: none"> Specifies the time (UTC) when the route table is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 5-216 Description of the **subnet** field

Name	Type	Description
id	String	Specifies the ID of the subnet associated with the route table.

Example Response

```
{
  "routetables": [
    {
      "id": "3d42a0d4-a980-4613-ae76-a2cddecff054",
      "name": "routetable-1234",
      "vpc_id": "ab78be2d-782f-42a5-aa72-35879f6890ff",
      "subnets": [
        {
          "id": "8d4ce32f-d68a-4c4c-9f18-c68d8a5c7f2f"
        }
      ],
      "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
      "description": "abc",
      "created_at": "2022-12-15T02:56:40",
      "updated_at": "2022-12-15T02:56:40"
    },
    {
      "id": "3d42a0d4-a980-4613-ae76-a2cddecfff89",
      "name": "routetable-5678",
      "vpc_id": "ab78be2d-782f-42a5-aa72-35879f667809",
      "subnets": [
        {
          "id": "8d4ce32f-d68a-4c4c-9f18-c68d8a5c7f2f"
        }
      ],
      "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
      "description": "abc",
      "created_at": "2022-12-15T02:59:03",
      "updated_at": "2022-12-15T02:59:03"
    }
  ]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.12.2 Querying a Route Table

Function

This API is used to query details about a route table.

URI

GET /v1/{project_id}/routetables/{routetable_id}

[Table 5-217](#) describes the parameters.

Table 5-217 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
routetable_id	Yes	String	Specifies the route table ID that uniquely identifies a route table.

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v1/26ae5181a416420998eb2093aaed84d9/routetables/66df8c1f-d4f6-4a63-9abb-09701fe27b39
```

Response Parameters

Table 5-218 Response parameter

Name	Type	Description
routetable	routetable object	Specifies the route table. For details, see Table 5-219 .

Table 5-219 Description of the **routeTable** field

Name	Type	Description
id	String	<ul style="list-style-type: none"> Specifies the route table ID that uniquely identifies the route table. The value must be in standard UUID format.
name	String	<ul style="list-style-type: none"> Specifies the route table name. The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
default	Boolean	<ul style="list-style-type: none"> Specifies whether the route table is the default one. The value can be true (default route table) or false (custom route table).
routes	Array of route objects	<ul style="list-style-type: none"> Specifies the route list. For details, see Table 5-220. Each route table can have a maximum of 200 routes.
subnets	Array of subnet objects	<ul style="list-style-type: none"> Specifies the subnets associated with the route table. For details, see Table 5-221. Only subnets in the VPC to which the route table belongs can be associated with the route table.
tenant_id	String	<ul style="list-style-type: none"> Specifies the project ID.
vpc_id	String	<ul style="list-style-type: none"> Specifies the ID of the VPC associated with the route table.
description	String	<ul style="list-style-type: none"> Provides supplementary information about the route table. The value can contain up to 255 characters and cannot contain angle brackets (< or >).
created_at	String	<ul style="list-style-type: none"> Specifies the time (UTC) when the route table is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	<ul style="list-style-type: none"> Specifies the time (UTC) when the route table is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 5-220 Description of the **route** field

Name	Type	Description
type	String	<ul style="list-style-type: none"> • Specifies the route type. • Values: <ul style="list-style-type: none"> – ecs (ECS) – eni (NIC) – vip (Virtual IP address) – nat (NAT gateway) – peering (VPC peering connection) – egw: VPC endpoint node
destination	String	<ul style="list-style-type: none"> • Specifies the destination CIDR block of a route. • The value must be in the valid CIDR format.
nexthop	String	<ul style="list-style-type: none"> • Specifies the ID of the next hop in the route. • Values: <ul style="list-style-type: none"> – When type is ecs, the value is an ECS ID. – When type is eni, the value is an extension NIC ID. – When type is vip, the value is a virtual IP address. – When type is nat, the value a NAT gateway ID. – When type is peering, the value is a VPC peering connection ID. – When type is cc, the value is a Cloud Connect connection ID. – When type is set to egw, the value is a VPC endpoint ID.
description	String	<ul style="list-style-type: none"> • Provides supplementary information about the route. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Table 5-221 Description of the **subnet** field

Name	Type	Description
id	String	Specifies the ID of the subnet associated with the route table.

Example Response

```
{
  "routetable": {
    "id": "05250d7e-0396-4fc9-9c9c-e4d5594784e4",
    "name": "rtb-vpc-l2cg-1",
    "routes": [
      {
        "type": "local",
        "destination": "192.168.4.0/24",
        "nexthop": "-"
      },
      {
        "type": "local",
        "destination": "192.168.1.0/24",
        "nexthop": "-"
      },
      {
        "type": "local",
        "destination": "198.19.128.0/20",
        "nexthop": "-"
      },
      {
        "type": "local",
        "destination": "127.0.0.0/8",
        "nexthop": "-"
      },
      {
        "type": "local",
        "destination": "100.64.0.0/10",
        "nexthop": "-"
      }
    ],
    "subnets": [
      {
        "id": "0e0faa8f-ea73-47aa-b919-8c133e98d5ac"
      },
      {
        "id": "e007e005-10aa-4614-b439-c9a14e55130e"
      }
    ],
    "vpc_id": "7978e43c-f892-49d8-9fab-9bb90a51709b",
    "default": true,
    "tenant_id": "05e369f07a800f802f41c002632ba5f9",
    "created_at": "2022-12-15T02:56:40",
    "updated_at": "2022-12-15T02:56:40"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.12.3 Creating a Route Table

Function

This API is used to create a route table.

Notes and Constraints

- The destination CIDR block of a custom route table cannot be included in the CIDR blocks of the local route.
- Each destination CIDR block of a route in the same route table must be unique.
- No more than five routes can be created at a time.

URI

POST /v1/{project_id}/routetables

[Table 5-222](#) describes the parameters.

Table 5-222 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameters

Table 5-223 Request parameter

Name	Mandatory	Type	Description
routetable	Yes	routetable object	Specifies the route table. For details, see Table 5-224 .

Table 5-224 Description of the **routetable** field

Name	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none"> Specifies the route table name. The value can contain no more than 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
routes	No	Array of route objects	<ul style="list-style-type: none"> Specifies the route list. For details, see Table 5-225. Each route table can have a maximum of 200 routes.
vpc_id	Yes	String	<ul style="list-style-type: none"> Specifies the ID of the VPC associated with the route table.
description	No	String	<ul style="list-style-type: none"> Provides supplementary information about the route table. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).

Table 5-225 Description of the **route** field

Name	Mandatory	Type	Description
type	Yes	String	<ul style="list-style-type: none"> Specifies the route type. Values: <ul style="list-style-type: none"> ecs (ECS) eni (NIC) vip (Virtual IP address) nat (NAT gateway) peering (VPC peering connection) egw: VPC endpoint node
destination	Yes	String	<ul style="list-style-type: none"> Specifies the destination CIDR block of a route. The value must be in the valid CIDR format.

Name	Mandatory	Type	Description
nexthop	Yes	String	<ul style="list-style-type: none"> Specifies the ID of the next hop in the route. Values: <ul style="list-style-type: none"> When type is ecs, the value is an ECS ID. When type is eni, the value is an extension NIC ID. When type is vip, the value is a virtual IP address. When type is nat, the value a NAT gateway ID. When type is peering, the value is a VPC peering connection ID. When type is cc, the value is a Cloud Connect connection ID. When type is set to egw, the value is a VPC endpoint ID.
description	No	String	<ul style="list-style-type: none"> Provides supplementary information about the route. The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Example Request

- Create a route table named **routetable-1234** for the VPC whose ID is 60c809cb-6731-45d0-ace8-3bf5626421a9 and create a route with next hop type of ECS.

POST <https://{Endpoint}/v1/6fbe9263116a4b68818cf1edce16bc4f/routetables>

```
{
  "routetable": {
    "name": "routetable-1234",
    "vpc_id": "60c809cb-6731-45d0-ace8-3bf5626421a9",
    "routes": [
      {
        "type": "ecs",
        "destination": "10.10.10.0/24",
        "nexthop": "7c50463d-d36c-4417-aa85-cc11fa10f341"
      }
    ],
    "description": "abc"
  }
}
```

```
}
}
```

Response Parameters

Table 5-226 Response parameter

Name	Type	Description
routetable	routetable object	Specifies the route table. For details, see Table 5-227 .

Table 5-227 Description of the **routetable** field

Name	Type	Description
id	String	<ul style="list-style-type: none"> Specifies the route table ID that uniquely identifies the route table. The value must be in standard UUID format.
name	String	<ul style="list-style-type: none"> Specifies the route table name. The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
default	Boolean	<ul style="list-style-type: none"> Specifies whether the route table is the default one. The value can be true (default route table) or false (custom route table).
routes	Array of route objects	<ul style="list-style-type: none"> Specifies the route list. For details, see Table 5-220. Each route table can have a maximum of 200 routes.
subnets	Array of subnet objects	<ul style="list-style-type: none"> Specifies the subnets associated with the route table. For details, see Table 5-221. Only subnets in the VPC to which the route table belongs can be associated with the route table.
tenant_id	String	<ul style="list-style-type: none"> Specifies the project ID.
vpc_id	String	<ul style="list-style-type: none"> Specifies the ID of the VPC associated with the route table.

Name	Type	Description
description	String	<ul style="list-style-type: none"> Provides supplementary information about the route table. The value can contain up to 255 characters and cannot contain angle brackets (< or >).
created_at	String	<ul style="list-style-type: none"> Specifies the time (UTC) when the route table is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	<ul style="list-style-type: none"> Specifies the time (UTC) when the route table is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 5-228 Description of the **route** field

Name	Type	Description
type	String	<ul style="list-style-type: none"> Specifies the route type. Values: <ul style="list-style-type: none"> ecs (ECS) eni (NIC) vip (Virtual IP address) nat (NAT gateway) peering (VPC peering connection) egw: VPC endpoint node
destination	String	<ul style="list-style-type: none"> Specifies the destination CIDR block of a route. The value must be in the valid CIDR format.

Name	Type	Description
nexthop	String	<ul style="list-style-type: none"> Specifies the ID of the next hop in the route. Values: <ul style="list-style-type: none"> When type is ecs, the value is an ECS ID. When type is eni, the value is an extension NIC ID. When type is vip, the value is a virtual IP address. When type is nat, the value a NAT gateway ID. When type is peering, the value is a VPC peering connection ID. When type is cc, the value is a Cloud Connect connection ID. When type is set to egw, the value is a VPC endpoint ID.
description	String	<ul style="list-style-type: none"> Provides supplementary information about the route. The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Table 5-229 Description of the **subnet** field

Name	Type	Description
id	String	Specifies the ID of the subnet associated with the route table.

Example Response

```
{
  "routetable": {
    "id": "3d42a0d4-a980-4613-ae76-a2cddecff054",
    "vpc_id": "ab78be2d-782f-42a5-aa72-35879f6890ff",
    "description": "abc",
    "routes": [
      {
        "type": "ecs",
        "destination": "10.10.10.0/24",
        "nexthop": "7c50463d-d36c-4417-aa85-cc11fa10f341",
        "description": "abc"
      }
    ],
    "subnets": [
      {
        "id": "8d4ce32f-d68a-4c4c-9f18-c68d8a5c7f2f"
      }
    ]
  }
}
```

```

    ],
    "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f"
  }
}

```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

5.12.4 Updating a Route Table

Function

This API is used to update a route table.

URI

PUT /v1/{project_id}/routetables/{routetable_id}

[Table 5-230](#) describes the parameters.

Table 5-230 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
routetable_id	Yes	String	Specifies the route table ID that uniquely identifies a route table.

Request Parameters

Table 5-231 Request parameter

Name	Mandatory	Type	Description
routetable	Yes	routetable object	Specifies the route table. For details, see Table 5-232 .

Table 5-232 Description of the **routetable** field

Name	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none"> Specifies the route table name. The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	No	String	<ul style="list-style-type: none"> Provides supplementary information about the route. The value can contain up to 255 characters and cannot contain angle brackets (< or >).
routes	No	RouteTableRouteAction object	<ul style="list-style-type: none"> Specifies the route list. For details, see Table 5-233. Constraints: <ul style="list-style-type: none"> Each route table can have a maximum of 200 routes. The destination cannot be modified directly. To modify the destination, run the del command to delete the corresponding route, and then run the add command to add a route. Specifies the operation to perform. Possible values are as follows: <ul style="list-style-type: none"> add: Adds a route. Parameters type, destination, and nexthop are mandatory. mod: Modifies a route. Parameters type, destination, and nexthop are mandatory. del: Deletes a route. Parameter destination is mandatory.

Table 5-233 Description of the **route** field

Parameter	Mandatory	Type	Description
add	No	Array of AddRouteTableRoute objects	Adds a route. For details, see Table 5-234 . Parameters type , destination , and nexthop are mandatory.
mod	No	Array of ModRouteTableRoute objects	Modifies a route. For details, see Table 5-235 . Parameters type , destination , and nexthop are mandatory.
del	No	Array of DelRouteTableRoute objects	Deletes a route. For details, see Table 5-236 . Parameter destination is mandatory.

Table 5-234 Field description of adding a route

Parameter	Mandatory	Type	Description
type	Yes	String	<ul style="list-style-type: none"> Specifies the route type. Values: <ul style="list-style-type: none"> ecs (ECS) eni (NIC) vip (Virtual IP address) nat (NAT gateway) peering (VPC peering connection) egw: VPC endpoint node
destination	Yes	String	<ul style="list-style-type: none"> Specifies the destination CIDR block of a route. The value must be in the valid CIDR format.

Parameter	Mandatory	Type	Description
nexthop	Yes	String	<ul style="list-style-type: none"> • Specifies the ID of the next hop in the route. • Values: <ul style="list-style-type: none"> - When type is ecs, the value is an ECS ID. - When type is eni, the value is an extension NIC ID. - When type is vip, the value is a virtual IP address. - When type is nat, the value a NAT gateway ID. - When type is peering, the value is a VPC peering connection ID. - When type is cc, the value is a Cloud Connect connection ID. - When type is set to egw, the value is a VPC endpoint ID.
description	No	String	<ul style="list-style-type: none"> • Provides supplementary information about the route. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Table 5-235 Field description of modifying a route

Parameter	Mandatory	Type	Description
type	Yes	String	<ul style="list-style-type: none">• Specifies the route type.• Values:<ul style="list-style-type: none">- ecs (ECS)- eni (NIC)- vip (Virtual IP address)- nat (NAT gateway)- peering (VPC peering connection)- egw: VPC endpoint node
destination	Yes	String	<ul style="list-style-type: none">• Specifies the destination CIDR block of a route.• The value must be in the valid CIDR format.
nexthop	Yes	String	<ul style="list-style-type: none">• Specifies the ID of the next hop in the route.• Values:<ul style="list-style-type: none">- When type is ecs, the value is an ECS ID.- When type is eni, the value is an extension NIC ID.- When type is vip, the value is a virtual IP address.- When type is nat, the value a NAT gateway ID.- When type is peering, the value is a VPC peering connection ID.- When type is cc, the value is a Cloud Connect connection ID.- When type is set to egw, the value is a VPC endpoint ID.

Parameter	Mandatory	Type	Description
description	No	String	<ul style="list-style-type: none"> Provides supplementary information about the route. The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Table 5-236 Field description of deleting a route

Parameter	Mandatory	Type	Description
type	No	String	<ul style="list-style-type: none"> Specifies the route type. Values: <ul style="list-style-type: none"> ecs (ECS) eni (NIC) vip (Virtual IP address) nat (NAT gateway) peering (VPC peering connection) egw: VPC endpoint node
destination	Yes	String	<ul style="list-style-type: none"> Specifies the destination CIDR block of a route. The value must be in the valid CIDR format.

Parameter	Mandatory	Type	Description
nexthop	No	String	<ul style="list-style-type: none"> Specifies the ID of the next hop in the route. Values: <ul style="list-style-type: none"> When type is ecs, the value is an ECS ID. When type is eni, the value is an extension NIC ID. When type is vip, the value is a virtual IP address. When type is nat, the value a NAT gateway ID. When type is peering, the value is a VPC peering connection ID. When type is cc, the value is a Cloud Connect connection ID. When type is set to egw, the value is a VPC endpoint ID.
description	No	String	<ul style="list-style-type: none"> Provides supplementary information about the route. The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Example Request

- Change the route table whose ID is 3d42a0d4-a980-4613-ae76-a2cddecff054, add a route with next hop type of ECS, modify the route with next hop type of ECS, and delete the route whose destination is 20.20.10.0/24.
PUT [https://\[Endpoint\]/v1/6fbe9263116a4b68818cf1edce16bc4f/routetables/3d42a0d4-a980-4613-ae76-a2cddecff054](https://[Endpoint]/v1/6fbe9263116a4b68818cf1edce16bc4f/routetables/3d42a0d4-a980-4613-ae76-a2cddecff054)
- ```

{
 "routetable": {
 "name": "routetable-789",
 "description": "abc",
 "routes": {
 "add": [

```

```

 {
 "type": "ecs",
 "destination": "10.10.10.0/24",
 "nexthop": "7c50463d-d36c-4417-aa85-cc11fa10f341",
 "description": "abc"
 }
],
 "mod": [
 {
 "type": "ecs",
 "destination": "20.10.10.0/24",
 "nexthop": "7c50463d-d36c-4417-aa85-cc11fa10f341",
 "description": "abc"
 }
],
 "del": [
 {
 "destination": "20.20.10.0/24"
 }
]
}

```

## Response Parameters

**Table 5-237** Response parameter

| Name       | Type                     | Description                                                               |
|------------|--------------------------|---------------------------------------------------------------------------|
| routetable | <b>routetable</b> object | Specifies the route table. For details, see <a href="#">Table 5-238</a> . |

**Table 5-238** Description of the **routetable** field

| Name    | Type    | Description                                                                                                                                                                                                     |
|---------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id      | String  | <ul style="list-style-type: none"> <li>Specifies the route table ID that uniquely identifies the route table.</li> <li>The value must be in standard UUID format.</li> </ul>                                    |
| name    | String  | <ul style="list-style-type: none"> <li>Specifies the route table name.</li> <li>The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</li> </ul> |
| default | Boolean | <ul style="list-style-type: none"> <li>Specifies whether the route table is the default one.</li> <li>The value can be <b>true</b> (default route table) or <b>false</b> (custom route table).</li> </ul>       |

| Name        | Type                                    | Description                                                                                                                                                                                                                                                      |
|-------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| routes      | Array of <a href="#">route</a> objects  | <ul style="list-style-type: none"> <li>Specifies the route list. For details, see <a href="#">Table 5-220</a>.</li> <li>Each route table can have a maximum of 200 routes.</li> </ul>                                                                            |
| subnets     | Array of <a href="#">subnet</a> objects | <ul style="list-style-type: none"> <li>Specifies the subnets associated with the route table. For details, see <a href="#">Table 5-221</a>.</li> <li>Only subnets in the VPC to which the route table belongs can be associated with the route table.</li> </ul> |
| tenant_id   | String                                  | <ul style="list-style-type: none"> <li>Specifies the project ID.</li> </ul>                                                                                                                                                                                      |
| vpc_id      | String                                  | <ul style="list-style-type: none"> <li>Specifies the ID of the VPC associated with the route table.</li> </ul>                                                                                                                                                   |
| description | String                                  | <ul style="list-style-type: none"> <li>Provides supplementary information about the route table.</li> <li>The value can contain up to 255 characters and cannot contain angle brackets (&lt; or &gt;).</li> </ul>                                                |
| created_at  | String                                  | <ul style="list-style-type: none"> <li>Specifies the time (UTC) when the route table is created.</li> <li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li> </ul>                                                                                                          |
| updated_at  | String                                  | <ul style="list-style-type: none"> <li>Specifies the time (UTC) when the route table is updated.</li> <li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li> </ul>                                                                                                          |

**Table 5-239** Description of the **route** field

| Name | Type   | Description                                                                                                                                                                                                                                                                                                                                                   |
|------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type | String | <ul style="list-style-type: none"> <li>Specifies the route type.</li> <li>Values: <ul style="list-style-type: none"> <li><b>ecs</b> (ECS)</li> <li><b>eni</b> (NIC)</li> <li><b>vip</b> (Virtual IP address)</li> <li><b>nat</b> (NAT gateway)</li> <li><b>peering</b> (VPC peering connection)</li> <li><b>egw</b>: VPC endpoint node</li> </ul> </li> </ul> |

| Name        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| destination | String | <ul style="list-style-type: none"> <li>Specifies the destination CIDR block of a route.</li> <li>The value must be in the valid CIDR format.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| nexthop     | String | <ul style="list-style-type: none"> <li>Specifies the ID of the next hop in the route.</li> <li>Values: <ul style="list-style-type: none"> <li>When <b>type</b> is <b>ecs</b>, the value is an ECS ID.</li> <li>When <b>type</b> is <b>eni</b>, the value is an extension NIC ID.</li> <li>When <b>type</b> is <b>vip</b>, the value is a virtual IP address.</li> <li>When <b>type</b> is <b>nat</b>, the value a NAT gateway ID.</li> <li>When <b>type</b> is <b>peering</b>, the value is a VPC peering connection ID.</li> <li>When <b>type</b> is <b>cc</b>, the value is a Cloud Connect connection ID.</li> <li>When <b>type</b> is set to <b>egw</b>, the value is a VPC endpoint ID.</li> </ul> </li> </ul> |
| description | String | <ul style="list-style-type: none"> <li>Provides supplementary information about the route.</li> <li>The value can contain up to 255 characters and cannot contain angle brackets (&lt; or &gt;).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

**Table 5-240** Description of the **subnet** field

| Name | Type   | Description                                                     |
|------|--------|-----------------------------------------------------------------|
| id   | String | Specifies the ID of the subnet associated with the route table. |

## Example Response

```
{
 "routetable": {
 "id": "3d42a0d4-a980-4613-ae76-a2cddecff054",
 "vpc_id": "ab78be2d-782f-42a5-aa72-35879f6890ff",
 "description": "abc",
 "default": false,
 "routes": [
 {
 "type": "ecs",
 "destination": "10.10.10.0/24",
```



```
 "nexthop": "7c50463d-d36c-4417-aa85-cc11fa10f341",
 "description": "abc"
 }
],
"subnets": [
 {
 "id": "8d4ce32f-d68a-4c4c-9f18-c68d8a5c7f2f"
 }
],
"tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
"created_at": "2022-12-15T02:56:40",
"updated_at": "2022-12-15T03:03:42"
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.12.5 Associating Subnets with a Route Table

### Function

This API is used to associate a subnet with a route table.

If a subnet has already been associated with route table A, you can associate the subnet with route table B directly without disassociating it from route table A first.

### URI

POST /v1/{project\_id}/routetables/{routetable\_id}/action

[Table 5-241](#) describes the parameters.

**Table 5-241** Parameter description

| Name          | Mandatory | Type   | Description                                                                                                          |
|---------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------|
| project_id    | Yes       | String | Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> . |
| routetable_id | Yes       | String | Specifies the route table ID, which uniquely identifies a route table.                                               |

## Request Parameters

**Table 5-242** Request parameter

| Name       | Mandatory | Type                     | Description                                                               |
|------------|-----------|--------------------------|---------------------------------------------------------------------------|
| routetable | Yes       | <b>routetable</b> object | Specifies the route table. For details, see <a href="#">Table 5-243</a> . |

**Table 5-243** Description of the **routetable** field

| Name    | Mandatory | Type                 | Description                                                                                                                                                                                                       |
|---------|-----------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnets | Yes       | <b>subnet</b> object | <ul style="list-style-type: none"> <li>Specifies the subnets associated with the route table.</li> <li>Only subnets in the VPC that the route table belongs to can be associated with the route table.</li> </ul> |

**Table 5-244** Description of the **subnet** field

| Name         | Mandatory | Type             | Description                                                                      |
|--------------|-----------|------------------|----------------------------------------------------------------------------------|
| associate    | No        | Array of strings | Specifies a list of IDs of the subnets to be associated with the route table.    |
| disassociate | No        | Array of strings | Specifies a list of IDs of the subnets to be disassociated from the route table. |

## Example Request

- Associate route table 3d42a0d4-a980-4613-ae76-a2cddecff054 with subnet 1a8b8c98-3976-401b-a735-8b058109268c.

POST <https://{{Endpoint}}/v1/6fbe9263116a4b68818cf1edce16bc4f/routetables/3d42a0d4-a980-4613-ae76-a2cddecff054/action>

```
{
 "routetable": {
 "subnets": {
 "associate": [
 "1a8b8c98-3976-401b-a735-8b058109268c"
]
 }
 }
}
```

## Response Parameters

**Table 5-245** Response parameter

| Name       | Type                              | Description                                                               |
|------------|-----------------------------------|---------------------------------------------------------------------------|
| routetable | <a href="#">routetable</a> object | Specifies the route table. For details, see <a href="#">Table 5-246</a> . |

**Table 5-246** Description of the [routetable](#) field

| Parameter   | Type                                    | Description                                                                                                                                                                                                                                                      |
|-------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id          | String                                  | <ul style="list-style-type: none"> <li>Specifies the route table ID, which uniquely identifies the route table.</li> <li>The value must be in standard UUID format.</li> </ul>                                                                                   |
| name        | String                                  | <ul style="list-style-type: none"> <li>Specifies the route table name.</li> <li>The value can contain no more than 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</li> </ul>                                           |
| default     | Boolean                                 | <ul style="list-style-type: none"> <li>Specifies whether the route table is the default one.</li> <li>The value can be <b>true</b> (default route table) or <b>false</b> (custom route table).</li> </ul>                                                        |
| routes      | Array of <a href="#">route</a> objects  | <ul style="list-style-type: none"> <li>Specifies the route list. For details, see <a href="#">Table 5-247</a>.</li> <li>Each route table can have a maximum of 200 routes.</li> </ul>                                                                            |
| subnets     | Array of <a href="#">subnet</a> objects | <ul style="list-style-type: none"> <li>Specifies the subnets associated with the route table. For details, see <a href="#">Table 5-248</a>.</li> <li>Only subnets in the VPC to which the route table belongs can be associated with the route table.</li> </ul> |
| tenant_id   | String                                  | <ul style="list-style-type: none"> <li>Specifies the project ID.</li> </ul>                                                                                                                                                                                      |
| vpc_id      | String                                  | <ul style="list-style-type: none"> <li>Specifies the ID of the VPC associated with the route table.</li> </ul>                                                                                                                                                   |
| description | String                                  | <ul style="list-style-type: none"> <li>Provides supplementary information about the route table.</li> <li>The value can contain no more than 255 characters and cannot contain angle brackets (&lt; or &gt;).</li> </ul>                                         |

**Table 5-247** Description of the **route** field

| Name        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type        | String | <ul style="list-style-type: none"><li>• Specifies the route type.</li><li>• Values:<ul style="list-style-type: none"><li>– <b>ecs</b> (ECS)</li><li>– <b>eni</b> (NIC)</li><li>– <b>vip</b> (Virtual IP address)</li><li>– <b>nat</b> (NAT gateway)</li><li>– <b>peering</b> (VPC peering connection)</li><li>– <b>egw</b>: VPC endpoint node</li></ul></li></ul>                                                                                                                                                                                                                                                                                                                                                        |
| destination | String | <ul style="list-style-type: none"><li>• Specifies the destination CIDR block of a route.</li><li>• The value must be in the valid CIDR format.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| nexthop     | String | <ul style="list-style-type: none"><li>• Specifies the ID of the next hop in the route.</li><li>• Values:<ul style="list-style-type: none"><li>– When <b>type</b> is <b>ecs</b>, the value is an ECS ID.</li><li>– When <b>type</b> is <b>eni</b>, the value is an extension NIC ID.</li><li>– When <b>type</b> is <b>vip</b>, the value is a virtual IP address.</li><li>– When <b>type</b> is <b>nat</b>, the value a NAT gateway ID.</li><li>– When <b>type</b> is <b>peering</b>, the value is a VPC peering connection ID.</li><li>– When <b>type</b> is <b>cc</b>, the value is a Cloud Connect connection ID.</li><li>– When <b>type</b> is set to <b>egw</b>, the value is a VPC endpoint ID.</li></ul></li></ul> |
| description | String | <ul style="list-style-type: none"><li>• Provides supplementary information about the route.</li><li>• The value can contain up to 255 characters and cannot contain angle brackets (&lt; or &gt;).</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

**Table 5-248** Description of the **subnet** field

| Name | Type   | Description                                                     |
|------|--------|-----------------------------------------------------------------|
| id   | String | Specifies the ID of the subnet associated with the route table. |

## Example Response

```
{
 "routetable": {
 "id": "3d42a0d4-a980-4613-ae76-a2cddecff054",
 "vpc_id": "ab78be2d-782f-42a5-aa72-35879f6890ff",
 "description": "abc",
 "routes": [
 {
 "type": "ecs",
 "destination": "10.10.10.0/24",
 "nexthop": "7c50463d-d36c-4417-aa85-cc11fa10f341",
 "description": "abc"
 }
],
 "subnets": [
 {
 "id": "8d4ce32f-d68a-4c4c-9f18-c68d8a5c7f2f"
 }
],
 "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f"
 }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.12.6 Disassociating Subnets from a Route Table

### Function

This API is used to disassociate subnets from a route table.

### URI

POST /v1/{project\_id}/routetables/{routetable\_id}/action

[Table 5-249](#) describes the parameters.

**Table 5-249** Parameter description

| Name          | Mandatory | Type   | Description                                                                                                          |
|---------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------|
| project_id    | Yes       | String | Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> . |
| routetable_id | Yes       | String | Specifies the route table ID, which uniquely identifies a route table.                                               |

## Request Parameters

**Table 5-250** Request parameter

| Name       | Mandatory | Type                              | Description                                                               |
|------------|-----------|-----------------------------------|---------------------------------------------------------------------------|
| routetable | Yes       | <a href="#">routetable</a> object | Specifies the route table. For details, see <a href="#">Table 5-251</a> . |

**Table 5-251** Description of the [routetable](#) field

| Name    | Mandatory | Type                          | Description                                                                                                                                                                                                       |
|---------|-----------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnets | Yes       | <a href="#">subnet</a> object | <ul style="list-style-type: none"> <li>Specifies the subnets associated with the route table.</li> <li>Only subnets in the VPC that the route table belongs to can be associated with the route table.</li> </ul> |

**Table 5-252** Description of the [subnet](#) field

| Name      | Mandatory | Type             | Description                                                             |
|-----------|-----------|------------------|-------------------------------------------------------------------------|
| associate | No        | Array of strings | Specifies the IDs of the subnets to be associated with the route table. |

| Name         | Mandatory | Type             | Description                                                                |
|--------------|-----------|------------------|----------------------------------------------------------------------------|
| disassociate | No        | Array of strings | Specifies the IDs of the subnets to be disassociated from the route table. |

## Example Request

- Disassociate route table 3d42a0d4-a980-4613-ae76-a2cddecff054 from subnet 815a6b9e-f766-48eb-967c-0ada72d85435.  
POST <https://{Endpoint}/v1/6fbe9263116a4b68818cf1edce16bc4f/routetables/3d42a0d4-a980-4613-ae76-a2cddecff054/action>

```
{
 "routetable": {
 "subnets": {
 "disassociate": [
 "815a6b9e-f766-48eb-967c-0ada72d85435"
]
 }
 }
}
```

## Response Parameters

Table 5-253 Response parameter

| Name       | Type                     | Description                                                               |
|------------|--------------------------|---------------------------------------------------------------------------|
| routetable | <b>routetable</b> object | Specifies the route table. For details, see <a href="#">Table 5-254</a> . |

Table 5-254 Description of the **routetable** field

| Parameter | Type   | Description                                                                                                                                                                                                            |
|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | String | <ul style="list-style-type: none"> <li>Specifies the route table ID, which uniquely identifies the route table.</li> <li>The value must be in standard UUID format.</li> </ul>                                         |
| name      | String | <ul style="list-style-type: none"> <li>Specifies the route table name.</li> <li>The value can contain no more than 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</li> </ul> |

| Parameter   | Type                                    | Description                                                                                                                                                                                                                                                      |
|-------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default     | Boolean                                 | <ul style="list-style-type: none"> <li>Specifies whether the route table is the default one.</li> <li>The value can be <b>true</b> (default route table) or <b>false</b> (custom route table).</li> </ul>                                                        |
| routes      | Array of <a href="#">route</a> objects  | <ul style="list-style-type: none"> <li>Specifies the route list. For details, see <a href="#">Table 5-255</a>.</li> <li>Each route table can have a maximum of 200 routes.</li> </ul>                                                                            |
| subnets     | Array of <a href="#">subnet</a> objects | <ul style="list-style-type: none"> <li>Specifies the subnets associated with the route table. For details, see <a href="#">Table 5-256</a>.</li> <li>Only subnets in the VPC to which the route table belongs can be associated with the route table.</li> </ul> |
| tenant_id   | String                                  | <ul style="list-style-type: none"> <li>Specifies the project ID.</li> </ul>                                                                                                                                                                                      |
| vpc_id      | String                                  | <ul style="list-style-type: none"> <li>Specifies the ID of the VPC associated with the route table.</li> </ul>                                                                                                                                                   |
| description | String                                  | <ul style="list-style-type: none"> <li>Provides supplementary information about the route table.</li> <li>The value can contain no more than 255 characters and cannot contain angle brackets (&lt; or &gt;).</li> </ul>                                         |
| created_at  | String                                  | <ul style="list-style-type: none"> <li>Specifies the time (UTC) when the route table is created.</li> <li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li> </ul>                                                                                                          |
| updated_at  | String                                  | <ul style="list-style-type: none"> <li>Specifies the time (UTC) when the route table is updated.</li> <li>Format: <i>yyyy-MM-ddTHH:mm:ss</i></li> </ul>                                                                                                          |



**Table 5-255** Description of the **route** field

| Name        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type        | String | <ul style="list-style-type: none"> <li>Specifies the route type.</li> <li>Values: <ul style="list-style-type: none"> <li><b>ecs</b> (ECS)</li> <li><b>eni</b> (NIC)</li> <li><b>vip</b> (Virtual IP address)</li> <li><b>nat</b> (NAT gateway)</li> <li><b>peering</b> (VPC peering connection)</li> <li><b>egw</b>: VPC endpoint node</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                          |
| destination | String | <ul style="list-style-type: none"> <li>Specifies the destination CIDR block of a route.</li> <li>The value must be in the valid CIDR format.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| nexthop     | String | <ul style="list-style-type: none"> <li>Specifies the ID of the next hop in the route.</li> <li>Values: <ul style="list-style-type: none"> <li>When <b>type</b> is <b>ecs</b>, the value is an ECS ID.</li> <li>When <b>type</b> is <b>eni</b>, the value is an extension NIC ID.</li> <li>When <b>type</b> is <b>vip</b>, the value is a virtual IP address.</li> <li>When <b>type</b> is <b>nat</b>, the value is a NAT gateway ID.</li> <li>When <b>type</b> is <b>peering</b>, the value is a VPC peering connection ID.</li> <li>When <b>type</b> is <b>cc</b>, the value is a Cloud Connect connection ID.</li> <li>When <b>type</b> is set to <b>egw</b>, the value is a VPC endpoint ID.</li> </ul> </li> </ul> |
| description | String | <ul style="list-style-type: none"> <li>Provides supplementary information about the route.</li> <li>The value can contain up to 255 characters and cannot contain angle brackets (&lt; or &gt;).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

**Table 5-256** Description of the **subnet** field

| Name | Type   | Description                                                     |
|------|--------|-----------------------------------------------------------------|
| id   | String | Specifies the ID of the subnet associated with the route table. |

## Example Response

```
{
 "routetable": {
 "id": "3d42a0d4-a980-4613-ae76-a2cddecff054",
 "vpc_id": "ab78be2d-782f-42a5-aa72-35879f6890ff",
 "description": "abc",
 "routes": [
 {
 "type": "ecs",
 "destination": "10.10.10.0/24",
 "nexthop": "7c50463d-d36c-4417-aa85-cc11fa10f341",
 "description": "abc"
 }
],
 "subnets": [
 {
 "id": "8d4ce32f-d68a-4c4c-9f18-c68d8a5c7f2f"
 }
],
 "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f"
 }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.12.7 Deleting a Route Table

### Function

This API is used to delete a custom route table.

Constraints:

Only custom route tables can be deleted. If a custom route table has subnets associated, disassociate the subnets with the route table and then delete the route table.

### URI

DELETE /v1/{project\_id}/routetables/{routetable\_id}

[Table 5-257](#) describes the parameters.

**Table 5-257** Parameter description

| Name          | Mandatory | Type   | Description                                                                                                          |
|---------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------|
| project_id    | Yes       | String | Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> . |
| routetable_id | Yes       | String | Specifies the route table ID, which uniquely identifies a route table.                                               |

## Request Parameters

None

## Example Request

```
DELETE https://{Endpoint}/v1/{project_id}/routetables/3d42a0d4-a980-4613-ae76-a2cdcecff054
```

## Response Parameters

None

## Example Response

None

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

# 5.13 Querying IP Address Usage

## 5.13.1 Querying IP Address Usage on a Specified Network

### Function

This API is used to query the IP address usage on a specified network.

The obtained information includes the total number of IP addresses on the network, the number of in-use IP addresses on the network, the total number of

IP addresses on each subnet, and the number of in-use IP addresses on the subnet.

#### NOTICE

- The first and the last two IP addresses on each subnet are reserved by the system for the gateway and DHCP service.
- The total number of IP addresses and the number of in-use IP addresses described in this section and the subsequent sections do not include the IP addresses reserved by the system.
- When assigning an IP address, you can specify the reserved IP address for the system. The reserved IP addresses will not be included in the number of in-use IP addresses and the total number of IP addresses no matter how the IP address is assigned.

## URI

GET /v2.0/network-ip-availabilities/{network\_id}

[Table 5-258](#) describes the parameters.

**Table 5-258** Parameter description

| Parameter  | Type   | Mandatory | Description               |
|------------|--------|-----------|---------------------------|
| network_id | String | Yes       | Specifies the network ID. |

## Request Parameters

None

## Example Request

```
GET https://{Endpoint}/v2.0/network-ip-availabilities/6b50d967-779c-40c9-a157-de1df3c17043
```

## Response Parameters

**Table 5-259** Response parameter

| Name                    | Type                                           | Description                                                                                                   |
|-------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| network_ip_availability | <a href="#">network_ip_availability</a> object | Specifies the <a href="#">network_ip_availability</a> objects. For details, see <a href="#">Table 5-260</a> . |

**Table 5-260 network\_ip\_availability** objects

| Name                   | Type                                                    | Description                                                                                               |
|------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| network_id             | String                                                  | Specifies the network ID.                                                                                 |
| network_name           | String                                                  | Specifies the network name.                                                                               |
| tenant_id              | String                                                  | Specifies the project ID.                                                                                 |
| total_ips              | Integer                                                 | Specifies the total number of IP addresses on a network. (System reserved IP addresses are not included.) |
| used_ips               | Integer                                                 | Specifies the number of in-use IP addresses on a network. (Reserved IP addresses are not included.)       |
| subnet_ip_availability | Array of <a href="#">subnet_ip_availability</a> objects | Specifies the subnet IP address usage objects. For details, see <a href="#">Table 5-261</a> .             |

**Table 5-261** Description of the **subnet\_ip\_availability** field

| Parameter   | Type    | Description                                                                                                             |
|-------------|---------|-------------------------------------------------------------------------------------------------------------------------|
| used_ips    | Integer | Specifies the number of in-use IP addresses on a subnet. (System reserved IP addresses are not included.)               |
| subnet_id   | String  | Specifies the subnet ID. If you use the management console, the value of this parameter is the <b>Network ID</b> value. |
| subnet_name | String  | Specifies the subnet name.                                                                                              |
| ip_version  | Integer | Specifies the IP version of the subnet. Only IPv4 is supported.                                                         |
| cidr        | String  | Specifies the subnet CIDR block.                                                                                        |

| Parameter | Type    | Description                                                                                              |
|-----------|---------|----------------------------------------------------------------------------------------------------------|
| total_ips | Integer | Specifies the total number of IP addresses on a subnet. (System reserved IP addresses are not included.) |

## Example Response

```
{
 "network_ip_availability": {
 "used_ips": 4,
 "subnet_ip_availability": [
 {
 "used_ips": 4,
 "subnet_id": "98e343d1-3cb8-4f69-9cd1-00569819480f",
 "subnet_name": "",
 "ip_version": 4,
 "cidr": "10.0.0.0/8",
 "total_ips": 300
 }
],
 "network_id": "6b50d967-779c-40c9-a157-de1df3c17043",
 "tenant_id": "7c4b23cb125d481c95cbe4f91b2c11cd",
 "total_ips": 300,
 "network_name": "pch_test_003"
 }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

# 6 API V3

## 6.1 VPC

### 6.1.1 Querying VPCs

#### Function

This API is used to query VPCs.

#### Constraints

This API is used to query all VPCs accessible to the tenant submitting the request. A maximum of 2000 records can be returned for each query. If the number of records exceeds 2000, the pagination marker will be returned.

#### URI

GET /v3/{project\_id}/vpc/vpcs

**Table 6-1** Parameter description

| Name       | Mandatory | Type   | Description                                                                                               |
|------------|-----------|--------|-----------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | Project ID.<br>For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> . |

**Table 6-2** Query parameters

| Parameter   | Man<br>dator<br>y | Type             | Description                                                                                                          |
|-------------|-------------------|------------------|----------------------------------------------------------------------------------------------------------------------|
| limit       | No                | Integer          | Number of records displayed on each page.<br>Value range: 0 to 2000                                                  |
| marker      | No                | String           | Start resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried. |
| id          | No                | Array of strings | VPC ID, which can be used to filter VPCs.                                                                            |
| name        | No                | Array of strings | VPC name, which can be used to filter VPCs.                                                                          |
| description | No                | Array of strings | Supplementary information about the VPC, which can be used to filter VPCs.                                           |
| cidr        | No                | Array of strings | VPC CIDR block, which can be used to filter VPCs.                                                                    |

## Request Parameter

None

## Example Request

- Querying VPCs  
"GET https://{Endpoint}/v3/{project\_id}/vpc/vpcs"
- Querying VPCs by VPC ID  
"GET https://{Endpoint}/v3/{project\_id}/vpc/vpcs?id=01ab4be1-4447-45fb-94be-3ee787ed4ebe&id=02cd5ef2-4447-36fb-75be-3ee787ed6adf"
- Querying VPCs by VPC name  
"GET https://{Endpoint}/v3/{project\_id}/vpc/vpcs?name=vpc-test"
- Querying VPCs by page  
"GET https://{Endpoint}/v3/{project\_id}/vpc/vpcs?limit=2&marker=01ab4be1-4447-45fb-94be-3ee787ed4ebe"

## Response Parameter

**Table 6-3** Response body parameters

| Parameter  | Type                        | Description           |
|------------|-----------------------------|-----------------------|
| request_id | String                      | Request ID            |
| vpcs       | Array of <b>Vpc</b> objects | Response body of VPCs |



| Parameter | Type                            | Description            |
|-----------|---------------------------------|------------------------|
| page_info | <a href="#">PageInfo</a> object | Pagination information |

**Table 6-4** Vpc

| Parameter    | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id           | String           | VPC ID, which uniquely identifies the VPC.<br>The value is in UUID format with hyphens (-).                                                                                                                                                                                                                                                                                                                 |
| name         | String           | VPC name<br>The value can contain no more than 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).                                                                                                                                                                                                                                                                     |
| description  | String           | Provides supplementary information about the VPC.<br>The value can contain no more than 255 characters and cannot contain angle brackets (< or >).                                                                                                                                                                                                                                                          |
| cidr         | String           | Available VPC CIDR blocks<br>Value range: <ul style="list-style-type: none"> <li>• 10.0.0.0/8-10.255.255.240/28</li> <li>• 172.16.0.0/12-172.31.255.240/28</li> <li>• 192.168.0.0/16-192.168.255.240/28</li> </ul> If <b>cidr</b> is not specified, the default value is "". <ul style="list-style-type: none"> <li>• The value must be in IPv4 CIDR format, for example, <b>192.168.0.0/16</b>.</li> </ul> |
| extend_cidrs | Array of strings | Secondary CIDR blocks of VPCs<br>Value range:<br>Currently, only IPv4 CIDR blocks are supported.                                                                                                                                                                                                                                                                                                            |
| status       | String           | VPC status<br>Value range: <ul style="list-style-type: none"> <li>• <b>PENDING</b>: The VPC is being created.</li> <li>• <b>ACTIVE</b>: The VPC is created successfully.</li> </ul>                                                                                                                                                                                                                         |
| project_id   | String           | ID of the project to which the VPC belongs                                                                                                                                                                                                                                                                                                                                                                  |
| created_at   | String           | Time when the VPC is created<br>UTC time in the format of yyyy-MM-ddTHH:mm:ss                                                                                                                                                                                                                                                                                                                               |

| Parameter       | Type                                  | Description                                                                                                                                                                                             |
|-----------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at      | String                                | Time when the VPC is updated<br>UTC time in the format of yyyy-MM-ddTHH:mm:ss                                                                                                                           |
| cloud_resources | Array of <b>CloudResource</b> objects | Type and number of resources associated with the VPC<br>Currently, only route tables and subnets of the VPC are returned. The number of <b>virsubnets</b> is the total number of IPv4 and IPv6 subnets. |

**Table 6-5** CloudResource

| Parameter      | Type    | Description         |
|----------------|---------|---------------------|
| resource_type  | String  | Resource type       |
| resource_count | Integer | Number of resources |

**Table 6-6** PageInfo

| Parameter       | Type    | Description                                                                                 |
|-----------------|---------|---------------------------------------------------------------------------------------------|
| previous_marker | String  | First record on the current page                                                            |
| current_count   | Integer | Total number of records on the current page                                                 |
| next_marker     | String  | Last record on the current page. This parameter does not exist if the page is the last one. |

## Example Response

```
{
 "request_id": "9c1838ba498249547be43dd618b58d27",
 "vpcs": [
 {
 "id": "01da5a65-0bb9-4638-8ab7-74c64e24a9a7",
 "name": "API-PERF-TEST-14bd44c121",
 "description": "",
 "cidr": "192.168.0.0/16",
 "extend_cidrs": [],
 "status": "ACTIVE",
 "project_id": "087679f0aa80d32a2f4ec0172f5e902b",
 "created_at": "2020-06-16T02:32:18Z",
 "updated_at": "2020-06-16T02:32:18Z",
 "cloud_resources": [
 {
 "resource_type": "routetable",
 "resource_count": 1
 }
]
 }
]
}
```

```
 },
 {
 "resource_type": "virsubnet",
 "resource_count": 0
 }
]
},
{
 "id": "43fd79b0-f7d7-4e9b-828b-2d4d7bfae428",
 "name": "API-PERF-TEST_m2n33",
 "description": "",
 "cidr": "192.168.0.0/16",
 "extend_cidrs": [],
 "status": "ACTIVE",
 "project_id": "087679f0aa80d32a2f4ec0172f5e902b",
 "created_at": "2020-06-15T06:29:40Z",
 "updated_at": "2020-06-15T06:29:41Z",
 "cloud_resources": [
 {
 "resource_type": "routetable",
 "resource_count": 1
 },
 {
 "resource_type": "virsubnet",
 "resource_count": 1
 }
]
},
{
 "id": "5ed053ba-b46c-4dce-a1ae-e9d8a7015f21",
 "name": "API-PERF-TEST-c34b1c4b12",
 "description": "",
 "cidr": "192.168.0.0/16",
 "extend_cidrs": [],
 "status": "ACTIVE",
 "project_id": "087679f0aa80d32a2f4ec0172f5e902b",
 "created_at": "2020-06-16T02:32:33Z",
 "updated_at": "2020-06-16T02:32:33Z",
 "cloud_resources": [
 {
 "resource_type": "routetable",
 "resource_count": 1
 },
 {
 "resource_type": "virsubnet",
 "resource_count": 0
 }
]
}
],
"page_info": {
 "previous_marker": "01da5a65-0bb9-4638-8ab7-74c64e24a9a7",
 "current_count": 3
}
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 6.1.2 Querying Details About a VPC

### Function

This API is used to query details about a VPC.

### URI

GET /v3/{project\_id}/vpc/vpcs/{vpc\_id}

**Table 6-7** Parameter description

| Parameter  | Mandatory | Type   | Description                                                                                               |
|------------|-----------|--------|-----------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | Project ID.<br>For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> . |
| vpc_id     | Yes       | String | VPC ID.                                                                                                   |

### Request Parameter

None

### Example Request

- Querying details about a VPC  
"GET https://{Endpoint}/v3/{project\_id}/vpc/vpcs/99d9d709-8478-4b46-9f3f-2206b1023fd3"

### Response Parameter

**Table 6-8** Response body parameters

| Parameter  | Type                       | Description       |
|------------|----------------------------|-------------------|
| request_id | String                     | Request ID        |
| vpc        | <a href="#">Vpc</a> object | VPC response body |

**Table 6-9** Vpc

| Parameter | Type   | Description                                                                                |
|-----------|--------|--------------------------------------------------------------------------------------------|
| id        | String | VPC ID, which uniquely identifies the VPC<br>The value is in UUID format with hyphens (-). |

| Parameter       | Type                                  | Description                                                                                                                                                                                                                                                                                                                                                 |
|-----------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name            | String                                | VPC name<br>The value can contain no more than 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).                                                                                                                                                                                                                     |
| description     | String                                | Provides supplementary information about the VPC.<br>The value can contain no more than 255 characters and cannot contain angle brackets (< or >).                                                                                                                                                                                                          |
| cidr            | String                                | Available VPC CIDR blocks<br>Value range: <ul style="list-style-type: none"> <li>• 10.0.0.0/8-10.255.255.240/28</li> <li>• 172.16.0.0/12-172.31.255.240/28</li> <li>• 192.168.0.0/16-192.168.255.240/28</li> </ul> If <b>cidr</b> is not specified, the default value is "".<br>The value must be in IPv4 CIDR format, for example, <b>192.168.0.0/16</b> . |
| extend_cidrs    | Array of strings                      | Secondary CIDR blocks of VPCs<br>Currently, only IPv4 CIDR blocks are supported.                                                                                                                                                                                                                                                                            |
| status          | String                                | VPC status<br>Value range: <ul style="list-style-type: none"> <li>• <b>PENDING</b>: The VPC is being created.</li> <li>• <b>ACTIVE</b>: The VPC is created successfully.</li> </ul>                                                                                                                                                                         |
| project_id      | String                                | ID of the project to which the VPC belongs                                                                                                                                                                                                                                                                                                                  |
| created_at      | String                                | Time when the VPC is created<br>UTC time in the format of yyyy-MM-ddTHH:mm:ss                                                                                                                                                                                                                                                                               |
| updated_at      | String                                | Time when the VPC is updated<br>UTC time in the format of yyyy-MM-ddTHH:mm:ss                                                                                                                                                                                                                                                                               |
| cloud_resources | Array of <b>CloudResource</b> objects | Type and number of resources associated with the VPC<br>Currently, only route tables and subnets of the VPC are returned. The number of <b>virsubnets</b> is the total number of IPv4 and IPv6 subnets.                                                                                                                                                     |

**Table 6-10** CloudResource

| Parameter      | Type    | Description         |
|----------------|---------|---------------------|
| resource_type  | String  | Resource type       |
| resource_count | Integer | Number of resources |

## Example Response

```
{
 "request_id": "84eb4f775d66dd916db121768ec55626",
 "vpc": {
 "id": "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
 "name": "name-test",
 "description": "description-test",
 "cidr": "192.168.0.0/16",
 "extend_cidrs": [
 "21.8.0.0/16"
],
 "cloud_resources": [
 {
 "resource_type": "routetable",
 "resource_count": 1
 }
],
 "status": "ACTIVE",
 "project_id": "060576782980d5762f9ec014dd2f1148",
 "created_at": "2018-03-23T09:26:08",
 "updated_at": "2018-08-24T08:49:53"
 }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 6.1.3 Adding a Secondary CIDR Block to a VPC

### Function

This API is used to add a secondary CIDR block to a VPC.

### URI

PUT /v3/{project\_id}/vpc/vpcs/{vpc\_id}/add-extend-cidr

**Table 6-11** Parameter description

| Parameter  | Mandatory | Type   | Description                                                                                               |
|------------|-----------|--------|-----------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | Project ID.<br>For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> . |
| vpc_id     | Yes       | String | VPC ID.                                                                                                   |

## Request Parameter

**Table 6-12** Request body parameter

| Parameter | Mandatory | Type                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dry_run   | No        | Boolean                                    | Whether to only send the check request.<br>Value range: <ul style="list-style-type: none"> <li><b>true</b>: Only the check request will be sent and no secondary CIDR block will be added. Check items include mandatory parameters, request format, and permission verification. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned.</li> <li><b>false</b> (default value): A request will be sent and a secondary CIDR block will be added.</li> </ul> |
| vpc       | Yes       | <a href="#">AddExtendCidrOption</a> object | Request body for adding a secondary CIDR block.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Table 6-13** AddExtendCidrOption

| Parameter    | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| extend_cidrs | Yes       | Array of strings | <p>Secondary CIDR blocks that can be added to VPCs</p> <p>The value cannot contain the following:</p> <ul style="list-style-type: none"> <li>• 100.64.0.0/10</li> <li>• 214.0.0.0/7</li> <li>• 198.18.0.0/15</li> <li>• 169.254.0.0/16</li> <li>• 0.0.0.0/8</li> <li>• 127.0.0.0/8</li> <li>• 240.0.0.0/4</li> <li>• 172.31.0.0/16</li> <li>• 192.168.0.0/16</li> <li>• 255.255.255.255/32</li> </ul> |

### Example Request

- Add a secondary CIDR block 23.8.0.0/16 to the VPC whose ID is 99d9d709-8478-4b46-9f3f-2206b1023fd3.  
PUT https://{Endpoint}/v3/{project\_id}/vpc/vpcs/99d9d709-8478-4b46-9f3f-2206b1023fd3/add-extend-cidr
- ```

{
  "vpc": {
    "extend_cidrs": [
      "23.8.0.0/16"
    ]
  }
}

```

Response Parameter

Table 6-14 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
vpc	Vpc object	Response body of adding a secondary CIDR block

Table 6-15 Vpc

Parameter	Type	Description
id	String	VPC ID that uniquely identifies the VPC The value is in UUID format with hyphens (-).
name	String	VPC name The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	Provides supplementary information about the VPC. The value can contain up to 255 characters and cannot contain angle brackets (< or >).
cidr	String	Available VPC CIDR blocks Value range: <ul style="list-style-type: none"> • 10.0.0.0/8-10.255.255.240/28 • 172.16.0.0/12-172.31.255.240/28 • 192.168.0.0/16-192.168.255.240/28 If cidr is not specified, the default value is "". The value must be in IPv4 CIDR format, for example, 192.168.0.0/16 .
extend_cidrs	Array of strings	Secondary CIDR blocks of VPCs Currently, only IPv4 CIDR blocks are supported.
status	String	VPC status Value range: <ul style="list-style-type: none"> • PENDING: The VPC is being created. • ACTIVE: The VPC is created successfully.
project_id	String	ID of the project to which the VPC belongs
created_at	String	Time when the VPC is created UTC time in the format of yyyy-MM-ddTHH:mm:ss
updated_at	String	Time when the VPC is updated UTC time in the format of yyyy-MM-ddTHH:mm:ss
cloud_resources	Array of CloudResource objects	Type and number of resources associated with the VPC Currently, only route tables and subnets of the VPC are returned. The number of virsubnets is the total number of IPv4 and IPv6 subnets.

Table 6-16 CloudResource

Parameter	Type	Description
resource_type	String	Resource type
resource_count	Integer	Number of resources

Example Response

```
{
  "request_id": "84eb4f775d66dd916db121768ec55626",
  "vpc": {
    "id": "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
    "name": "vpc1",
    "description": "test1",
    "cidr": "192.168.0.0/16",
    "extend_cidrs": [
      "23.8.0.0/16"
    ],
    "cloud_resources": [
      {
        "resource_type": "routetable",
        "resource_count": 1
      }
    ],
    "status": "ACTIVE",
    "project_id": "060576782980d5762f9ec014dd2f1148",
    "created_at": "2018-03-23T09:26:08",
    "updated_at": "2018-08-24T08:49:53"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.1.4 Removing a Secondary CIDR Block from a VPC

Function

This API is used to remove a secondary CIDR block from a VPC.

URI

PUT /v3/{project_id}/vpc/vpcs/{vpc_id}/remove-extend-cidr

Table 6-17 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
vpc_id	Yes	String	VPC ID.

Request Parameter

Table 6-18 Request body parameter

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	Whether to only send the check request. Value range: <ul style="list-style-type: none"> true: Only the check request will be sent and no secondary CIDR block will be added. Check items include mandatory parameters, request format, and permission verification. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. false (default value): A request will be sent and a secondary CIDR block will be added.
vpc	Yes	RemoveExtendedCidrOption object	Request body for removing a secondary CIDR block

Table 6-19 RemoveExtendCidrOption

Parameter	Mandatory	Type	Description
extend_cidrs	Yes	Array of strings	<p>Secondary CIDR blocks that can be removed from VPCs</p> <p>VPCs already have secondary CIDR blocks.</p> <p>Constraints:</p> <ul style="list-style-type: none"> Before removing a secondary CIDR block, delete the subnets in the CIDR block first.

Example Request

- Remove the secondary CIDR block 23.8.0.0/16 from the VPC whose ID is 99d9d709-8478-4b46-9f3f-2206b1023fd3.

PUT https://{Endpoint}/v3/{project_id}/vpc/vpcs/99d9d709-8478-4b46-9f3f-2206b1023fd3/remove-extend-cidr

```
{
  "vpc": {
    "extend_cidrs": [
      "23.8.0.0/16"
    ]
  }
}
```

Response Parameter

Table 6-20 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
vpc	Vpc object	Response body of removing a secondary CIDR block

Table 6-21 Vpc

Parameter	Type	Description
id	String	<p>VPC ID that uniquely identifies the VPC</p> <p>The value is in UUID format with hyphens (-).</p>

Parameter	Type	Description
name	String	VPC name The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	Provides supplementary information about the VPC. The value can contain up to 255 characters and cannot contain angle brackets (< or >).
cidr	String	Available VPC CIDR blocks Value range: <ul style="list-style-type: none"> 10.0.0.0/8-10.255.255.240/28 172.16.0.0/12-172.31.255.240/28 192.168.0.0/16-192.168.255.240/28 If cidr is not specified, the default value is "". <ul style="list-style-type: none"> The value must be in IPv4 CIDR format, for example, 192.168.0.0/16.
extend_cidrs	Array of strings	Secondary CIDR blocks of VPCs Currently, only IPv4 CIDR blocks are supported.
status	String	VPC status Value range: <ul style="list-style-type: none"> PENDING: The VPC is being created. ACTIVE: The VPC is created successfully.
project_id	String	ID of the project to which the VPC belongs
created_at	String	Time when the VPC is created UTC time in the format of yyyy-MM-ddTHH:mm:ss
updated_at	String	Time when the VPC is updated UTC time in the format of yyyy-MM-ddTHH:mm:ss
cloud_resources	Array of CloudResource objects	Type and number of resources associated with the VPC Currently, only route tables and subnets of the VPC are returned. The number of virsubnets is the total number of IPv4 and IPv6 subnets.

Table 6-22 CloudResource

Parameter	Type	Description
resource_type	String	Resource type
resource_count	Integer	Number of resources

Example Response

```
{
  "request_id": "84eb4f775d66dd916db121768ec55626",
  "vpc": {
    "id": "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
    "name": "vpc1",
    "description": "test1",
    "cidr": "192.168.0.0/16",
    "extend_cidrs": [],
    "cloud_resources": [
      {
        "resource_type": "routetable",
        "resource_count": 1
      }
    ],
    "status": "ACTIVE",
    "project_id": "060576782980d5762f9ec014dd2f1148",
    "created_at": "2018-03-23T09:26:08",
    "updated_at": "2018-08-24T08:49:53"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.2 Security Group

6.2.1 Creating a Security Group

Function

This API is used to create a security group.

Constraints

By default, a security group only allows instances in it to communicate with each other.

URI

POST /v3/{project_id}/vpc/security-groups

Table 6-23 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameter

Table 6-24 Request body parameter

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	Whether to only send the check request. The value can be: <ul style="list-style-type: none"> true: A check request will be sent and no security group will be created. Check items include mandatory parameters, request format, and permission verification. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. false (default value): A request will be sent and a security group will be created.
security_group	Yes	CreateSecurityGroupOption object	Request body for creating a security group

Table 6-25 CreateSecurityGroupOption

Parameter	Man dator y	Type	Description
name	Yes	String	Security group name The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	No	String	Provides supplementary information about the security group. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).

Example Request

- Create a security group and set its name to **security_group_1** and description to **security group description**.

```
POST https://{Endpoint}/v3/{project_id}/vpc/security-groups
{
  "security_group": {
    "name": "security_group_1",
    "description": "security group description"
  }
}
```

- Create a security group, set its name to **security_group_1** and description to **security group description**, and specify that the request is pre-checked.

```
POST https://{Endpoint}/v3/{project_id}/vpc/security-groups
{
  "security_group": {
    "name": "security_group_1",
    "description": "security group description"
  },
  "dry_run": true
}
```

Response Parameter

When the status code is **201**, the response parameters are as follows:

Table 6-26 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
security_group	SecurityGroupInfo object	Response body for creating a security group

Table 6-27 SecurityGroupInfo

Parameter	Type	Description
id	String	Security group ID, which uniquely identifies the security group The value is in UUID format with hyphens (-).
name	String	Security group name The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	Provides supplementary information about the security group. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
project_id	String	ID of the project to which the security group belongs
created_at	String	Time when the security group is created UTC time in the format of yyyy-MM-ddTHH:mmss
updated_at	String	Time when the security group is updated UTC time in the format of yyyy-MM-ddTHH:mmss
security_group_rules	Array of SecurityGroupRule object	Security group rules

Table 6-28 SecurityGroupRule

Parameter	Type	Description
id	String	Security group rule ID, which uniquely identifies the security group rule The value is in UUID format with hyphens (-).
description	String	Provides supplementary information about the security group rule. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
security_group_id	String	ID of the security group to which the security group rule belongs.

Parameter	Type	Description
direction	String	Inbound or outbound direction of a security group rule. The value can be: <ul style="list-style-type: none"> • ingress: inbound direction • egress: outbound direction
protocol	String	Protocol type The value can be icmp , tcp , udp , icmpv6 or an IP number. If the parameter is left blank, all protocols are supported. When the protocol is icmpv6 , IP version should be IPv6 . When the protocol is icmp , IP version should be IPv4 .
ethertype	String	IP version The value can be IPv4 or IPv6 . If you do not set this parameter, IPv4 is used by default.
multiport	String	Port or port range The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80).
action	String	Action of the security group rule. The value can be: <ul style="list-style-type: none"> • allow • deny The default value is deny .
priority	Integer	Rule priority. The value is from 1 to 100 . The value 1 indicates the highest priority.
remote_group_id	String	ID of the remote security group, which allows or denies traffic to and from the security group. Value range: ID of an existing security group The parameter is mutually exclusive with parameters remote_ip_prefix and remote_address_group_id .

Parameter	Type	Description
remote_ip_prefix	String	Remote IP address. <ul style="list-style-type: none"> If direction is set to egress, the parameter specifies the source IP address. If direction is set to ingress, the parameter specifies the destination IP address. The value is an IP address or a CIDR block. The parameter is mutually exclusive with parameters remote_group_id and remote_address_group_id .
remote_address_group_id	String	ID of the remote IP address group. Value range: ID of an existing IP address group The parameter is mutually exclusive with parameters remote_ip_prefix and remote_group_id .
created_at	String	Time when the security group rule is created UTC time in the format of yyyy-MM-ddTHH:mmss
updated_at	String	Time when the security group rule is updated UTC time in the format of yyyy-MM-ddTHH:mmss
project_id	String	ID of the project to which the security group rule belongs.

When the status code is **400**, the response parameters are as follows:

Table 6-29 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

When the status code is **401**, the response parameters are as follows:

Table 6-30 Response body parameters

Parameter	Type	Description
request_id	String	Request ID

Parameter	Type	Description
error_msg	String	Error message
error_code	String	Error code

When the status code is **403**, the response parameters are as follows:

Table 6-31 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

When the status code is **409**, the response parameters are as follows:

Table 6-32 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

When the status code is **500**, the response parameters are as follows:

Table 6-33 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

Example Response

When the status code is **201**, the response parameters are as follows:

```
Created
{
  "security_group": {
```

```
"id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
"name": "security_group_1",
"project_id": "060576782980d5762f9ec014dd2f1148",
"description": "security group description",
"security_group_rules": [
  {
    "id": "f11a3824-ac19-4fad-b4f1-c5f4a6dd0a80",
    "project_id": "060576782980d5762f9ec014dd2f1148",
    "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "direction": "ingress",
    "protocol": null,
    "description": "",
    "created_at": "2020-07-09T05:56:27Z",
    "updated_at": "2020-07-09T05:56:27Z",
    "ethertype": "IPv6",
    "remote_ip_prefix": null,
    "multiport": null,
    "remote_address_group_id": null,
    "action": "allow",
    "priority": 100
  },
  {
    "id": "3d6480e8-9ea4-46dc-bb1b-8db190cd5677",
    "project_id": "060576782980d5762f9ec014dd2f1148",
    "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "remote_group_id": null,
    "direction": "egress",
    "protocol": null,
    "description": "",
    "created_at": "2020-07-09T05:56:27Z",
    "updated_at": "2020-07-09T05:56:27Z",
    "ethertype": "IPv6",
    "remote_ip_prefix": null,
    "multiport": null,
    "remote_address_group_id": null,
    "action": "allow",
    "priority": 100
  },
  {
    "id": "9581f18c-1 added-43da-ace9-7758a56ef28a",
    "project_id": "060576782980d5762f9ec014dd2f1148",
    "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "remote_group_id": null,
    "direction": "egress",
    "protocol": null,
    "description": "",
    "created_at": "2020-07-09T05:56:27Z",
    "updated_at": "2020-07-09T05:56:27Z",
    "ethertype": "IPv4",
    "remote_ip_prefix": null,
    "multiport": null,
    "remote_address_group_id": null,
    "action": "allow",
    "priority": 100
  },
  {
    "id": "a3ba270e-e58b-432d-a912-aeb7eace9fb8",
    "project_id": "060576782980d5762f9ec014dd2f1148",
    "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "direction": "ingress",
    "protocol": null,
    "description": "",
    "created_at": "2020-07-09T05:56:27Z",
    "updated_at": "2020-07-09T05:56:27Z",
    "ethertype": "IPv4",
    "remote_ip_prefix": null,
    "multiport": null,
  }
]
```

```
        "remote_address_group_id": null,  
        "action": "allow",  
        "priority": 100  
    }  
  ],  
  "created_at": "2020-07-09T05:56:27Z",  
  "updated_at": "2020-07-09T05:56:27Z"  
},  
"request_id": "a8cf4f79ca3c22ca685e7e8872e8c20b"  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.2.2 Querying Security Groups

Function

This API is used to query all security groups of a tenant.

Constraints

This API is used to query all security groups accessible to the tenant submitting the request. A maximum of 2000 records can be returned for each query. If the number of records exceeds 2000, the pagination marker will be returned.

URI

GET /v3/{project_id}/vpc/security-groups

Table 6-34 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Table 6-35 Query parameters

Parameter	Man dator y	Type	Description
limit	No	Integer	Number of records displayed on each page. Value range: 0 to 2000
marker	No	String	Start resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried.
id	No	String	Security group ID. This field can be used to precisely filter security groups. Multiple IDs can be specified for filtering.
name	No	Array of strings	Security group name. This field can be used to precisely filter security groups. Multiple names can be specified for filtering.
description	No	Array of strings	Provides supplementary information about the security group. This field can be used to precisely filter security groups. Multiple descriptions can be specified for filtering.

Request Parameter

None

Example Request

- Query security groups.
"GET https://{Endpoint}/v3/{project_id}/vpc/security-groups"

Response Parameter

When the status code is **200**, the response parameters are as follows:

Table 6-36 Response body parameters

Parameter	Type	Description
security_groups	Array of SecurityGroup objects	Response body of security groups
request_id	String	Request ID

Parameter	Type	Description
page_info	PageInfo object	Pagination information

Table 6-37 SecurityGroup

Parameter	Type	Description
id	String	Security group ID, which uniquely identifies the security group The value is in UUID format with hyphens (-).
name	String	Security group name The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	Provides supplementary information about the security group. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
project_id	String	ID of the project to which the security group belongs
created_at	String	Time when the security group is created UTC time in the format of yyyy-MM-ddTHH:mmss
updated_at	String	Time when the security group is updated UTC time in the format of yyyy-MM-ddTHH:mmss

Table 6-38 page_info

Parameter	Type	Description
previous_marker	String	First record on the current page
current_count	Integer	Total number of records on the current page
next_marker	String	Last record on the current page. This parameter does not exist if the page is the last one.

When the status code is **400**, the response parameters are as follows:

Table 6-39 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

When the status code is **401**, the response parameters are as follows:

Table 6-40 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

When the status code is **403**, the response parameters are as follows:

Table 6-41 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

When the status code is **500**, the response parameters are as follows:

Table 6-42 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

Example Response

When the status code is **200**, the response parameters are as follows:

```

OK
{
  "request_id": "d31cb32ca06f3c1a294fa24e6cbc5a56",
  "security_groups": [
    {
      "id": "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
      "name": "Sys-FullAccess--",
      "project_id": "060576782980d5762f9ec014dd2f1148",
      "description": "~!@#¥",
      "created_at": "2019-10-16T11:11:14Z",
      "updated_at": "2020-03-25T10:53:46Z"
    },
    {
      "id": "0b8cb773-197c-4c91-94f1-e051f0563e5a",
      "name": "test-sg",
      "project_id": "060576782980d5762f9ec014dd2f1148",
      "description": "The security group is for general-purpose web servers and includes default rules
that allow all inbound ICMP traffic and allow inbound traffic on ports 22, 3389, 80, and 443. This security
group is suitable for ECSs that require remote login, public network ping, and website services.",
      "created_at": "2019-12-03T09:02:11Z",
      "updated_at": "2019-12-03T09:02:11Z"
    }
  ],
  "page_info": {
    "previous_marker": "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
    "current_count": 2
  }
}

```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.2.3 Querying a Security Group

Function

This API is used to query details about a security group.

URI

GET /v3/{project_id}/vpc/security-groups/{security_group_id}

Table 6-43 Parameter description

Parameter	Man dator y	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
security_grou p_id	Yes	String	Security group ID.

Request Parameter

None

Example Request

- Query details about a security group.
"GET https://{Endpoint}/v3/{project_id}/vpc/security-groups/1d8b19c7-7c56-48f7-a99b-4b40eb390967"

Response Parameter

When the status code is **200**, the response parameters are as follows:

Table 6-44 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
security_group	SecurityGroupInfo object	Response body for querying details about a security group

Table 6-45 SecurityGroupInfo

Parameter	Type	Description
id	String	Security group ID, which uniquely identifies the security group The value is in UUID format with hyphens (-).
name	String	Security group name The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	Provides supplementary information about the security group. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
project_id	String	ID of the project to which the security group belongs
created_at	String	Time when the security group is created UTC time in the format of yyyy-MM-ddTHH:mmss

Parameter	Type	Description
updated_at	String	Time when the security group is updated UTC time in the format of yyyy-MM-ddTHH:mmss
security_group_rules	Array of SecurityGroupRule objects	Security group rules

Table 6-46 SecurityGroupRule

Parameter	Type	Description
id	String	Security group rule ID, which uniquely identifies the security group rule The value is in UUID format with hyphens (-).
description	String	Provides supplementary information about the security group rule. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
security_group_id	String	ID of the security group to which the security group rule belongs.
direction	String	Inbound or outbound direction of a security group rule. The value can be: <ul style="list-style-type: none"> • ingress: inbound direction • egress: outbound direction
protocol	String	Protocol type The value can be icmp , tcp , udp , icmpv6 or an IP number. If the parameter is left blank, all protocols are supported. When the protocol is icmpv6 , IP version should be IPv6 . When the protocol is icmp , IP version should be IPv4 .
ethertype	String	IP version The value can be IPv4 or IPv6 . If you do not set this parameter, IPv4 is used by default.

Parameter	Type	Description
multiport	String	Port or port range The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80).
action	String	Action of the security group rule. The value can be: <ul style="list-style-type: none"> • allow • deny The default value is deny .
priority	Integer	Rule priority. The value is from 1 to 100 . The value 1 indicates the highest priority.
remote_group_id	String	ID of the remote security group, which allows or denies traffic to and from the security group. Value range: ID of an existing security group The parameter is mutually exclusive with parameters remote_ip_prefix and remote_address_group_id .
remote_ip_prefix	String	Remote IP address. <ul style="list-style-type: none"> • If direction is set to egress, the parameter specifies the source IP address. • If direction is set to ingress, the parameter specifies the destination IP address. The value is an IP address or a CIDR block. The parameter is mutually exclusive with parameters remote_group_id and remote_address_group_id .
remote_address_group_id	String	ID of the remote IP address group. Value range: ID of an existing IP address group The parameter is mutually exclusive with parameters remote_ip_prefix and remote_group_id .
created_at	String	Time when the security group rule is created UTC time in the format of yyyy-MM-ddTHH:mmss
updated_at	String	Time when the security group rule is updated UTC time in the format of yyyy-MM-ddTHH:mmss

Parameter	Type	Description
project_id	String	ID of the project to which the security group rule belongs.

When the status code is **401**, the response parameters are as follows:

Table 6-47 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

When the status code is **403**, the response parameters are as follows:

Table 6-48 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

When the status code is **404**, the response parameters are as follows:

Table 6-49 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

When the status code is **500**, the response parameters are as follows:

Table 6-50 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

Example Response

When the status code is **200**, the response parameters are as follows:

OK

```
{
  "security_group": {
    "id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "name": "security_group_1",
    "project_id": "060576782980d5762f9ec014dd2f1148",
    "description": "security group description",
    "security_group_rules": [
      {
        "id": "f11a3824-ac19-4fad-b4f1-c5f4a6dd0a80",
        "project_id": "060576782980d5762f9ec014dd2f1148",
        "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
        "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
        "direction": "ingress",
        "protocol": null,
        "description": "",
        "created_at": "2020-07-09T05:56:27Z",
        "updated_at": "2020-07-09T05:56:27Z",
        "ethertype": "IPv6",
        "remote_ip_prefix": null,
        "multiport": null,
        "remote_address_group_id": null,
        "action": "allow",
        "priority": 100
      },
      {
        "id": "3d6480e8-9ea4-46dc-bb1b-8db190cd5677",
        "project_id": "060576782980d5762f9ec014dd2f1148",
        "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
        "remote_group_id": null,
        "direction": "egress",
        "protocol": null,
        "description": "",
        "created_at": "2020-07-09T05:56:27Z",
        "updated_at": "2020-07-09T05:56:27Z",
        "ethertype": "IPv6",
        "remote_ip_prefix": null,
        "multiport": null,
        "remote_address_group_id": null,
        "action": "allow",
        "priority": 100
      },
      {
        "id": "9581f18c-1fdd-43da-ace9-7758a56ef28a",
        "project_id": "060576782980d5762f9ec014dd2f1148",
        "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
        "remote_group_id": null,
        "direction": "egress",
        "protocol": null,
        "description": "",
        "created_at": "2020-07-09T05:56:27Z",

```

```

    "updated_at": "2020-07-09T05:56:27Z",
    "ethertype": "IPv4",
    "remote_ip_prefix": null,
    "multiport": null,
    "remote_address_group_id": null,
    "action": "allow",
    "priority": 100
  },
  {
    "id": "a3ba270e-e58b-432d-a912-aeb7eace9fb8",
    "project_id": "060576782980d5762f9ec014dd2f1148",
    "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "direction": "ingress",
    "protocol": null,
    "description": "",
    "created_at": "2020-07-09T05:56:27Z",
    "updated_at": "2020-07-09T05:56:27Z",
    "ethertype": "IPv4",
    "remote_ip_prefix": null,
    "multiport": null,
    "remote_address_group_id": null,
    "action": "allow",
    "priority": 100
  }
],
"created_at": "2020-07-09T05:56:27Z",
"updated_at": "2020-07-09T05:56:27Z"
},
"request_id": "a8cf4f79ca3c22ca685e7e8872e8c20b"
}

```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.2.4 Updating a Security Group

Function

This API is used to update a security group.

URI

PUT /v3/{project_id}/vpc/security-groups/{security_group_id}

Table 6-51 Parameter description

Parameter	Man dator y	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Parameter	Mandatory	Type	Description
security_group_id	Yes	String	Security group ID.

Request Parameter

Table 6-52 Request body parameter

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	Whether to only send the check request. The value can be: <ul style="list-style-type: none"> true: A check request will be sent and no security group will be updated. Check items include mandatory parameters, request format, and permission verification. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. false (default value): A request will be sent and a security group will be updated.
security_group	Yes	UpdateSecurityGroupOption object	Request body for updating a security group

Table 6-53 UpdateSecurityGroupOption

Parameter	Mandatory	Type	Description
name	No	String	Security group name The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).

Parameter	Man dator y	Type	Description
description	No	String	Provides supplementary information about the security group. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).

Example Request

- Change the name of the security group whose ID is 1d8b19c7-7c56-48f7-a99b-4b40eb390967 to **security_group_2** and its description to **modified description**.

```
PUT https://{Endpoint}/v3/{project_id}/vpc/security-groups/1d8b19c7-7c56-48f7-a99b-4b40eb390967"
```

```
{
  "security_group" : {
    "name" : "security_group_2",
    "description" : "modified description"
  }
}
```

Response Parameter

When the status code is **200**, the response parameters are as follows:

Table 6-54 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
security_group	SecurityGroupInfo object	Response body for updating a security group

Table 6-55 SecurityGroupInfo

Parameter	Type	Description
id	String	Security group ID, which uniquely identifies the security group The value is in UUID format with hyphens (-).
name	String	Security group name The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).

Parameter	Type	Description
description	String	Provides supplementary information about the security group. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
project_id	String	ID of the project to which the security group belongs
created_at	String	Time when the security group is created UTC time in the format of yyyy-MM-ddTHH:mmss
updated_at	String	Time when the security group is updated UTC time in the format of yyyy-MM-ddTHH:mmss
security_group_rules	Array of SecurityGroupRule objects	Security group rules

Table 6-56 SecurityGroupRule

Parameter	Type	Description
id	String	Security group rule ID, which uniquely identifies the security group rule The value is in UUID format with hyphens (-).
description	String	Provides supplementary information about the security group rule. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
security_group_id	String	ID of the security group to which the security group rule belongs.
direction	String	Inbound or outbound direction of a security group rule. The value can be: <ul style="list-style-type: none"> ● ingress: inbound direction ● egress: outbound direction

Parameter	Type	Description
protocol	String	<p>Protocol type</p> <p>The value can be icmp, tcp, udp, icmpv6 or an IP number.</p> <p>If the parameter is left blank, all protocols are supported. When the protocol is icmpv6, IP version should be IPv6. When the protocol is icmp, IP version should be IPv4.</p>
ethertype	String	<p>IP version</p> <p>The value can be IPv4 or IPv6.</p> <p>If you do not set this parameter, IPv4 is used by default.</p>
multiport	String	<p>Port or port range</p> <p>The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80).</p>
action	String	<p>Action of the security group rule.</p> <p>The value can be:</p> <ul style="list-style-type: none"> • allow • deny <p>The default value is deny.</p>
priority	Integer	<p>Rule priority.</p> <p>The value is from 1 to 100. The value 1 indicates the highest priority.</p>
remote_group_id	String	<p>ID of the remote security group, which allows or denies traffic to and from the security group.</p> <p>Value range: ID of an existing security group</p> <p>The parameter is mutually exclusive with parameters remote_ip_prefix and remote_address_group_id.</p>
remote_ip_prefix	String	<p>Remote IP address.</p> <ul style="list-style-type: none"> • If direction is set to egress, the parameter specifies the source IP address. • If direction is set to ingress, the parameter specifies the destination IP address. <p>The value is an IP address or a CIDR block.</p> <p>The parameter is mutually exclusive with parameters remote_group_id and remote_address_group_id.</p>

Parameter	Type	Description
remote_address_group_id	String	ID of the remote IP address group. Value range: ID of an existing IP address group The parameter is mutually exclusive with parameters remote_ip_prefix and remote_group_id .
created_at	String	Time when the security group rule is created UTC time in the format of yyyy-MM-ddTHH:mm:ss
updated_at	String	Time when the security group rule is updated UTC time in the format of yyyy-MM-ddTHH:mm:ss
project_id	String	ID of the project to which the security group rule belongs.

Example Response

When the status code is **200**, the response parameters are as follows:

OK

```
{
  "security_group": {
    "id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "name": "security_group_2",
    "project_id": "060576782980d5762f9ec014dd2f1148",
    "description": "modified description",
    "security_group_rules": [ {
      "id": "f11a3824-ac19-4fad-b4f1-c5f4a6dd0a80",
      "project_id": "060576782980d5762f9ec014dd2f1148",
      "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "direction": "ingress",
      "protocol": null,
      "description": "",
      "created_at": "2020-07-09T05:56:27Z",
      "updated_at": "2020-07-09T05:56:27Z",
      "ethertype": "IPv6",
      "remote_ip_prefix": null,
      "multiport": null,
      "remote_address_group_id": null,
      "action": "allow",
      "priority": 100
    }, {
      "id": "3d6480e8-9ea4-46dc-bb1b-8db190cd5677",
      "project_id": "060576782980d5762f9ec014dd2f1148",
      "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "remote_group_id": null,
      "direction": "egress",
      "protocol": null,
      "description": "",
      "created_at": "2020-07-09T05:56:27Z",
      "updated_at": "2020-07-09T05:56:27Z",
      "ethertype": "IPv6",
      "remote_ip_prefix": null,
      "multiport": null,
    }
  ]
}
```

```
"remote_address_group_id" : null,
"action" : "allow",
"priority" : 100
}, {
  "id" : "9581f18c-1fdd-43da-ace9-7758a56ef28a",
  "project_id" : "060576782980d5762f9ec014dd2f1148",
  "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
  "remote_group_id" : null,
  "direction" : "egress",
  "protocol" : null,
  "description" : "",
  "created_at" : "2020-07-09T05:56:27Z",
  "updated_at" : "2020-07-09T05:56:27Z",
  "ethertype" : "IPv4",
  "remote_ip_prefix" : null,
  "multiport" : null,
  "remote_address_group_id" : null,
  "action" : "allow",
  "priority" : 100
}, {
  "id" : "a3ba270e-e58b-432d-a912-aeb7eace9fb8",
  "project_id" : "060576782980d5762f9ec014dd2f1148",
  "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
  "remote_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
  "direction" : "ingress",
  "protocol" : null,
  "description" : "",
  "created_at" : "2020-07-09T05:56:27Z",
  "updated_at" : "2020-07-09T05:56:27Z",
  "ethertype" : "IPv4",
  "remote_ip_prefix" : null,
  "multiport" : null,
  "remote_address_group_id" : null,
  "action" : "allow",
  "priority" : 100
} ],
"created_at" : "2020-07-09T05:56:27Z",
"updated_at" : "2020-07-09T05:56:27Z"
},
"request_id" : "a8cf4f79ca3c22ca685e7e8872e8c20b"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.2.5 Deleting a Security Group

Function

This API is used to delete a security group.

Constraints

Before deleting a security group, ensure that the security group is not associated with any instance.

URI

DELETE /v3/{project_id}/vpc/security-groups/{security_group_id}

Table 6-57 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
security_group_id	Yes	String	Security group ID.

Request Parameter

None

Example Request

- Delete a single security group.
"DELETE https://{Endpoint}/v3/{project_id}/vpc/security-groups/1d8b19c7-7c56-48f7-a99b-4b40eb390967"

Response Parameter

When the status code is **400**, the response parameters are as follows:

Table 6-58 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

When the status code is **401**, the response parameters are as follows:

Table 6-59 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message

Parameter	Type	Description
error_code	String	Error code

When the status code is **403**, the response parameters are as follows:

Table 6-60 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

When the status code is **404**, the response parameters are as follows:

Table 6-61 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

When the status code is **409**, the response parameters are as follows:

Table 6-62 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
error_msg	String	Error message
error_code	String	Error code

When the status code is **500**, the response parameters are as follows:

Table 6-63 Response body parameters

Parameter	Type	Description
request_id	String	Request ID

Parameter	Type	Description
error_msg	String	Error message
error_code	String	Error code

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.3 Security Group Rule

6.3.1 Creating a Security Group Rule

Function

This API is used to create a security group rule.

URI

POST /v3/{project_id}/vpc/security-group-rules

Table 6-64 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameter

Table 6-65 Request body parameter

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	Whether to only send the check request. The value can be: <ul style="list-style-type: none"> true: A check request will be sent and no security group rule will be created. Check items include mandatory parameters, request format, and permission verification. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. false (default value): A request will be sent and a security group rule will be created.
security_group_rule	Yes	CreateSecurityGroupRuleOption object	Request body for creating a security group rule.

Table 6-66 CreateSecurityGroupRuleOption

Parameter	Mandatory	Type	Description
security_group_id	Yes	String	ID of the security group to which the security group rule belongs.
description	No	String	Provides supplementary information about the security group. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
direction	Yes	String	Inbound or outbound direction of a security group rule. The value can be: <ul style="list-style-type: none"> ingress: inbound direction egress: outbound direction

Parameter	Mandatory	Type	Description
ethertype	No	String	IP version The value can be IPv4 or IPv6 . If you do not set this parameter, IPv4 is used by default.
protocol	No	String	Protocol type The value can be icmp , tcp , udp , icmpv6 or an IP number (0 to 255). Constraints: <ul style="list-style-type: none"> • If the parameter is left blank, all protocols are supported. • When the protocol is icmpv6, IP version should be IPv6. • When the protocol is icmp, IP version should be IPv4.
multiport	No	String	Port or port range The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80). The port is from 1 to 65535.
remote_ip_prefix	No	String	Remote IP address. If direction is set to egress , the parameter specifies the source IP address. If direction is set to ingress , the parameter specifies the destination IP address. The value is an IP address or a CIDR block. Constraints: <ul style="list-style-type: none"> • The parameter is mutually exclusive with parameters remote_group_id and remote_address_group_id. • If this parameter is left blank, the remote IP address is not limited, and the traffic from all remote IP addresses is allowed or rejected.

Parameter	Mandatory	Type	Description
remote_group_id	No	String	ID of the remote security group, which allows or denies traffic to and from the security group. Value range: ID of an existing security group The parameter is mutually exclusive with parameters remote_ip_prefix and remote_address_group_id .
remote_address_group_id	No	String	ID of the remote IP address group. Value range: ID of an existing IP address group The parameter is mutually exclusive with parameters remote_ip_prefix and remote_group_id .
action	No	String	Action of the security group rule. The value can be: <ul style="list-style-type: none"> allow deny The default value is allow .
priority	No	String	Rule priority in a security group. The value is from 1 to 100 . The value 1 indicates the highest priority. The default value is 1 .

Example Request

- Create an inbound rule in the security group whose ID is 1c8d9f94-6022-4518-bb98-e0145fcc7b33.

POST https://{Endpoint}/v3/{project_id}/vpc/security-group-rules

```
{
  "security_group_rule": {
    "security_group_id": "1c8d9f94-6022-4518-bb98-e0145fcc7b33",
    "direction": "ingress",
    "protocol": "tcp",
    "description": "security group rule description",
    "action": "allow",
    "priority": 1,
    "multiport": "33",
    "remote_ip_prefix": "10.10.0.0/16"
  }
}
```

Response Parameter

When the status code is **201**, the response parameters are as follows:

Table 6-67 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
security_group_rule	SecurityGroupRule object	Response body for creating a security group rule.

Table 6-68 SecurityGroupRule

Parameter	Type	Description
id	String	Security group rule ID, which uniquely identifies the security group rule The value is in UUID format with hyphens (-).
description	String	Provides supplementary information about the security group. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
security_group_id	String	ID of the security group to which the security group rule belongs.
direction	String	Inbound or outbound direction of a security group rule. The value can be: <ul style="list-style-type: none"> • ingress: inbound direction • egress: outbound direction
protocol	String	Protocol type The value can be icmp , tcp , udp , icmpv6 or an IP number. Constraints: <ul style="list-style-type: none"> • If the parameter is left blank, all protocols are supported. • When the protocol is icmpv6, IP version should be IPv6. • When the protocol is icmp, IP version should be IPv4.
ethertype	String	IP version The value can be IPv4 or IPv6 . If you do not set this parameter, IPv4 is used by default.

Parameter	Type	Description
multiport	String	Port or port range The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80).
action	String	Action of the security group rule. The value can be: <ul style="list-style-type: none"> • allow • deny The default value is deny .
priority	Integer	Rule priority. The value is from 1 to 100 . The value 1 indicates the highest priority.
remote_group_id	String	ID of the remote security group, which allows or denies traffic to and from the security group. Value range: ID of an existing security group The parameter is mutually exclusive with parameters remote_ip_prefix and remote_address_group_id .
remote_ip_prefix	String	Remote IP address. If direction is set to egress , the parameter specifies the source IP address. If direction is set to ingress , the parameter specifies the destination IP address. The value is an IP address or a CIDR block. Constraints: <ul style="list-style-type: none"> • The parameter is mutually exclusive with parameters remote_group_id and remote_address_group_id. • If this parameter is left blank, the remote IP address is not limited, and the traffic from all remote IP addresses is allowed or rejected.
remote_address_group_id	String	ID of the remote IP address group. Value range: ID of an existing IP address group The parameter is mutually exclusive with parameters remote_ip_prefix and remote_group_id .
created_at	String	Time when the security group rule is created UTC time in the format of yyyy-MM-ddTHH:mm:ss

Parameter	Type	Description
updated_at	String	Time when the security group rule is updated UTC time in the format of yyyy-MM-ddTHH:mmss
project_id	String	ID of the project to which the security group rule belongs.

Example Response

When the status code is **201**, the response parameters are as follows:

```
{
  "request_id": "1666b2708aaf849337572d6846dce781",
  "security_group_rule": {
    "id": "f626eb24-d8bd-4d26-ae0b-c16bb65730cb",
    "project_id": "060576782980d5762f9ec014dd2f1148",
    "security_group_id": "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
    "remote_group_id": null,
    "direction": "ingress",
    "protocol": "tcp",
    "description": "security group rule description",
    "created_at": "2020-08-13T07:12:36Z",
    "updated_at": "2020-08-13T07:12:36Z",
    "ethertype": "IPv4",
    "remote_ip_prefix": "10.10.0.0/16",
    "multiport": "33",
    "remote_address_group_id": null,
    "action": "allow",
    "priority": 1
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.3.2 Querying Security Group Rules

Function

This API is used to query security group rules.

URI

GET /v3/{project_id}/vpc/security-group-rules

Table 6-69 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Table 6-70 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of records displayed on each page. Value range: 0 to 2000
marker	No	String	Start resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried.
id	No	Array of strings	ID of the security group rule. Multiple IDs can be specified for filtering.
security_group_id	No	Array of strings	ID of the security group to which the security group rule belongs. Multiple IDs can be specified for filtering.
protocol	No	Array of strings	Protocol specified in the security group rule. Multiple protocols can be specified for filtering.
description	No	Array of strings	Provides supplementary information about the security group. This field can be used to precisely filter security groups. Multiple descriptions can be specified for filtering.
remote_group_id	No	Array of strings	ID of the remote security group. Multiple IDs can be specified for filtering.
direction	No	String	Access control direction specified in the security group rule.
action	No	String	Action of the security group rule.

Request Parameter

None

Example Request

- Query security group rules.
"GET https://{Endpoint}/v3/{project_id}/vpc/security-group-rules"

Response Parameter

When the status code is **200**, the response parameters are as follows:

Table 6-71 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
security_group_rules	Array of SecurityGroupRule objects	Response body of security group rules
page_info	PageInfo object	Pagination information

Table 6-72 SecurityGroupRule

Parameter	Type	Description
id	String	Security group rule ID, which uniquely identifies the security group rule The value is in UUID format with hyphens (-).
description	String	Provides supplementary information about the security group. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
security_group_id	String	ID of the security group to which the security group rule belongs.
direction	String	Inbound or outbound direction of a security group rule. The value can be: <ul style="list-style-type: none"> ingress: inbound direction egress: outbound direction

Parameter	Type	Description
protocol	String	<p>Protocol type</p> <p>The value can be icmp, tcp, udp, icmpv6 or an IP number.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the parameter is left blank, all protocols are supported. • When the protocol is icmpv6, IP version should be IPv6. • When the protocol is icmp, IP version should be IPv4.
ethertype	String	<p>IP version</p> <p>The value can be IPv4 or IPv6.</p> <p>If you do not set this parameter, IPv4 is used by default.</p>
multiport	String	<p>Port or port range</p> <p>The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80).</p>
action	String	<p>Action of the security group rule.</p> <p>The value can be:</p> <ul style="list-style-type: none"> • allow • deny <p>The default value is deny.</p>
priority	Integer	<p>Rule priority.</p> <p>The value is from 1 to 100. The value 1 indicates the highest priority.</p>
remote_group_id	String	<p>ID of the remote security group, which allows or denies traffic to and from the security group.</p> <p>Value range: ID of an existing security group</p> <p>The parameter is mutually exclusive with parameters remote_ip_prefix and remote_address_group_id.</p>

Parameter	Type	Description
remote_ip_prefix	String	<p>Remote IP address.</p> <ul style="list-style-type: none"> If direction is set to egress, the parameter specifies the source IP address. If direction is set to ingress, the parameter specifies the destination IP address. <p>The value is an IP address or a CIDR block.</p> <p>Constraints:</p> <ul style="list-style-type: none"> The parameter is mutually exclusive with parameters remote_group_id and remote_address_group_id. If this parameter is left blank, the remote IP address is not limited, and the traffic from all remote IP addresses is allowed or rejected.
remote_address_group_id	String	<p>ID of the remote IP address group.</p> <p>Value range: ID of an existing IP address group</p> <p>The parameter is mutually exclusive with parameters remote_ip_prefix and remote_group_id.</p>
created_at	String	Time when the security group rule is created UTC time in the format of yyyy-MM-ddTHH:mmss
updated_at	String	Time when the security group rule is updated UTC time in the format of yyyy-MM-ddTHH:mmss
project_id	String	ID of the project to which the security group rule belongs.

Table 6-73 PageInfo

Parameter	Type	Description
previous_marker	String	First record on the current page
current_count	Integer	Total number of records on the current page
next_marker	String	Last record on the current page. This parameter does not exist if the page is the last one.

Example Response

When the status code is **200**, the response parameters are as follows:

```
OK
{
  "request_id": "80747d36e3376c0894ba8f9a9156355d",
  "security_group_rules": [
    {
      "id": "f626eb24-d8bd-4d26-ae0b-c16bb65730cb",
      "project_id": "060576782980d5762f9ec014dd2f1148",
      "security_group_id": "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
      "remote_group_id": null,
      "direction": "ingress",
      "protocol": "tcp",
      "description": "security group rule description",
      "created_at": "2020-08-13T07:12:36Z",
      "updated_at": "2020-08-13T07:12:36Z",
      "ethertype": "IPv4",
      "remote_ip_prefix": "10.10.0.0/16",
      "multiport": "333",
      "remote_address_group_id": null,
      "action": "allow",
      "priority": 1
    }
  ]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.3.3 Querying a Security Group Rule

Function

This API is used to query details about a security group rule.

URI

GET /v3/{project_id}/vpc/security-group-rules/{security_group_rule_id}

Table 6-74 Parameter description

Parameter	Man dator y	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
security_grou p_rule_id	Yes	String	Security group rule ID.

Request Parameter

None

Example Request

- Query details about a security group rule.
"GET https://{Endpoint}/v3/{project_id}/vpc/security-group-rules/01a772b2-463e-47e3-a95d-bac85ee8adc6"

Response Parameter

When the status code is **200**, the response parameters are as follows:

Table 6-75 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
security_group_rule	SecurityGroupRule object	Response body for querying details about a security group rule

Table 6-76 SecurityGroupRule

Parameter	Type	Description
id	String	Security group rule ID, which uniquely identifies the security group rule The value is in UUID format with hyphens (-).
description	String	Provides supplementary information about the security group. The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
security_group_id	String	ID of the security group to which the security group rule belongs.
direction	String	Inbound or outbound direction of a security group rule. The value can be: <ul style="list-style-type: none">• ingress: inbound direction• egress: outbound direction

Parameter	Type	Description
protocol	String	<p>Protocol type</p> <p>The value can be icmp, tcp, udp, icmpv6 or an IP number.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the parameter is left blank, all protocols are supported. • When the protocol is icmpv6, IP version should be IPv6. • When the protocol is icmp, IP version should be IPv4.
ethertype	String	<p>IP version</p> <p>The value can be IPv4 or IPv6.</p> <p>If you do not set this parameter, IPv4 is used by default.</p>
multiport	String	<p>Port or port range</p> <p>The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80).</p>
action	String	<p>Action of the security group rule.</p> <p>The value can be:</p> <ul style="list-style-type: none"> • allow • deny <p>The default value is deny.</p>
priority	Integer	<p>Rule priority.</p> <p>The value is from 1 to 100. The value 1 indicates the highest priority.</p>
remote_group_id	String	<p>ID of the remote security group, which allows or denies traffic to and from the security group.</p> <p>Value range: ID of an existing security group</p> <p>The parameter is mutually exclusive with parameters remote_ip_prefix and remote_address_group_id.</p>

Parameter	Type	Description
remote_ip_prefix	String	Remote IP address. <ul style="list-style-type: none"> If direction is set to egress, the parameter specifies the source IP address. If direction is set to ingress, the parameter specifies the destination IP address. The value is an IP address or a CIDR block. Constraints: <ul style="list-style-type: none"> The parameter is mutually exclusive with parameters remote_group_id and remote_address_group_id. If this parameter is left blank, the remote IP address is not limited, and the traffic from all remote IP addresses is allowed or rejected.
remote_address_group_id	String	ID of the remote IP address group. Value range: ID of an existing IP address group The parameter is mutually exclusive with parameters remote_ip_prefix and remote_group_id .
created_at	String	Time when the security group rule is created UTC time in the format of yyyy-MM-ddTHH:mmss
updated_at	String	Time when the security group rule is updated UTC time in the format of yyyy-MM-ddTHH:mmss
project_id	String	ID of the project to which the security group rule belongs.

Example Response

When the status code is **200**, the response parameters are as follows:

OK

```
{
  "security_group_rule": {
    "id": "f626eb24-d8bd-4d26-ae0b-c16bb65730cb",
    "project_id": "060576782980d5762f9ec014dd2f1148",
    "security_group_id": "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
    "remote_group_id": null,
    "direction": "ingress",
    "protocol": "tcp",
    "description": "security group rule description",
    "created_at": "2020-08-13T07:12:36Z",
    "updated_at": "2020-08-13T07:12:36Z",
    "ethertype": "IPv4",
    "remote_ip_prefix": "10.10.0.0/16",
    "multiport": "333",
```

```
"remote_address_group_id": null,  
"action": "allow",  
"priority": 1  
},  
"request_id": "034c4840bde0b1263a4b2e66fbd74d5f"  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.3.4 Deleting a Security Group Rule

Function

This API is used to delete a security group rule.

URI

DELETE /v3/{project_id}/vpc/security-group-rules/{security_group_rule_id}

Table 6-77 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
security_group_rule_id	Yes	String	Security group rule ID.

Request Parameter

None

Example Request

- Delete a single security group rule.
"DELETE https://{Endpoint}/v3/{project_id}/vpc/security-group-rules/01a772b2-463e-47e3-a95d-bac85ee8adc6"

Response Parameter

None

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.4 IP Address Group

6.4.1 Creating an IP Address Group

Function

This API is used to create an IP address group.

Constraints

The default IP address group quota for each account is 50.

URI

POST /v3/{project_id}/vpc/address-groups

Table 6-78 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameter

Table 6-79 Request body parameter

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	<ul style="list-style-type: none"> Whether to only send the check request. The value can be: <ul style="list-style-type: none"> true: A check request will be sent and no IP address group will be created. Check items include mandatory parameters, request format, and permission verification. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. false (default value): A request will be sent and an IP address group will be created.
address_group	Yes	CreateAddressGroupOption object	Request body for creating an IP address group.

Table 6-80 CreateAddressGroupOption

Parameter	Mandatory	Type	Description
name	Yes	String	<ul style="list-style-type: none"> IP address group name. The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	No	String	<ul style="list-style-type: none"> Provides supplementary information about an IP address group. The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Parameter	Mandatory	Type	Description
ip_version	Yes	Integer	<ul style="list-style-type: none"> The IP version of the address group. The value can be: <ul style="list-style-type: none"> 4: IPv4 address group. 6: IPv6 address group.
ip_set	No	Array of strings	<ul style="list-style-type: none"> IP address sets in an IP address group. The value can be a single IP address, IP address range, or CIDR block. The default maximum number of IP address sets, including IP addresses, IP address ranges, and CIDR blocks, in an IP address group is 20.

Example Request

- Create an IP address group named **AutoTester746010.580123789**, set the IP version to IPv4, and the IP set to 192.168.3.2, 192.168.3.40, 192.168.3.20-192.168.3.100, and 192.168.5.0/24.

POST https://{{endpoint}}/v3/b2782e6708b8475c993e6064bc456bf8/vpc/address-groups

```
{
  "address_group": {
    "ip_version": 4,
    "name": "AutoTester746010.580123789",
    "ip_set": [
      "192.168.3.2",
      "192.168.3.40",
      "192.168.3.20-192.168.3.100",
      "192.168.5.0/24"
    ],
    "description": "test"
  }
}
```

Response Parameter

When the status code is **201**, the response parameters are as follows:

Table 6-81 Response body parameters

Parameter	Type	Description
request_id	String	Request ID.
address_group	AddressGroup object	Response body for creating an IP address group.

Table 6-82 AddressGroup

Parameter	Type	Description
id	String	<ul style="list-style-type: none"> IP address group ID that uniquely identifies the IP address group. The value is a string in UUID format.
name	String	<ul style="list-style-type: none"> IP address group name. The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	<ul style="list-style-type: none"> Provides supplementary information about an IP address group. The value can contain up to 255 characters. The value cannot contain angle brackets (< or >).
ip_set	Array of strings	<ul style="list-style-type: none"> IP address sets in an IP address group. The value can be a single IP address, IP address range, or CIDR block. The default maximum number of IP address sets, including IP addresses, IP address ranges, and CIDR blocks, in an IP address group is 20.
ip_version	Integer	<ul style="list-style-type: none"> Whether it is an IPv4 or IPv6 address group. The value can be: <ul style="list-style-type: none"> 4: IPv4 address group. 6: IPv6 address group.
created_at	String	<ul style="list-style-type: none"> Time (UTC) when the IP address group is created. The value must be the UTC time in the format of yyyy-MM-ddTHH:mmss.
updated_at	String	<ul style="list-style-type: none"> Time (UTC) when the IP address group was last updated. The value must be the UTC time in the format of yyyy-MM-ddTHH:mmss.
tenant_id	String	<ul style="list-style-type: none"> ID of the project to which the IP address group belongs.

Example Response

When the status code is **201**, the response parameters are as follows:

Normal response for the POST operation of the API for creating an IP address group

```
{
  "address_group": {
    "id": "dd18a501-fcd5-4adc-acfe-b0e2384baf08",
    "name": "AutoTester746010.580123789",
    "tenant_id": "b2782e6708b8475c993e6064bc456bf8",
    "ip_version": 4,
    "ip_set": [
      "192.168.5.0/24",
      "192.168.3.20-192.168.3.100",
      "192.168.3.40",
      "192.168.3.2"
    ],
    "created_at": "2019-06-28T02:06:38",
    "updated_at": "2019-06-28T02:06:38",
    "description": "test"
  },
  "request_id": "f568db7a-2675-4271-8747-3e3f1c6381ba"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.4.2 Querying IP Address Groups

Function

This API is used to query IP address groups based on filter criteria.

URI

GET /v3/{project_id}/vpc/address-groups

Table 6-83 Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Table 6-84 Query parameters

Parameter	Man dator y	Type	Description
limit	No	Integer	Number of records displayed on each page. Value range: 0 to 2000
marker	No	String	Start resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried.
id	No	Array of strings	Unique ID of an IP address group, which can be used to filter the IP address group.
name	No	Array of strings	Name of an IP address group, which can be used to filter the IP address group.
ip_version	No	Integer	Version of IP addresses in an IP address group. The value can be 4 or 6 .
description	No	Array of strings	Provides supplementary information about an IP address group, which can be used to filter the IP address group.

Request Parameter

None

Example Request

- Query IP address groups based on combined filtering criteria
"GET https://{{endpoint}}/v3/b2782e6708b8475c993e6064bc456bf8/vpc/address-groups?name=vkvgykvsvhjaaaa1&description=xxxxxxxx&ip_version=4"

Response Parameter

When the status code is **200**, the response parameters are as follows:

Table 6-85 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
address_groups	Array of AddressGroup objects	Response body of IP address groups

Parameter	Type	Description
page_info	PageInfo object	Pagination information

Table 6-86 AddressGroup

Parameter	Type	Description
id	String	<ul style="list-style-type: none"> IP address group ID that uniquely identifies the IP address group. The value is a string in UUID format.
name	String	<ul style="list-style-type: none"> IP address group name. The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	<ul style="list-style-type: none"> Provides supplementary information about an IP address group. The value can contain up to 255 characters. The value cannot contain angle brackets (< or >).
ip_set	Array of strings	<ul style="list-style-type: none"> IP address sets in an IP address group. The value can be a single IP address, IP address range, or CIDR block. The default maximum number of IP address sets, including IP addresses, IP address ranges, and CIDR blocks, in an IP address group is 20.
ip_version	Integer	<ul style="list-style-type: none"> Whether it is an IPv4 or IPv6 address group. The value can be: <ul style="list-style-type: none"> 4: IPv4 address group. 6: IPv6 address group.
created_at	String	<ul style="list-style-type: none"> Time (UTC) when the IP address group is created. The value must be the UTC time in the format of yyyy-MM-ddTHH:mm:ss.
updated_at	String	<ul style="list-style-type: none"> Time (UTC) when the IP address group was last updated. The value must be the UTC time in the format of yyyy-MM-ddTHH:mm:ss.
tenant_id	String	<ul style="list-style-type: none"> ID of the project to which the IP address group belongs.

Table 6-87 PageInfo

Parameter	Type	Description
previous_marker	String	First record on the current page
current_count	Integer	Total number of records on the current page
next_marker	String	Last record on the current page. This parameter does not exist if the page is the last one.

Example Response

When the status code is **200**, the response parameters are as follows:

Normal response for the GET operation of the API for querying an IP address group

```
{
  "address_groups": [
    {
      "id": "dd18a501-fcd5-4adc-acfe-b0e2384baf08",
      "name": "AutoTester746010.580123789",
      "tenant_id": "b2782e6708b8475c993e6064bc456bf8",
      "ip_version": 4,
      "ip_set": [
        "192.168.5.0/24",
        "192.168.3.20-192.168.3.100",
        "192.168.3.40",
        "192.168.3.2"
      ],
      "created_at": "2019-06-28T02:06:38",
      "updated_at": "2019-06-28T02:06:38",
      "description": "test"
    }
  ],
  "page_info": {
    "previous_marker": "dd18a501-fcd5-4adc-acfe-b0e2384baf08",
    "current_count": 1
  },
  "request_id": "e51fa17c-3259-4122-afb1-9c03d4ef5408"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.4.3 Querying Details of an IP Address Group

Function

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

URI

GET /v3/{project_id}/vpc/address-groups/{address_group_id}

Table 6-88 Parameter description

Parameter	Mandatory	Type	Description
address_group_id	Yes	String	IP address group ID that uniquely identifies the IP address group.
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameter

None

Example Request

- Querying details of an IP address group
"GET https://{Endpoint}/v3/2bc7a67b35a64a79ad1d3bb8b5f61fc9/vpc/address-groups/dd18a501-fcd5-4adc-acfe-b0e2384baf08"

Response Parameter

When the status code is **200**, the response parameters are as follows:

Table 6-89 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
address_group	AddressGroup object	Response body of querying an IP address group

Table 6-90 AddressGroup

Parameter	Type	Description
id	String	<ul style="list-style-type: none"> IP address group ID that uniquely identifies the IP address group. The value is a string in UUID format.

Parameter	Type	Description
name	String	<ul style="list-style-type: none"> IP address group name. The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	<ul style="list-style-type: none"> Provides supplementary information about an IP address group. The value can contain up to 255 characters. The value cannot contain angle brackets (< or >).
ip_set	Array of strings	<ul style="list-style-type: none"> IP address sets in an IP address group. The value can be a single IP address, IP address range, or CIDR block. The default maximum number of IP address sets, including IP addresses, IP address ranges, and CIDR blocks, in an IP address group is 20.
ip_version	Integer	<ul style="list-style-type: none"> Whether it is an IPv4 or IPv6 address group. The value can be: <ul style="list-style-type: none"> 4: IPv4 address group. 6: IPv6 address group.
created_at	String	<ul style="list-style-type: none"> Time (UTC) when the IP address group is created. The value must be the UTC time in the format of yyyy-MM-ddTHH:mm:ss.
updated_at	String	<ul style="list-style-type: none"> Time (UTC) when the IP address group was last updated. The value must be the UTC time in the format of yyyy-MM-ddTHH:mm:ss.
tenant_id	String	<ul style="list-style-type: none"> ID of the project to which the IP address group belongs.

Example Response

When the status code is **200**, the response parameters are as follows:

Normal response for the GET operation of the API for querying an IP address group

```
{
  "address_group": {
    "id": "dd18a501-fcd5-4adc-acfe-b0e2384baf08",
    "name": "AutoTester746010.580123789",
    "tenant_id": "b2782e6708b8475c993e6064bc456bf8",
    "ip_version": 4,
    "ip_set": [
```

```
    "192.168.5.0/24",  
    "192.168.3.20-192.168.3.100",  
    "192.168.3.40",  
    "192.168.3.2"  
  ],  
  "created_at": "2019-06-28T02:06:38",  
  "updated_at": "2019-06-28T02:06:38",  
  "description": "10.10.4.0/23"  
},  
"request_id": "ce6c359b-9002-41e5-a0b1-232759bd6637"  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.4.4 Updating an IP Address Group

Function

This API is used to update an IP address group.

URI

PUT /v3/{project_id}/vpc/address-groups/{address_group_id}

Table 6-91 Parameter description

Parameter	Mandatory	Type	Description
address_group_id	Yes	String	IP address group ID that uniquely identifies the IP address group.
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameter

Table 6-92 Request body parameter

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	<ul style="list-style-type: none"> Whether to only send the check request. The value can be: <ul style="list-style-type: none"> true: A check request will be sent and no IP address group will be updated. Check items include mandatory parameters, request format, and permission verification. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. false (default value): A request will be sent and an IP address group will be updated.
address_group	Yes	UpdateAddressGroupOption object	Request body for updating an IP address group.

Table 6-93 UpdateAddressGroupOption

Parameter	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none"> IP address group name. The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	No	String	<ul style="list-style-type: none"> Provides supplementary information about the IP address group. The value can contain up to 255 characters. The value cannot contain angle brackets (< or >).

Parameter	Man dator y	Type	Description
ip_set	No	Array of strings	<ul style="list-style-type: none"> IP address sets in an IP address group. The value can be a single IP address, IP address range, or CIDR block. The default maximum number of IP address sets, including IP addresses, IP address ranges, and CIDR blocks, in an IP address group is 20.

Example Request

- Change the name, IP set, and description of the IP address group whose ID is dd18a501-fcd5-4adc-acfe-b0e2384baf08.

```
"PUT https://{endpoint}/v3/b2782e6708b8475c993e6064bc456bf8/vpc/address-groups/dd18a501-fcd5-4adc-acfe-b0e2384baf08"
```

```
{
  "address_group": {
    "name": "vkvgykvsvhjaaaa1",
    "ip_set": [
      "192.168.3.2",
      "192.168.3.43",
      "192.168.3.20-192.168.3.100",
      "192.168.5.0/24"
    ],
    "description": "xxxxxxxxxx"
  }
}
```

Response Parameter

When the status code is **200**, the response parameters are as follows:

Table 6-94 Response body parameters

Parameter	Type	Description
request_id	String	Request ID
address_grou p	AddressGrou p object	Response body for updating an IP address group

Table 6-95 AddressGroup

Parameter	Type	Description
id	String	<ul style="list-style-type: none"> IP address group ID that uniquely identifies the IP address group. The value is a string in UUID format.
name	String	<ul style="list-style-type: none"> IP address group name. The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	<ul style="list-style-type: none"> Provides supplementary information about an IP address group. The value can contain up to 255 characters. The value cannot contain angle brackets (< or >).
ip_set	Array of strings	<ul style="list-style-type: none"> IP address sets in an IP address group. The value can be a single IP address, IP address range, or CIDR block. The default maximum number of IP address sets, including IP addresses, IP address ranges, and CIDR blocks, in an IP address group is 20.
ip_version	Integer	<ul style="list-style-type: none"> Whether it is an IPv4 or IPv6 address group. The value can be: <ul style="list-style-type: none"> 4: IPv4 address group. 6: IPv6 address group.
created_at	String	<ul style="list-style-type: none"> Time (UTC) when the IP address group is created. The value must be the UTC time in the format of yyyy-MM-ddTHH:mm:ss.
updated_at	String	<ul style="list-style-type: none"> Time (UTC) when the IP address group was last updated. The value must be the UTC time in the format of yyyy-MM-ddTHH:mm:ss.
tenant_id	String	<ul style="list-style-type: none"> ID of the project to which the IP address group belongs.

Example Response

When the status code is **200**, the response parameters are as follows:

Normal response for the PUT operation of the API for updating an IP address group

```
{
  "address_group": {
    "id": "dd18a501-fcd5-4adc-acfe-b0e2384baf08",
    "name": "vkvgykvsvhjaaaa1",
    "tenant_id": "b2782e6708b8475c993e6064bc456bf8",
    "ip_version": 4,
    "ip_set": [
      "192.168.5.0/24",
      "192.168.3.20-192.168.3.100",
      "192.168.3.43",
      "192.168.3.2"
    ],
    "created_at": "2019-06-28T02:06:38",
    "updated_at": "2019-06-28T02:14:01",
    "description": "xxxxxxxxxx"
  },
  "request_id": "5bbd1640-fa68-4362-9a5c-30c4809958e0"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.4.5 Deleting an IP Address Group

Function

This API is used to delete an IP address group. Before deleting an IP address group, ensure that no resource is using this group.

URI

DELETE /v3/{project_id}/vpc/address-groups/{address_group_id}

Table 6-96 Parameter description

Parameter	Man dator y	Type	Description
address_grou p_id	Yes	String	IP address group ID that uniquely identifies the IP address group.
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameter

None

Example Request

- Deleting an IP address group
"DELETE https://{{endpoint}}/v3/{{tenant_id}}/vpc/address-groups/dd18a501-fcd5-4adc-acfe-b0e2384baf08"

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

6.4.6 Forcibly Deleting an IP Address Group

Function

This API is used to forcibly delete an IP address group. If the IP address group to be deleted has associated security group rules, the IP address group and its associated rules will be deleted together.

URI

DELETE /v3/{project_id}/vpc/address-groups/{address_group_id}/force

Table 6-97 Parameter description

Parameter	Mandatory	Type	Description
address_group_id	Yes	String	ID of the IP address group to be deleted. It uniquely identifies an IP address group.
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Request Parameter

None

Example Request

- Forcibly deleting an IP address group
"DELETE https://{{endpoint}}/v3/{{tenant_id}}/vpc/address-groups/dd18a501-fcd5-4adc-acfe-b0e2384baf08/force"

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7 Native OpenStack Neutron APIs (V2.0)

7.1 API Version Information

7.1.1 Querying API Versions

Function

This API is used to query all available versions of a native OpenStack API.

URI

GET /

Request Parameters

None

Example Request

```
GET https://{Endpoint}/
```

Response Parameters

Table 7-1 Response parameter

Parameter	Type	Description
versions	Array of version objects	Specifies the API version list. For details, see Table 7-2 .

Table 7-2 version objects

Parameter	Type	Description
status	String	Specifies the API version status. Possible values are as follows: <ul style="list-style-type: none">• CURRENT• STABLE• DEPRECATED
id	String	Specifies the API version.
links	Array of link objects	Specifies the link list. For details, see Table 7-3 .

Table 7-3 link objects

Parameter	Type	Description
href	String	Specifies the API link.
rel	String	Specifies the relationship between the API link and the API version.

Example Response

```
{
  "versions": [
    {
      "status": "CURRENT",
      "id": "v2.0",
      "links": [
        {
          "href": "https://{Endpoint}/v2.0",
          "rel": "self"
        }
      ]
    }
  ]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.1.2 Pagination

Function

Neutron APIs v2.0 provides the pagination function. You can set parameters **limit** and **marker** in the URL to enable the desired number of items to be returned. All returned items are displayed in the ascending order of ID.

- To access the next page of the request, perform the following configurations:
 - Replace the value of **marker** in the original access request URL. Replace the value of **marker** to the value of **marker** in the value of **href** if the value of **rel** in the response is **next**.
 - Set the value of **page_reverse** to **False**.
- To access the previous page of the request, perform the following configurations:
 - Replace the value of **marker** in the original access request URL. Replace the value of **marker** to the value of **marker** in the value of **href** if the value of **rel** in the response is **previous**.
 - Set the value of **page_reverse** to **True**.

Request Parameters

Table 7-4 Request parameter

Parameter	Type	Mandatory	Description
limit	Integer	No	Specifies the number of items displayed per page.
marker	String	No	Specifies the ID of the last item in the previous list. If the marker value is invalid, error code 400 will be returned.
page_reverse	Boolean	No	Specifies the page direction. The value can be True or False .

Example Request

- When **page_reverse** is set to **False**:

```
GET https://{Endpoint}/v2.0/networks?limit=2&marker=3d42a0d4-a980-4613-ae76-a2cddecff054&page_reverse=False
```

- When **page_reverse** is set to **True**:

```
GET https://{Endpoint}/v2.0/vpc/peerings?limit=2&marker=e5a0c88e-228e-4e62-a8b0-90825b1b7958&page_reverse=True
```

Response Parameters

Table 7-5 Response parameter

Parameter	Type	Description
{resources}_links	Array of {resources}_link objects	Specifies the pagination information. For details, see Table 7-6 . {resources} indicates the resource name, for example, ports , networks , subnets , routers , firewall_rules , firewall_policies , firewall_groups , security_groups , and security_group_rules . Only when limit is used for filtering and the number of resources exceeds the value of limit or 2000 (default value of limit), value next will be returned for rel and a link for href .

Table 7-6 {resources}_link object

Parameter	Type	Description
href	String	Specifies the API link.
rel	String	The API link is used to query the next or previous page. next : The next page is queried. previous : The previous page is queried.

Example Response

- When **page_reverse** is set to **False**:

```
{
  "networks": [
    {
      "status": "ACTIVE",
      "subnets": [],
      "name": "liudongtest ",
      "admin_state_up": false,
      "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
      "id": "60c809cb-6731-45d0-ace8-3bf5626421a9"
    },
    {
      "status": "ACTIVE",
      "subnets": [
        "132dc12d-c02a-4c90-9cd5-c31669aace04"
      ],
      "name": "publicnet",
      "admin_state_up": true,
      "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
      "id": "9daeac7c-a98f-430f-8e38-67f9c044e299"
    }
  ],
  "networks_links": [
```

```
{
  "href": "http://192.168.82.231:9696/v2.0/networks?limit=2&marker=9daec7c-
a98f-430f-8e38-67f9c044e299",
  "rel": "next"
},
{
  "href": "http://192.168.82.231:9696/v2.0/networks?limit=2&marker=60c809cb-6731-45d0-
ace8-3bf5626421a9&page_reverse=True",
  "rel": "previous"
}
]
```

- When **page_reverse** is set to **True**:

```
{
  "peerings_links": [
    {
      "marker": "dd442819-5638-401c-bd48-a82703cf0464",
      "rel": "next"
    },
    {
      "marker": "1e13cbaf-3ce4-413d-941f-66d855dbfa7f",
      "rel": "previous"
    }
  ],
  "peerings": [
    {
      "status": "ACTIVE",
      "accept_vpc_info": {
        "vpc_id": "83a48834-b9bc-4f70-aa46-074568594650",
        "tenant_id": "e41a43bf06e249678413c6d61536eff9"
      },
      "request_vpc_info": {
        "vpc_id": "db8e7687-e43b-4fc1-94cf-16f69f484d6d",
        "tenant_id": "e41a43bf06e249678413c6d61536eff9"
      },
      "name": "peering1",
      "id": "1e13cbaf-3ce4-413d-941f-66d855dbfa7f"
    },
    {
      "status": "ACTIVE",
      "accept_vpc_info": {
        "vpc_id": "83a48834-b9bc-4f70-aa46-074568594650",
        "tenant_id": "e41a43bf06e249678413c6d61536eff9"
      },
      "request_vpc_info": {
        "vpc_id": "bd63cc9e-e7b8-4d4e-a0e9-055031470ffc",
        "tenant_id": "e41a43bf06e249678413c6d61536eff9"
      },
      "name": "peering2",
      "id": "dd442819-5638-401c-bd48-a82703cf0464"
    }
  ]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.2 Port

7.2.1 Querying Ports

Function

Queries all networks accessible to the tenant submitting the request.

URI

GET /v2.0/ports

Example:

```
GET https://{Endpoint}/v2.0/ports?
id={port_id}&name={port_name}&admin_state_up={is_admin_status_up}&network_id={network_id}&mac_ad
dress={port_mac}&device_id={port_device_id}&device_owner={device_owner}&tenant_id={tenant_id}&status
={port_status}&fixed_ips=ip_address={ip_address}&fixed_ips=subnet_id={subnet_id}
```

Example of querying ports by page

```
GET https://{Endpoint}/v2.0/ports?limit=2&marker=791870bd-36a7-4d9b-b015-
a78e9b06af08&page_reverse=False
```

[Table 7-7](#) describes the parameters.

Table 7-7 Parameter description

Name	Mandato ry	Type	Description
id	No	String	Specifies the port ID that is used as the filter.
name	No	String	Specifies the port name that is used as the filter.
admin_state_up	No	Boolean	<ul style="list-style-type: none"> Specifies the administrative state of the port that is used as the filter. The value can be true or false.
network_id	No	String	Specifies the network ID that is used as the filter.
mac_address	No	String	Specifies the MAC address that is used as the filter.
device_id	No	String	Specifies the device ID that is used as the filter.
device_owner	No	String	Specifies the device owner that is used as the filter.
status	No	String	<ul style="list-style-type: none"> Specifies the status of the port that is used as the filter. The value can be ACTIVE, BUILD, or DOWN.

Name	Mandatory	Type	Description
security_groups	No	Array of strings	Specifies the ID of the security group that is used as the filter.
fixed_ips	No	Array of strings	Filter by IP address of the port, that is fixed_ips=ip_address={ip_address} or fixed_ips=subnet_id={subnet_id} . Set <i>{ip_address}</i> to an IP address, for example, 192.168.21.22 or 2a07:b980:4030:14::1. Set <i>{subnet_id}</i> to the IPv4 or IPv6 subnet ID, for example, 011fc878-5521-4654-a1ad-f5b0b5820302.
tenant_id	No	String	Specifies the project ID that is used as the filter.
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.

Name	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2 ³¹ -1). The default value is 2000. limit can be used together with marker . For details, see the parameter description of marker .

Request Message

None

Example Request

Example 1

```
GET https://{Endpoint}/v2.0/ports?limit=1
```

Example 2

```
GET https://{Endpoint}/v2.0/ports?mac_address=fa:16:3e:f1:0b:09
```

Example 3

```
GET https://{Endpoint}/v2.0/ports?admin_state_up=False
```

Example 4

```
GET https://{Endpoint}/v2.0/ports?device_id=e6c05704-c907-4cc1-8106-69b0996c43b9
```

Example 5

```
GET https://{Endpoint}/v2.0/ports?tenant_id=6c9298ec8c874f7f99688489ab65f90e&name=port_vm_50_3
```

Example 6

```
GET https://{Endpoint}/v2.0/ports?name=port_vm_50_3
```

Response Parameter

Table 7-8 Response parameter

Parameter	Type	Description
ports	Array of port objects	Specifies the port object list. For details, see Table 7-9 .

Parameter	Type	Description
ports_links	Array of ports_link objects	Specifies the pagination information. For details, see Table 7-14 . Only when limit is used for filtering and the number of resources exceeds the value of limit or 2000 (default value of limit), value next will be returned for rel and a link for href .

Table 7-9 port objects

Attribute	Type	Description
id	String	<ul style="list-style-type: none"> Specifies the port ID. The value can contain a maximum of 255 characters. This parameter is not mandatory when you query ports.
name	String	Specifies the port name.
network_id	String	Specifies the ID of the network that the port belongs to.
admin_state_up	Boolean	<ul style="list-style-type: none"> Specifies the administrative state of the port. The default value is true.
mac_address	String	<ul style="list-style-type: none"> Specifies the port MAC address, for example, "mac_address": "fa:16:3e:9e:ff:55". The MAC address can only be dynamically assigned by the system.
fixed_ips	Array of fixed_ip objects	<ul style="list-style-type: none"> Specifies the port IP address. For details, see Table 7-10. For example, the value is "fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]. "fixed_ips": [{"subnet_id": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", "ip_address": "2a07:b980:4030:14::1"}]

Attribute	Type	Description
device_id	String	<ul style="list-style-type: none"> Specifies the ID of the device that the port belongs to. This parameter is automatically maintained by the system and cannot be set or updated manually. The port with this field specified cannot be deleted.
device_owner	String	<ul style="list-style-type: none"> Specifies the belonged device, which can be the DHCP server, router, or Nova. The value can be network:dhcp, network:router_interface_distributed, compute:xxx, neutron:VIP_PORT, neutron:LOADBALANCERV2, neutron:LOADBALANCERV3, network:endpoint_interface, network:nat_gateway, or network:ucmp. (In value compute:xxx, xxx specifies the AZ name, for example, compute:aa-bb-cc indicates that the private IP address is used by an ECS in the aa-bb-cc AZ). Instructions: <ul style="list-style-type: none"> This parameter value cannot be updated. You can only set device_owner to neutron:VIP_PORT for a virtual IP address port during port creation. If this parameter is not left blank, the port can only be deleted when this parameter value is neutron:VIP_PORT. The port with this field specified cannot be deleted.
tenant_id	String	Specifies the project ID.

Attribute	Type	Description
status	String	<ul style="list-style-type: none"> • Specifies the port status. • The value can be ACTIVE, BUILD, or DOWN. • The status of a HANA SR-IOV VM port is always DOWN.
security_groups	Array of strings	<ul style="list-style-type: none"> • Specifies the security group UUID, for example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. This is an extended attribute. • This parameter cannot be left blank.

Attribute	Type	Description
allowed_address_pairs	Array of allowed_address_pairs objects	<ul style="list-style-type: none"> • Specifies the IP address and MAC address pair. This is an extended attribute. For details, see Table 7-11. • Instructions: <ul style="list-style-type: none"> – The IP address cannot be 0.0.0.0. – Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). – If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. – In the hardware SDN networking plan, the ip_address attribute value cannot be in CIDR format. – To assign a virtual IP address to an ECS, the IP address configured in allowed_address_pairs must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication. – Set allowed_address_pairs of the cloud server to 1.1.1.1/0.
extra_dhcp_opts	Array of extra_dhcp_opt objects	Specifies the extended DHCP option. This is an extended attribute. For details, see Table 7-12 .
binding:vif_details	binding:vif_details object	For details, see Table 7-13 .

Attribute	Type	Description
binding:profile	Object	<ul style="list-style-type: none"> • Specifies the user-defined settings. This is an extended attribute. • Instructions: <ul style="list-style-type: none"> - The internal_elb field is in boolean type and is available to common tenants. Set the value of this parameter to true only when you assign a virtual IP address to an internal network load balancer. The value of this field is maintained by the system and cannot be changed. Example: <code>{"internal_elb": true}</code> - The disable_security_groups field is in boolean type and is available to common tenants. The default value is false. In high-performance communication scenarios, you can set the parameter value to true, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to true. Example: <code>{"disable_security_groups": true }</code> Currently, the value can only be set to true. When the value is set to true, the FWaaS function does not take effect. - For Consumer Cloud, the values of udp_srvports and tcp_srvports fields are strings. By default, udp_srvports and tcp_srvports are not

Attribute	Type	Description
		<p>specified. You can set udp_srvports and tcp_srvports to port numbers, which indicates that the TCP and UDP packets support highly concurrently connections. However, these packets are not protected by network ACLs and security group rules. The udp_srvports and tcp_srvports fields can be updated concurrently.</p> <p>Format:</p> <pre> {"tcp_srvports": "port1 port2 port3", "udp_srvports": "port1 port2 port3"} </pre> <p>You can enter a maximum of 15 port numbers for each value. Use a space to separate adjacent port numbers. The port number ranges from 1 to 65535.</p> <p>Example:</p> <pre> {"tcp_srvports": "80 443", "udp_srvports": "53"} </pre> <p>This example indicates that inbound TCP packets to ports 80 and 443, and inbound UDP packets to port 53 support highly concurrent connections. However, these packets are not controlled by network ACL and security group rules.</p>
binding:vnic_type	String	<ul style="list-style-type: none"> • Specifies the type of the bound vNIC. • The value can be: <ul style="list-style-type: none"> - normal indicates software switching.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Attribute	Type	Description
created_at	String	<ul style="list-style-type: none"> Specifies the time (UTC) when the port is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	<ul style="list-style-type: none"> Specifies the time (UTC) when the port is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-10 fixed_ip objects

Attribute	Type	Description
subnet_id	String	<ul style="list-style-type: none"> Specifies the subnet ID. This parameter cannot be updated.
ip_address	String	<ul style="list-style-type: none"> Specifies the port IP address. This parameter cannot be updated.

Table 7-11 allowed_address_pairs objects

Name	Mandatory	Type	Description
ip_address	Yes	String	<ul style="list-style-type: none"> Specifies the IP address. You cannot set it to 0.0.0.0/0. Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. Set allowed_address_pairs of the cloud server to 1.1.1.1/0. If the value of parameter allowed_address_pairs is specified, parameter ip_address is mandatory.

Name	Mandatory	Type	Description
mac_address	No	String	Specifies the MAC address.

Table 7-12 extra_dhcp_opt objects

Attribute	Type	Description
opt_name	String	Specifies the option name.
opt_value	String	Specifies the option value.

Table 7-13 binding:vif_details object

Name	Type	Description
primary_interface	Boolean	If the value is true, this is the primary NIC.
port_filter	Boolean	Specifies the port used for filtering in security groups to protect against MAC or IP spoofing.
ovs_hybrid_plug	Boolean	Specifies that OVS hybrid plug should be used by Nova APIs.

Table 7-14 ports_link object

Name	Type	Description
href	String	Specifies the API link.
rel	String	Specifies the relationship between the API link and the API version.

Example Response

Example 1

```
{
  "ports": [{
    "id": "791870bd-36a7-4d9b-b015-a78e9b06af08",
    "name": "port-test",
    "status": "DOWN",
    "admin_state_up": true,
    "fixed_ips": [],
    "mac_address": "fa:16:3e:01:e0:b2",
    "network_id": "00ae08c5-f727-49ab-ad4b-b069398aa171",
    "tenant_id": "db82c9e1415a464ea68048baa8acc6b8",
    "project_id": "db82c9e1415a464ea68048baa8acc6b8",
    "device_id": "",
    "device_owner": ""
  ]
}
```

```
"security_groups": ["d0d58aa9-cda9-414c-9c52-6c3daf8534e6"],
"extra_dhcp_opts": [],
"allowed_address_pairs": [],
"binding:vnic_type": "normal",
"binding:vif_details": {},
"binding:profile": {},
"port_security_enabled": true,
"created_at": "2018-09-13T01:43:41",
"updated_at": "2018-09-13T01:43:41"
},
{
  "id": "7a8c720d-32b7-47cc-a943-23e48d69e30a",
  "name": "a8d001aa-6946-4168-86d9-924c7d3ef8fb",
  "status": "DOWN",
  "admin_state_up": true,
  "fixed_ips": [
    {
      "subnet_id": "a8d001aa-6946-4168-86d9-924c7d3ef8fb",
      "ip_address": "2a07:b980:4030:14::1"
    }
  ],
  "mac_address": "fa:16:3e:57:39:c3",
  "network_id": "26cf88ff-1a8c-4233-a8e6-183e1e299357",
  "tenant_id": "db82c9e1415a464ea68048baa8acc6b8",
  "project_id": "db82c9e1415a464ea68048baa8acc6b8",
  "device_id": "6c2fcea1-b785-4253-b84e-3d887e1c67e1",
  "device_owner": "network:router_interface_distributed",
  "security_groups": ["34acbeed-8f65-4875-86ca-66417b1733fd"],
  "extra_dhcp_opts": [],
  "allowed_address_pairs": [],
  "binding:vnic_type": "normal",
  "binding:vif_details": {},
  "binding:profile": {},
  "port_security_enabled": true,
  "created_at": "2018-09-13T01:43:41",
  "updated_at": "2018-09-13T01:43:41"
}
],
"ports_links": [
  {
    "rel": "next",
    "href": "https://{Endpoint}/v2.0/ports?limit=1&marker=7a8c720d-32b7-47cc-a943-23e48d69e30a"
  },
  {
    "rel": "previous",
    "href": "https://{Endpoint}/v2.0/ports?limit=1&marker=7a8c720d-32b7-47cc-a943-23e48d69e30a&page_reverse=True"
  }
]
}
```

Example 2

```
{
  "ports": [
    {
      "admin_state_up": true,
      "allowed_address_pairs": [],
      "binding:vnic_type": "normal",
      "device_id": "e6c05704-c907-4cc1-8106-69b0996c43b9",
      "device_owner": "compute:az3.dc1",
      "extra_dhcp_opts": [],
      "fixed_ips": [
        {
          "ip_address": "172.16.0.37",
          "subnet_id": "b3ac1347-63f2-4e82-b853-3d86416a0db5"
        }
      ],
      "id": "7bb64706-6e46-4f94-a28a-4bc7caaab87d",
      "mac_address": "fa:16:3e:f1:0b:09",
      "name": "port_vm_50_3",
```

```

"network_id": "a54e1b19-ce78-4b7e-b28b-d2d716cdc161",
"security_groups": [
  "ef69bc60-2f4b-4f97-b95b-e3b68df0c0b2"
],
"status": "ACTIVE",
"tenant_id": "6c9298ec8c874f7f99688489ab65f90e",
"project_id": "6c9298ec8c874f7f99688489ab65f90e",
"created_at": "2018-09-13T01:43:41",
"updated_at": "2018-09-13T01:43:41"
}
],
"ports_links": [
  { "rel": "previous",
    "href": "https://{Endpoint}/v2.0/ports?mac_address=fa%3A16%3A3e%3Af1%3A0b%3A09&marker=7bb64706-6e46-4f94-a28a-4bc7caaab87d&page_reverse=True"
  }
]
}

```

Example 3

```

{
  "ports": [
    {
      "admin_state_up": false,
      "allowed_address_pairs": [],
      "binding:vnic_type": "normal",
      "device_id": "",
      "device_owner": "",
      "extra_dhcp_opts": [],
      "fixed_ips": [
        {
          "ip_address": "10.100.100.62",
          "subnet_id": "9b28f20c-0234-419f-a0b4-4a84f182f64b"
        }
      ],
      "id": "ffc0bdee-8413-4fa2-bd82-fa8efe5b3a87",
      "mac_address": "fa:16:3e:2b:bc:57",
      "name": "small_net_port",
      "network_id": "b299b151-7a66-4c6f-a313-cdd3b5724296",
      "security_groups": [
        "ef69bc60-2f4b-4f97-b95b-e3b68df0c0b2"
      ],
      "status": "DOWN",
      "tenant_id": "6c9298ec8c874f7f99688489ab65f90e",
      "project_id": "6c9298ec8c874f7f99688489ab65f90e",
      "created_at": "2018-09-13T01:43:41",
      "updated_at": "2018-09-13T01:43:41"
    }
  ],
  "ports_links": [
    { "rel": "previous",
      "href": "https://{Endpoint}/v2.0/ports?admin_state_up=False&marker=ffc0bdee-8413-4fa2-bd82-fa8efe5b3a87&page_reverse=True"
    }
  ]
}

```

Example 4

```

{
  "ports": [
    {
      "admin_state_up": true,
      "allowed_address_pairs": [],
      "binding:vnic_type": "normal",
      "device_id": "e6c05704-c907-4cc1-8106-69b0996c43b9",
      "device_owner": "compute:az3.dc1",
      "extra_dhcp_opts": [],

```

```
    "fixed_ips": [
      {
        "ip_address": "10.1.0.37",
        "subnet_id": "b3ac1347-63f2-4e82-b853-3d86416a0db5"
      }
    ],
    "id": "7bb64706-6e46-4f94-a28a-4bc7caaab87d",
    "mac_address": "fa:16:3e:f1:0b:09",
    "name": "port_vm_50_3",
    "network_id": "a54e1b19-ce78-4b7e-b28b-d2d716cdc161",
    "security_groups": [
      "ef69bc60-2f4b-4f97-b95b-e3b68df0c0b2"
    ],
    "status": "ACTIVE",
    "tenant_id": "6c9298ec8c874f7f99688489ab65f90e",
    "project_id": "6c9298ec8c874f7f99688489ab65f90e",
    "created_at": "2018-09-13T01:43:41",
    "updated_at": "2018-09-13T01:43:41"
  }
],
"ports_links": [
  {
    "rel": "previous",
    "href": "https://{Endpoint}/v2.0/ports?device_id=77307088-ae60-49fb-9146-924dcf1d1402&marker=7bb64706-6e46-4f94-a28a-4bc7caaab87d&page_reverse=True"
  }
]
}
```

Example 5

```
{
  "ports": [
    {
      "admin_state_up": true,
      "allowed_address_pairs": [],
      "binding:vnic_type": "normal",
      "device_id": "e6c05704-c907-4cc1-8106-69b0996c43b9",
      "device_owner": "compute:az3.dc1",
      "extra_dhcp_opts": [],
      "fixed_ips": [
        {
          "ip_address": "10.1.0.37",
          "subnet_id": "b3ac1347-63f2-4e82-b853-3d86416a0db5"
        }
      ],
      "id": "7bb64706-6e46-4f94-a28a-4bc7caaab87d",
      "mac_address": "fa:16:3e:f1:0b:09",
      "name": "port_vm_50_3",
      "network_id": "a54e1b19-ce78-4b7e-b28b-d2d716cdc161",
      "security_groups": [
        "ef69bc60-2f4b-4f97-b95b-e3b68df0c0b2"
      ],
      "status": "ACTIVE",
      "tenant_id": "6c9298ec8c874f7f99688489ab65f90e",
      "project_id": "6c9298ec8c874f7f99688489ab65f90e",
      "created_at": "2018-09-13T01:43:41",
      "updated_at": "2018-09-13T01:43:41"
    }
  ],
  "ports_links": [
    {
      "rel": "previous",
      "href": "https://{Endpoint}/v2.0/ports?tenant_id=6c9298ec8c874f7f99688489ab65f90e&name=port_vm_50_3&marker=7bb64706-6e46-4f94-a28a-4bc7caaab87d&page_reverse=True"
    }
  ]
}
```

Example 6

```
{
  "ports": [
    {
      "status": "DOWN",
      "allowed_address_pairs": [],
      "extra_dhcp_opts": [],
      "device_owner": "",
      "fixed_ips": [
        {
          "subnet_id": "391c74f7-e3b1-405c-8473-2f71a0aec7dc",
          "ip_address": "10.1.0.33"
        }
      ],
      "id": "0f405555-739f-4a19-abb7-ec11d005b3a9",
      "security_groups": [
        "043548bc-1020-4be0-885a-caac8530e8f6"
      ],
      "device_id": "",
      "port_security_enabled": true,
      "name": "port_vm_50_3",
      "admin_state_up": true,
      "network_id": "9898a82d-7795-4ad5-bf2c-0ed8b822be4f",
      "tenant_id": "3e4a1816927f405cacbc3dca1e05111e",
      "project_id": "3e4a1816927f405cacbc3dca1e05111e",
      "created_at": "2018-09-13T01:43:41",
      "updated_at": "2018-09-13T01:43:41",
      "binding:vnic_type": "normal",
      "mac_address": "fa:16:3e:b0:d9:cf"
    },
    {
      "status": "ACTIVE",
      "allowed_address_pairs": [],
      "extra_dhcp_opts": [],
      "device_owner": "compute:az3.dc1",
      "fixed_ips": [
        {
          "subnet_id": "b3ac1347-63f2-4e82-b853-3d86416a0db5",
          "ip_address": "10.1.0.37"
        }
      ],
      "id": "7bb64706-6e46-4f94-a28a-4bc7caaab87d",
      "security_groups": [
        "ef69bc60-2f4b-4f97-b95b-e3b68df0c0b2"
      ],
      "device_id": "e6c05704-c907-4cc1-8106-69b0996c43b9",
      "name": "port_vm_50_3",
      "admin_state_up": true,
      "network_id": "a54e1b19-ce78-4b7e-b28b-d2d716cdc161",
      "tenant_id": "6c9298ec8c874f7f99688489ab65f90e",
      "project_id": "3e4a1816927f405cacbc3dca1e05111e",
      "created_at": "2018-09-13T01:43:41",
      "updated_at": "2018-09-13T01:43:41",
      "binding:vnic_type": "normal",
      "binding:vnic_type": "normal",
      "mac_address": "fa:16:3e:f1:0b:09"
    }
  ],
  "ports_links": [
    {
      "rel": "previous",
      "href": "https://{Endpoint}/v2.0/ports?name=port_vm_50_3&marker=0f405555-739f-4a19-abb7-ec11d005b3a9&page_reverse=True"
    }
  ]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.2.2 Querying a Port

Function

This API is used to query details about a specified port.

URI

GET /v2.0/ports/{port_id}

[Table 7-15](#) describes the parameters.

Table 7-15 Parameter description

Name	Mandatory	Description
port_id	Yes	Specifies the port ID that uniquely identifies the port.

Request Parameters

None

Example Request

GET https://{Endpoint}/v2.0/ports/791870bd-36a7-4d9b-b015-a78e9b06af08

Response Parameters

Table 7-16 Response parameter

Parameter	Type	Description
port	port object	Specifies the port object list. For details, see Table 7-17 .

Table 7-17 port objects

Attribute	Type	Description
id	String	<ul style="list-style-type: none"> Specifies the port ID. The value can contain a maximum of 255 characters. This parameter is not mandatory when you query ports.
name	String	Specifies the port name.
network_id	String	Specifies the ID of the network that the port belongs to.
admin_state_up	Boolean	<ul style="list-style-type: none"> Specifies the administrative state of the port. The default value is true.
mac_address	String	<ul style="list-style-type: none"> Specifies the port MAC address, for example, "mac_address": "fa:16:3e:9e:ff:55". The MAC address can only be dynamically assigned by the system.
fixed_ips	Array of fixed_ip objects	<ul style="list-style-type: none"> Specifies the port IP address. For details, see Table 7-18. For example, the value is "fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]. "fixed_ips": [{"subnet_id": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", "ip_address": "2a07:b980:4030:14::1"}].
device_id	String	<ul style="list-style-type: none"> Specifies the device ID. This parameter is automatically maintained by the system and cannot be set or updated manually. The port with this field specified cannot be deleted.

Attribute	Type	Description
device_owner	String	<ul style="list-style-type: none"> • Specifies the belonged device, which can be the DHCP server, router, or Nova. • The value can be network:dhcp, network:router_interface_distributed, compute:xxx, neutron:VIP_PORT, neutron:LOADBALANCERV2, neutron:LOADBALANCERV3, network:endpoint_interface, network:nat_gateway, or network:ucmp. (In value compute:xxx, xxx specifies the AZ name, for example, compute:aa-bb-cc indicates that the private IP address is used by an ECS in the aa-bb-cc AZ). • Instructions: <ul style="list-style-type: none"> - This parameter value cannot be updated. You can only set device_owner to neutron:VIP_PORT for a virtual IP address port during port creation. If this parameter is not left blank, the port can only be deleted when this parameter value is neutron:VIP_PORT. - The port with this field specified cannot be deleted.
tenant_id	String	Specifies the project ID.
status	String	<ul style="list-style-type: none"> • Specifies the port status. • The value can be ACTIVE, BUILD, or DOWN. • The status of a HANA SR-IOV VM port is always DOWN.

Attribute	Type	Description
security_groups	Array of strings	<ul style="list-style-type: none"> • Specifies the security group UUID, for example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. This is an extended attribute. • This parameter cannot be left blank.
allowed_address_pairs	Array of allowed_address_pairs objects	<ul style="list-style-type: none"> • Specifies the IP address and MAC address pair. This is an extended attribute. For details, see Table 7-19. • Instructions: <ul style="list-style-type: none"> - The IP address cannot be 0.0.0.0. - Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). - If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. - In the hardware SDN networking plan, the ip_address attribute value cannot be in CIDR format. - To assign a virtual IP address to an ECS, the IP address configured in allowed_address_pairs must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication. - Set allowed_address_pairs of the cloud server to 1.1.1.1/0.

Attribute	Type	Description
extra_dhcp_opts	Array of extra_dhcp_opt objects	Specifies the extended DHCP option. This is an extended attribute. For details, see Table 7-20 .
binding:vif_details	binding:vif_details object	For details, see Table 7-21 .

Attribute	Type	Description
binding:profile	binding:profile object	<ul style="list-style-type: none"> • Specifies the user-defined settings. This is an extended attribute. • Instructions: <ul style="list-style-type: none"> - The internal_elb field is in boolean type and is available to common tenants. Set the value of this parameter to true only when you assign a virtual IP address to an internal network load balancer. The value of this field is maintained by the system and cannot be changed. Example: <code>{"internal_elb": true}</code> - The disable_security_groups field is in boolean type and is available to common tenants. The default value is false. In high-performance communication scenarios, you can set the parameter value to true, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to true. Example: <code>{"disable_security_groups": true }</code> Currently, the value can only be set to true. When the value is set to true, the FWaaS function does not take effect. - For Consumer Cloud, the values of udp_srvports and tcp_srvports fields are strings. By default, udp_srvports and tcp_srvports are not

Attribute	Type	Description
		<p>specified. You can set udp_srvports and tcp_srvports to port numbers, which indicates that the TCP and UDP packets support highly concurrently connections. However, these packets are not protected by network ACLs and security group rules. The udp_srvports and tcp_srvports fields can be updated concurrently.</p> <p>Format:</p> <pre> {"tcp_srvports": "port1 port2 port3", "udp_srvports": "port1 port2 port3"} </pre> <p>You can enter a maximum of 15 port numbers for each value. Use a space to separate adjacent port numbers. The port number ranges from 1 to 65535.</p> <p>Example:</p> <pre> {"tcp_srvports": "80 443", "udp_srvports": "53"} </pre> <p>This example indicates that inbound TCP packets to ports 80 and 443, and inbound UDP packets to port 53 support highly concurrent connections. However, these packets are not controlled by network ACL and security group rules.</p>
binding:vnic_type	String	<ul style="list-style-type: none"> • Specifies the type of the bound vNIC. • The value can be: <ul style="list-style-type: none"> - normal indicates software switching.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Attribute	Type	Description
created_at	String	<ul style="list-style-type: none"> Specifies the time (UTC) when the port is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	<ul style="list-style-type: none"> Specifies the time (UTC) when the port is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-18 fixed_ip objects

Attribute	Type	Description
subnet_id	String	<ul style="list-style-type: none"> Specifies the subnet ID. This parameter cannot be updated.
ip_address	String	<ul style="list-style-type: none"> Specifies the port IP address. This parameter cannot be updated.

Table 7-19 allowed_address_pairs objects

Name	Mandatory	Type	Description
ip_address	Yes	String	<ul style="list-style-type: none"> Specifies the IP address. You cannot set it to 0.0.0.0/0. Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. Set allowed_address_pairs of the cloud server to 1.1.1.1/0. If the value of parameter allowed_address_pairs is specified, parameter ip_address is mandatory.

Name	Mandatory	Type	Description
mac_address	No	String	Specifies the MAC address.

Table 7-20 extra_dhcp_opt objects

Attribute	Type	Description
opt_name	String	Specifies the option name.
opt_value	String	Specifies the option value.

Table 7-21 binding:vif_details object

Name	Type	Description
primary_interface	Boolean	If the value is true, this is the primary NIC.
port_filter	Boolean	Specifies the port used for filtering in security groups to protect against MAC or IP spoofing.
ovs_hybrid_plug	Boolean	Specifies that OVS hybrid plug should be used by Nova APIs.

Example Response

```
{
  "port": {
    "id": "791870bd-36a7-4d9b-b015-a78e9b06af08",
    "name": "port-test",
    "status": "DOWN",
    "admin_state_up": true,
    "fixed_ips": [],
    "mac_address": "fa:16:3e:01:e0:b2",
    "network_id": "00ae08c5-f727-49ab-ad4b-b069398aa171",
    "tenant_id": "db82c9e1415a464ea68048baa8acc6b8",
    "project_id": "db82c9e1415a464ea68048baa8acc6b8",
    "device_id": "",
    "device_owner": "",
    "security_groups": [
      "d0d58aa9-cda9-414c-9c52-6c3daf8534e6"
    ],
    "extra_dhcp_opts": [],
    "allowed_address_pairs": [],
    "binding:vnic_type": "normal",
    "binding:vif_details": {},
    "binding:profile": {},
    "port_security_enabled": true,
    "created_at": "2018-09-13T01:43:41",
    "updated_at": "2018-09-13T01:43:41"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.2.3 Creating a Port

Function

This API is used to create a port.

URI

POST /v2.0/ports

Request Parameters

Table 7-22 Request parameter

Parameter	Type	Mandatory	Description
port	port object	Yes	Specifies the port object list. For details, see Table 7-23 .

Table 7-23 port objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the port name.
network_id	Yes	String	<ul style="list-style-type: none"> Specifies the ID of the network to which the port belongs. The network ID must exist.
admin_state_up	No	Boolean	Specifies the administrative status. The default value is true .

Attribute	Mandatory	Type	Description
fixed_ips	No	Array of fixed_ip objects	Specifies the port IP address. For details, see Table 7-24 . For example, the value is "fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}] . "fixed_ips": [{"subnet_id": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", "ip_address": "2a07:b980:4030:14::1"}]
security_groups	No	Array of strings	Specifies the UUID of the security group, for example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"] . This is an extended attribute. This parameter cannot be left blank.

Attribute	Mandatory	Type	Description
allowed_addresses_pairs	No	Array of allowed_addresses_pairs objects	<p>Specifies the IP address and MAC address pair. This is an extended attribute. For details, see Table 7-25.</p> <p>Instructions:</p> <ul style="list-style-type: none"> • The IP address cannot be 0.0.0.0. • Configure a dedicated security group for the port if the parameter allowed_addresses_pairs has a large CIDR block (subnet mask less than 24). • If the value of allowed_addresses_pairs is 1.1.1.1/0, the source/destination check is disabled. • In the hardware SDN networking plan, the ip_address attribute value cannot be in CIDR format. • To assign a virtual IP address to an ECS, the IP address configured in allowed_addresses_pairs must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication. • Set allowed_addresses_pairs of the cloud server to 1.1.1.1/0.
extra_dhcp_options	No	Array of extra_dhcp_options objects	<p>Specifies the extended DHCP option. This is an extended attribute. For details, see Table 7-26.</p>

Attribute	Mandatory	Type	Description
binding:profile	No	Object	<ul style="list-style-type: none"> ● Specifies the user-defined settings. This is an extended attribute. ● Instructions: <ul style="list-style-type: none"> - The internal_elb field is in boolean type and is available to common tenants. Set the value of this parameter to true only when you assign a virtual IP address to an internal network load balancer. The value of this field is maintained by the system and cannot be changed. Example: <code>{"internal_elb": true}</code> - The disable_security_groups field is in boolean type and is available to common tenants. The default value is false. In high-performance communication scenarios, you can set the parameter value to true, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to true. Example: <code>{"disable_security_group s": true }</code> Currently, the value can only be set to true. When the value is set to true, the FWaaS function does not take effect. - For Consumer Cloud, the values of

Attribute	Mandatory	Type	Description
			<p>udp_srvports and tcp_srvports fields are strings. By default, udp_srvports and tcp_srvports are not specified. You can set udp_srvports and tcp_srvports to port numbers, which indicates that the TCP and UDP packets support highly concurrently connections. However, these packets are not protected by network ACLs and security group rules. The udp_srvports and tcp_srvports fields can be updated concurrently.</p> <p>Format:</p> <pre> {"tcp_srvports": "port1 port2 port3", "udp_srvports": "port1 port2 port3"} </pre> <p>You can enter a maximum of 15 port numbers for each value. Use a space to separate adjacent port numbers. The port number ranges from 1 to 65535.</p> <p>Example:</p> <pre> {"tcp_srvports": "80 443", "udp_srvports": "53"} </pre> <p>This example indicates that inbound TCP packets to ports 80 and 443, and inbound UDP packets to port 53 support highly concurrent connections. However, these packets are not controlled by network ACL and security group rules.</p>

Attribute	Mandatory	Type	Description
binding:vnic_type	No	String	Specifies the type of the bound vNIC. normal: Softswitch
device_owner	No	String	Specifies the device that the port belongs to. Currently, only "" and neutron:VIP_PORT are supported. neutron:VIP_PORT indicates the port of a virtual IP address.

Table 7-24 fixed_ip objects

Attribute	Mandatory	Type	Description
subnet_id	No	String	Specifies the ID of the subnet to which the port belongs. This parameter cannot be updated.
ip_address	No	String	Specifies the port IP address. This parameter cannot be updated.

Table 7-25 `allowed_address_pairs` objects

Name	Mandatory	Type	Description
<code>ip_address</code>	Yes	String	<ul style="list-style-type: none">Specifies the IP address.You cannot set it to 0.0.0.0/0.Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24).If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled.Set allowed_address_pairs of the cloud server to 1.1.1.1/0.If the value of parameter allowed_address_pairs is specified, parameter ip_address is mandatory.
<code>mac_address</code>	No	String	Specifies the MAC address.

Table 7-26 `extra_dhcp_opt` objects

Attribute	Mandatory	Type	Description
<code>opt_name</code>	No	String	Specifies the option name.
<code>opt_value</code>	No	String	Specifies the option value.

Example Request

Create a port named **port-test** on network whose ID is 00ae08c5-f727-49ab-ad4b-b069398aa171.

```
POST https://{Endpoint}/v2.0/ports
{
  "port": {
    "admin_state_up": true,
    "network_id": "00ae08c5-f727-49ab-ad4b-b069398aa171",
    "name": "port-test"
  }
}
```

Response Parameters

Table 7-27 Response parameter

Parameter	Type	Description
port	port object	Specifies the port information. For details, see Table 7-28 .

Table 7-28 port objects

Attribute	Type	Description
id	String	Specifies the port ID. A maximum of 255 characters are allowed. This parameter is not mandatory when you query ports.
name	String	Specifies the port name.
network_id	String	Specifies the ID of the network to which the port belongs.
admin_state_up	Boolean	Specifies the administrative status. The default value is true .
mac_address	String	Specifies the port MAC address. For example, " mac_address ": " fa:16:3e:9e:ff:55 ". This value can only be dynamically assigned by the system.
fixed_ips	Array of fixed_ip objects	Specifies the port IP address. For details, see Table 7-29 . For example, the value is " fixed_ips ": [{" subnet_id ": " 4dc70db6-cb7f-4200-9790-a6a910776bba ", " ip_address ": " 192.169.25.79 "}]. " fixed_ips ": [{" subnet_id ": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", " ip_address ": "2a07:b980:4030:14::1"}]

Attribute	Type	Description
device_id	String	Specifies the device ID. This value is automatically maintained by the system and cannot be set or updated manually. The port with this field specified cannot be deleted.
device_owner	String	Specifies the DHCP, router or Nova to which a device belongs. The value can be network:dhcp , network:router_interface_distributed , compute:xxx , neutron:VIP_PORT , neutron:LOADBALANCERV2 , neutron:LOADBALANCERV3 , network:endpoint_interface , network:nat_gateway , or network:ucmp . (In value compute:xxx , xxx specifies the AZ name, for example, compute:aa-bb-cc indicates that the private IP address is used by an ECS in the aa-bb-cc AZ). This parameter value cannot be updated. You can only set device_owner to neutron:VIP_PORT for a virtual IP address port during port creation. If this parameter of a port is not left blank, the port can only be deleted when this parameter value is neutron:VIP_PORT . The port with this field specified cannot be deleted.
tenant_id	String	Specifies the project ID.
status	String	Specifies the port status. The value can be ACTIVE , BUILD , or DOWN . The status of a HANA SR-IOV VM port is always DOWN .

Attribute	Type	Description
security_groups	Array of strings	Specifies the UUID of the security group, for example, " security_groups ": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. This is an extended attribute. This parameter cannot be left blank.
allowed_address_pairs	Array of allowed_address_pairs objects	Specifies the IP address and MAC address pair. This is an extended attribute. For details, see Table 7-30 . Instructions: <ul style="list-style-type: none"> • The IP address cannot be 0.0.0.0. • Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). • If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. • In the hardware SDN networking plan, the ip_address attribute value cannot be in CIDR format. • To assign a virtual IP address to an ECS, the IP address configured in allowed_address_pairs must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication. • Set allowed_address_pairs of the cloud server to 1.1.1.1/0.
extra_dhcp_opts	Array of extra_dhcp_opt objects	Specifies the extended DHCP option. This is an extended attribute. For details, see Table 7-31 .
binding:vif_details	binding:vif_details object	For details, see Table 7-32 .

Attribute	Type	Description
binding:profile	Object	<ul style="list-style-type: none"> • Specifies the user-defined settings. This is an extended attribute. • Instructions: <ul style="list-style-type: none"> - The internal_elb field is in boolean type and is available to common tenants. Set the value of this parameter to true only when you assign a virtual IP address to an internal network load balancer. The value of this field is maintained by the system and cannot be changed. Example: <code>{"internal_elb": true}</code> - The disable_security_groups field is in boolean type and is available to common tenants. The default value is false. In high-performance communication scenarios, you can set the parameter value to true, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to true. Example: <code>{"disable_security_groups": true }</code> Currently, the value can only be set to true. When the value is set to true, the FWaaS function does not take effect. - For Consumer Cloud, the values of udp_srvports and tcp_srvports fields are strings. By default, udp_srvports and tcp_srvports are not

Attribute	Type	Description
		<p>specified. You can set udp_srvports and tcp_srvports to port numbers, which indicates that the TCP and UDP packets support highly concurrently connections. However, these packets are not protected by network ACLs and security group rules. The udp_srvports and tcp_srvports fields can be updated concurrently.</p> <p>Format:</p> <pre> {"tcp_srvports": "port1 port2 port3", "udp_srvports": "port1 port2 port3"} </pre> <p>You can enter a maximum of 15 port numbers for each value. Use a space to separate adjacent port numbers. The port number ranges from 1 to 65535.</p> <p>Example:</p> <pre> {"tcp_srvports": "80 443", "udp_srvports": "53"} </pre> <p>This example indicates that inbound TCP packets to ports 80 and 443, and inbound UDP packets to port 53 support highly concurrent connections. However, these packets are not controlled by network ACL and security group rules.</p>
binding:vnic_type	String	<p>Specifies the type of the bound vNIC.</p> <p>normal: Softswitch</p>
project_id	String	<p>Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID.</p>

Attribute	Type	Description
created_at	String	Specifies the time (UTC) when the port is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the port is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-29 fixed_ip objects

Attribute	Type	Description
subnet_id	String	Specifies the ID of the subnet to which the port belongs. This parameter cannot be updated.
ip_address	String	Specifies the port IP address. This parameter cannot be updated.

Table 7-30 allowed_address_pairs objects

Attribute	Type	Description
ip_address	String	Specifies the IP address. This parameter cannot be 0.0.0.0 .
mac_address	String	Specifies the MAC address.

Table 7-31 extra_dhcp_opt objects

Attribute	Type	Description
opt_name	String	Specifies the option name.
opt_value	String	Specifies the option value.

Table 7-32 binding:vif_details object

Name	Type	Description
primary_interface	Boolean	If the value is true, this is the primary NIC.

Name	Type	Description
port_filter	Boolean	Specifies the port used for filtering in security groups to protect against MAC or IP spoofing.
ovs_hybrid_plug	Boolean	Specifies that OVS hybrid plug should be used by Nova APIs.

Example Response

```
{
  "port": {
    "id": "a7d98f3c-b42f-460b-96a1-07601e145961",
    "name": "port-test",
    "status": "DOWN",
    "admin_state_up": true,
    "fixed_ips": [],
    "mac_address": "fa:16:3e:01:f7:90",
    "network_id": "00ae08c5-f727-49ab-ad4b-b069398aa171",
    "tenant_id": "db82c9e1415a464ea68048baa8acc6b8",
    "project_id": "db82c9e1415a464ea68048baa8acc6b8",
    "device_id": "",
    "device_owner": "",
    "security_groups": [
      "d0d58aa9-cda9-414c-9c52-6c3daf8534e6"
    ],
    "extra_dhcp_opts": [],
    "allowed_address_pairs": [],
    "binding:vnic_type": "normal",
    "binding:vif_details": {},
    "binding:profile": {},
    "port_security_enabled": true,
    "created_at": "2018-09-20T01:45:26",
    "updated_at": "2018-09-20T01:45:26"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.2.4 Updating a Port

Function

This API is used to update a port.

URI

PUT /v2.0/ports/{port_id}

[Table 7-33](#) describes the parameters.

Table 7-33 Parameter description

Name	Mandatory	Description
port_id	Yes	Specifies the port ID that uniquely identifies the port.

Request Parameters

Table 7-34 Request parameter

Parameter	Type	Mandatory	Description
port	port object	Yes	Specifies the port object list. For details, see Table 7-35 . You must specify at least one attribute when updating a port.

Table 7-35 port objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the port name.
security_groups	No	Array of strings	Specifies the UUID of the security group, for example, " security_groups ": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"] . This is an extended attribute. This parameter cannot be left blank.

Attribute	Mandatory	Type	Description
allowed_address_pairs	No	Array of allowed_address_pairs objects	<p>Specifies the IP address and MAC address pair. This is an extended attribute. For details, see Table 7-36.</p> <p>Instructions:</p> <ul style="list-style-type: none"> • The IP address cannot be 0.0.0.0. • Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). • If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. • In the hardware SDN networking plan, the ip_address attribute value cannot be in CIDR format. • To assign a virtual IP address to an ECS, the IP address configured in allowed_address_pairs must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication. • Set allowed_address_pairs of the cloud server to 1.1.1.1/0.
extra_dhcp_opts	No	Array of extra_dhcp_opt objects	<p>Specifies the extended DHCP option. This is an extended attribute. For details, see Table 7-37.</p>

Attribute	Mandatory	Type	Description
binding:profile	No	Object	<ul style="list-style-type: none"> • Specifies the user-defined settings. This is an extended attribute. • Instructions: <ul style="list-style-type: none"> - The internal_elb field is in boolean type and is available to common tenants. Set the value of this parameter to true only when you assign a virtual IP address to an internal network load balancer. The value of this field is maintained by the system and cannot be changed. Example: <code>{"internal_elb": true}</code> - The disable_security_groups field is in boolean type and is available to common tenants. The default value is false. In high-performance communication scenarios, you can set the parameter value to true, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to true. Example: <code>{"disable_security_group s": true }</code> Currently, the value can only be set to true. When the value is set to true, the FWaaS function does not take effect.

Attribute	Mandatory	Type	Description
			<p>– For Consumer Cloud, the values of udp_srvports and tcp_srvports fields are strings. By default, udp_srvports and tcp_srvports are not specified. You can set udp_srvports and tcp_srvports to port numbers, which indicates that the TCP and UDP packets support highly concurrently connections. However, these packets are not protected by network ACLs and security group rules. The udp_srvports and tcp_srvports fields can be updated concurrently.</p> <p>Format:</p> <pre>{"tcp_srvports": "port1 port2 port3", "udp_srvports": "port1 port2 port3"}</pre> <p>You can enter a maximum of 15 port numbers for each value. Use a space to separate adjacent port numbers. The port number ranges from 1 to 65535.</p> <p>Example:</p> <pre>{"tcp_srvports": "80 443", "udp_srvports": "53"}</pre> <p>This example indicates that inbound TCP packets to ports 80 and 443, and inbound UDP packets to port 53 support highly concurrent connections. However, these packets</p>

Attribute	Mandatory	Type	Description
			are not controlled by network ACL and security group rules.
binding:vnic_type	No	String	Specifies the type of the bound vNIC. normal: Softswitch

Table 7-36 allowed_address_pairs objects

Name	Mandatory	Type	Description
ip_address	Yes	String	<ul style="list-style-type: none"> Specifies the IP address. You cannot set it to 0.0.0.0/0. Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. Set allowed_address_pairs of the cloud server to 1.1.1.1/0. If the value of parameter allowed_address_pairs is specified, parameter ip_address is mandatory.
mac_address	No	String	Specifies the MAC address.

Table 7-37 extra_dhcp_opt objects

Attribute	Mandatory	Type	Description
opt_name	No	String	Specifies the option name.
opt_value	No	String	Specifies the option value.

Example Request

Change the name of the port whose ID is 7a9a954a-eb41-4954-a300-11ab17a361a2 to **port-test02**.

```
PUT https://{Endpoint}/v2.0/ports/7a9a954a-eb41-4954-a300-11ab17a361a2
{
  "port": {
    "name": "port-test02"
  }
}
```

Response Parameters

Table 7-38 Response parameter

Parameter	Type	Description
port	port object	Specifies the port object list. For details, see Table 7-39 .

Table 7-39 port objects

Attribute	Type	Description
id	String	Specifies the port ID. A maximum of 255 characters are allowed. This parameter is not mandatory when you query ports.
name	String	Specifies the port name.
network_id	String	Specifies the ID of the network to which the port belongs.
admin_state_up	Boolean	Specifies the administrative status. The default value is true .
mac_address	String	Specifies the port MAC address. For example, " mac_address ": " fa:16:3e:9e:ff:55 ". This value can only be dynamically assigned by the system.

Attribute	Type	Description
fixed_ips	Array of fixed_ip objects	Specifies the port IP address. For details, see Table 7-40 . For example, the value is "fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}] . "fixed_ips": [{"subnet_id": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", "ip_address": "2a07:b980:4030:14::1"}]
device_id	String	Specifies the device ID. This value is automatically maintained by the system and cannot be set or updated manually. The port with this field specified cannot be deleted.
device_owner	String	Specifies the DHCP, router or Nova to which a device belongs. The value can be network:dhcp , network:router_interface_distributed , compute:xxx , neutron:VIP_PORT , neutron:LOADBALANCERV2 , neutron:LOADBALANCERV3 , network:endpoint_interface , network:nat_gateway , or network:ucmp . (In value compute:xxx , xxx specifies the AZ name, for example, compute:aa-bb-cc indicates that the private IP address is used by an ECS in the aa-bb-cc AZ). This parameter value cannot be updated. You can only set device_owner to neutron:VIP_PORT for a virtual IP address port during port creation. If this parameter of a port is not left blank, the port can only be deleted when this parameter value is neutron:VIP_PORT . The port with this field specified cannot be deleted.
tenant_id	String	Specifies the project ID.

Attribute	Type	Description
status	String	<p>Specifies the port status. The value can be ACTIVE, BUILD, or DOWN.</p> <p>The status of a HANA SR-IOV VM port is always DOWN.</p>
security_groups	Array of strings	<p>Specifies the UUID of the security group, for example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. This is an extended attribute.</p> <p>This parameter cannot be left blank.</p>
allowed_address_pairs	Array of allowed_address_pairs objects	<p>Specifies the IP address and MAC address pair. This is an extended attribute. For details, see Table 7-41.</p> <p>Instructions:</p> <ul style="list-style-type: none"> • The IP address cannot be 0.0.0.0. • Configure a dedicated security group for the port if the parameter allowed_address_pairs has a large CIDR block (subnet mask less than 24). • If the value of allowed_address_pairs is 1.1.1.1/0, the source/destination check is disabled. • In the hardware SDN networking plan, the ip_address attribute value cannot be in CIDR format. • To assign a virtual IP address to an ECS, the IP address configured in allowed_address_pairs must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication. • Set allowed_address_pairs of the cloud server to 1.1.1.1/0.

Attribute	Type	Description
extra_dhcp_opts	Array of extra_dhcp_opt objects	Specifies the extended DHCP option. This is an extended attribute. For details, see Table 7-42 .
binding:vif_details	binding:vif_details object	For details, see Table 7-43 .

Attribute	Type	Description
binding:profile	Object	<ul style="list-style-type: none"> • Specifies the user-defined settings. This is an extended attribute. • Instructions: <ul style="list-style-type: none"> - The internal_elb field is in boolean type and is available to common tenants. Set the value of this parameter to true only when you assign a virtual IP address to an internal network load balancer. The value of this field is maintained by the system and cannot be changed. Example: <code>{"internal_elb": true}</code> - The disable_security_groups field is in boolean type and is available to common tenants. The default value is false. In high-performance communication scenarios, you can set the parameter value to true, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to true. Example: <code>{"disable_security_groups": true }</code> Currently, the value can only be set to true. When the value is set to true, the FWaaS function does not take effect. - For Consumer Cloud, the values of udp_srvports and tcp_srvports fields are strings. By default, udp_srvports and tcp_srvports are not

Attribute	Type	Description
		<p>specified. You can set udp_srvports and tcp_srvports to port numbers, which indicates that the TCP and UDP packets support highly concurrently connections. However, these packets are not protected by network ACLs and security group rules. The udp_srvports and tcp_srvports fields can be updated concurrently.</p> <p>Format:</p> <pre> {"tcp_srvports": "port1 port2 port3", "udp_srvports": "port1 port2 port3"} </pre> <p>You can enter a maximum of 15 port numbers for each value. Use a space to separate adjacent port numbers. The port number ranges from 1 to 65535.</p> <p>Example:</p> <pre> {"tcp_srvports": "80 443", "udp_srvports": "53"} </pre> <p>This example indicates that inbound TCP packets to ports 80 and 443, and inbound UDP packets to port 53 support highly concurrent connections. However, these packets are not controlled by network ACL and security group rules.</p>
binding:vnic_type	String	<p>Specifies the type of the bound vNIC.</p> <p>normal: Softswitch</p>
project_id	String	<p>Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID.</p>

Attribute	Type	Description
created_at	String	Specifies the time (UTC) when the port is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the port is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-40 fixed_ip objects

Attribute	Type	Description
subnet_id	String	Specifies the ID of the subnet to which the port belongs. This parameter cannot be updated.
ip_address	String	Specifies the port IP address. This parameter cannot be updated.

Table 7-41 allowed_address_pairs objects

Attribute	Type	Description
ip_address	String	Specifies the IP address. This parameter cannot be 0.0.0.0 .
mac_address	String	Specifies the MAC address.

Table 7-42 extra_dhcp_opt objects

Attribute	Type	Description
opt_name	String	Specifies the option name.
opt_value	String	Specifies the option value.

Table 7-43 binding:vif_details object

Name	Type	Description
primary_interface	Boolean	If the value is true, this is the primary NIC.

Name	Type	Description
port_filter	Boolean	Specifies the port used for filtering in security groups to protect against MAC or IP spoofing.
ovs_hybrid_plug	Boolean	Specifies that OVS hybrid plug should be used by Nova APIs.

Example Response

```
{
  "port": {
    "id": "a7d98f3c-b42f-460b-96a1-07601e145961",
    "name": "port-test02",
    "status": "DOWN",
    "admin_state_up": true,
    "fixed_ips": [],
    "mac_address": "fa:16:3e:01:f7:90",
    "network_id": "00ae08c5-f727-49ab-ad4b-b069398aa171",
    "tenant_id": "db82c9e1415a464ea68048baa8acc6b8",
    "project_id": "db82c9e1415a464ea68048baa8acc6b8",
    "device_id": "",
    "device_owner": "",
    "security_groups": [
      "d0d58aa9-cda9-414c-9c52-6c3daf8534e6"
    ],
    "extra_dhcp_opts": [],
    "allowed_address_pairs": [],
    "binding:vnic_type": "normal",
    "binding:vif_details": {},
    "binding:profile": {},
    "port_security_enabled": true,
    "created_at": "2018-09-20T01:45:26",
    "updated_at": "2018-09-20T01:48:56"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.2.5 Deleting a Port

Function

This API is used to delete a port.

Restrictions

- A port with **device_owner** set to a value other than **neutron:VIP_PORT** cannot be deleted.
- A port with **device_id** specified cannot be deleted.

URI

DELETE /v2.0/ports/{port_id}

[Table 7-44](#) describes the parameters.

Table 7-44 Parameter description

Name	Mandatory	Description
port_id	Yes	Specifies the port ID that uniquely identifies the port.

Request Parameters

None

Response Parameters

None

Example Request

```
DELETE https://{Endpoint}/v2.0/ports/2b098395-046a-4071-b009-312bcee665cb
```

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.3 Network

7.3.1 Querying Networks

Function

This API is used to query all networks accessible to the tenant submitting the request.

URI

GET /v2.0/networks

Example:

```
GET https://{Endpoint}/v2.0/networks?
id={network_id}&status={network_status}&name={network_name}&admin_state_up=${
admin_state_up}&tenant_id={tenant_id}&shared={is_shared}&provider:network_type={geneve}
```

Example of querying ports by page

```
GET https://{Endpoint}/v2.0/networks?limit=2&marker=0133cd73-34d4-4d4c-bf1f-
e65b24603206&page_reverse=False
```

Table 7-45 describes the parameters.

Table 7-45 Parameter description

Name	Mandatory	Type	Description
id	No	String	Specifies that the network ID is used as the filtering condition.
name	No	String	Specifies that the network name is used as the filtering condition.
admin_state_up	No	Boolean	Specifies that the admin state is used as the filtering condition. The value can be true or false .
provider:network_type	No	String	Specifies that the network type is used as the filtering condition.
shared	No	Boolean	Specifies that whether the network can be shared by multiple tenants is used as the filtering condition. The value can be true or false .
status	No	String	Specifies that the network status is used as the filtering condition. The value can be ACTIVE , BUILD , or DOWN .
router:external	No	Boolean	Specifies whether the network is an external network is used as the filtering condition. The value can be true or false .
tenant_id	No	String	Specifies that the project ID is used as the filtering condition.

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax ($2^{31}-1$). The default value is 2000.</p> <p>limit can be used together with marker. For details, see the parameter description of marker.</p>

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/networks?limit=1
```

Response Parameters

Table 7-46 Response parameter

Parameter	Type	Description
networks	Array of network objects	Specifies the network list. For details, see Table 7-47 .
networks_links	Array of networks_link objects	Specifies the pagination information. For details, see Table 7-48 . Only when limit is used for filtering and the number of resources exceeds the value of limit or 2000 (default value of limit), value next will be returned for rel and a link for href .

Table 7-47 network object

Attribute	Type	Description
status	String	Specifies the network status. The value can be ACTIVE , BUILD , DOWN , or ERROR .
subnets	Array of strings	Specifies ID of the subnet associated with this network. Only one subnet can be associated with each network.
name	String	Specifies the network name. The name cannot be the same as the admin_external_net value (preset network name and cannot be used).
router:external	Boolean	Specifies whether the network is an external network. The default value is false . This is an extended attribute.
admin_state_up	Boolean	Specifies the administrative status. The value can only be true .
tenant_id	String	Specifies the project ID.
shared	Boolean	Specifies whether the network can be shared by different tenants.
id	String	Specifies the network ID.

Attribute	Type	Description
provider:network_type	String	<p>Specifies the network type. Only the VXLAN and GENEVE networks are supported.</p> <p>Tenants can only set this parameter to geneve. If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as admin_external_net, this parameter is fixed at vlan and cannot be configured.</p> <p>Note:</p> <ul style="list-style-type: none"> • Set this parameter to geneve if you want to create GENEVE networks. • Do not specify this parameter if you want to create VXLAN networks.
availability_zone_hints	Array of strings	Specifies the availability zones available to this network. The current version does not support cross-availability-zone network scheduling.
availability_zones	Array of strings	Specifies the availability zone of this network.
port_security_enabled	Boolean	Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping settings of all VMs in the network do not take effect.
dns_domain	String	Specifies the default private network DNS domain address. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	<p>Specifies the time (UTC) when the network is created.</p> <p>Format: <i>yyyy-MM-ddTHH:mm:ss</i></p>
updated_at	String	<p>Specifies the time (UTC) when the network is updated.</p> <p>Format: <i>yyyy-MM-ddTHH:mm:ss</i></p>

Table 7-48 networks_link object

Parameter	Type	Description
href	String	Specifies the API link.
rel	String	Specifies the relationship between the API link and the API version.

Example Response

```
{
  "networks": [
    {
      "id": "0133cd73-34d4-4d4c-bf1f-e65b24603206",
      "name": "3804f26c-7862-43b6-ad3c-48445f42de89",
      "status": "ACTIVE",
      "shared": false,
      "subnets": [
        "423796f5-e02f-476f-bf02-2b88c8ddac8b"
      ],
      "availability_zone_hints": [],
      "availability_zones": [
        "az2.dc2",
        "az5.dc5"
      ],
      "admin_state_up": true,
      "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
      "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
      "provider:network_type": "vxlan",
      "router:external": false,
      "port_security_enabled": true,
      "created_at": "2018-03-23T03:51:58",
      "updated_at": "2018-03-23T03:51:58"
    }
  ],
  "networks_links": [
    {
      "rel": "next",
      "href": "https://{Endpoint}/v2.0/networks?limit=1&marker=0133cd73-34d4-4d4c-bf1f-e65b24603206"
    },
    {
      "rel": "previous",
      "href": "https://{Endpoint}/v2.0/subnets?limit=1&marker=0133cd73-34d4-4d4c-bf1f-e65b24603206&page_reverse=True"
    }
  ]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.3.2 Querying Network Details

Function

This API is used to query details about a network.

URI

GET /v2.0/networks/{network_id}

[Table 7-49](#) describes the parameters.

Table 7-49 Parameter description

Name	Mandatory	Description
network_id	Yes	Specifies the network ID.

Request Parameters

None

Example Request

GET https://{Endpoint}/v2.0/networks/0133cd73-34d4-4d4c-bf1f-e65b24603206

Response Parameters

Table 7-50 Response parameter

Parameter	Type	Description
network	network object	Specifies the network. For details, see Table 7-51 .

Table 7-51 network objects

Attribute	Type	Description
status	String	Specifies the network status. The value can be ACTIVE , BUILD , DOWN , or ERROR .
subnets	Array of strings	Specifies IDs of the subnets associated with this network. The IDs are in a list. Only one subnet can be associated with each network.

Attribute	Type	Description
name	String	Specifies the network name. The name cannot be the same as the admin_external_net value (preset network name and cannot be used).
router:external	Boolean	Specifies whether the network is an external network. The default value is false . This is an extended attribute.
admin_state_up	Boolean	Specifies the administrative status. The value can only be true .
tenant_id	String	Specifies the project ID.
shared	Boolean	Specifies whether the network can be shared by different tenants.
id	String	Specifies the network ID. This parameter is not mandatory when you query networks.
provider:network_type	String	Specifies the network type. Only the VXLAN and GENEVE networks are supported. Tenants can only set this parameter to geneve . If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as admin_external_net , this parameter is fixed at vlan and cannot be configured. Note: <ul style="list-style-type: none"> • Set this parameter to geneve if you want to create GENEVE networks. • Do not specify this parameter if you want to create VXLAN networks.
availability_zone_hints	Array of strings	Specifies the availability zones available to this network. The current version does not support cross-availability-zone network scheduling.
availability_zones	Array of strings	Specifies the availability zone of this network.
port_security_enabled	Boolean	Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping settings of all VMs in the network do not take effect.

Attribute	Type	Description
dns_domain	String	Specifies the default private network DNS domain address. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the network is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the network is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Example Response

```
{
  "network": {
    "id": "0133cd73-34d4-4d4c-bf1f-e65b24603206",
    "name": "3804f26c-7862-43b6-ad3c-48445f42de89",
    "status": "ACTIVE",
    "shared": false,
    "subnets": [
      "423796f5-e02f-476f-bf02-2b88c8ddac8b"
    ],
    "availability_zone_hints": [],
    "availability_zones": [
      "az2.dc2",
      "az5.dc5"
    ],
    "admin_state_up": true,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "provider:network_type": "vxlan",
    "router:external": false,
    "port_security_enabled": true,
    "created_at": "2018-03-23T03:51:58",
    "updated_at": "2018-03-23T03:51:58"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.3.3 Creating a Network

Function

This API is used to create a network.

URI

POST /v2.0/networks

Request Parameters

Table 7-52 Request parameter

Parameter	Type	Mandatory	Description
network	network object	Yes	Specifies the network. For details, see Table 7-53 .

Table 7-53 network objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the network name. The name cannot be the same as the admin_external_net value (preset network name and cannot be used).
admin_state_up	No	Boolean	Specifies the administrative status. The value can only be true .
shared	No	Boolean	Specifies whether the network can be shared by different tenants.

Attribute	Mandatory	Type	Description
provider:network_type	No	String	<p>Specifies the network type. Only the VXLAN and GENEVE networks are supported. Tenants can only set this parameter to geneve. If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as admin_external_net, this parameter is fixed at vlan and cannot be configured.</p> <p>Note:</p> <ul style="list-style-type: none"> Set this parameter to geneve if you want to create GENEVE networks. Do not specify this parameter if you want to create VXLAN networks.
port_security_enabled	No	Boolean	<p>Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping settings of all VMs in the network do not take effect.</p>

Example Request

Create a network named **network-test**.

POST https://{Endpoint}/v2.0/networks

```
{
  "network": {
    "name": "network-test",
    "shared": false,
    "admin_state_up": true
  }
}
```

Response Parameters

Table 7-54 Response parameter

Parameter	Type	Description
network	network object	Specifies the network. For details, see Table 7-55 .

Table 7-55 network objects

Attribute	Type	Description
status	String	Specifies the network status. The value can be ACTIVE , BUILD , DOWN , or ERROR .
subnets	Array of strings	Specifies IDs of the subnets associated with this network. The IDs are in a list. Only one subnet can be associated with each network.
name	String	Specifies the network name. The name cannot be the same as the admin_external_net value (preset network name and cannot be used).
router:external	Boolean	Specifies whether the network is an external network. The default value is false . This is an extended attribute.
admin_state_up	Boolean	Specifies the administrative status. The value can only be true .
tenant_id	String	Specifies the project ID.
shared	Boolean	Specifies whether the network can be shared by different tenants.
id	String	Specifies the network ID. This parameter is not mandatory when you query networks.
provider:network_type	String	<p>Specifies the network type. Only the VXLAN and GENEVE networks are supported.</p> <p>Tenants can only set this parameter to geneve. If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as admin_external_net, this parameter is fixed at vlan and cannot be configured.</p> <p>Note:</p> <ul style="list-style-type: none"> • Set this parameter to geneve if you want to create GENEVE networks. • Do not specify this parameter if you want to create VXLAN networks.

Attribute	Type	Description
availability_zone_hints	Array of strings	Specifies the availability zones available to this network. The current version does not support cross-availability-zone network scheduling.
availability_zones	Array of strings	Specifies the availability zone of this network.
port_security_enabled	Boolean	Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping settings of all VMs in the network do not take effect.
dns_domain	String	Specifies the default private network DNS domain address. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the network is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the network is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Example Response

```
{
  "network": {
    "id": "c360322d-5315-45d7-b7d2-481f98c56edb",
    "name": "network-test",
    "status": "ACTIVE",
    "shared": false,
    "subnets": [],
    "availability_zone_hints": [],
    "availability_zones": [
      "az2.dc2",
      "az5.dc5"
    ],
    "admin_state_up": true,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "provider:network_type": "vxlan",
    "router:external": false,
    "port_security_enabled": true,
    "created_at": "2018-09-20T01:53:18",
    "updated_at": "2018-09-20T01:53:20"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.3.4 Updating a Network

Function

This API is used to update a network.

URI

PUT /v2.0/networks/{network_id}

[Table 7-56](#) describes the parameters.

Table 7-56 Parameter description

Name	Mandatory	Description
network_id	Yes	Specifies the network ID.

Request Parameters

Table 7-57 Request parameter

Parameter	Type	Mandatory	Description
network	network object	Yes	Specifies the network. For details, see Table 7-58 . You must specify at least one attribute when updating a network.

Table 7-58 network objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the network name. The name cannot be the same as the admin_external_net value (preset network name and cannot be used).

Attribute	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status. The value can only be true .
port_security_enabled	No	Boolean	Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping settings of all VMs in the network do not take effect.

Example Request

Change the name of the network whose ID is c360322d-5315-45d7-b7d2-481f98c56edb to **network-test02**.

```
PUT https://{Endpoint}/v2.0/networks/c360322d-5315-45d7-b7d2-481f98c56edb
{
  "network": {
    "name": "network-test02"
  }
}
```

Response Parameters

Table 7-59 Response parameter

Parameter	Type	Description
network	network object	Specifies the network. For details, see Table 7-60 .

Table 7-60 network objects

Attribute	Type	Description
status	String	Specifies the network status. The value can be ACTIVE , BUILD , DOWN , or ERROR .
subnets	Array of strings	Specifies IDs of the subnets associated with this network. The IDs are in a list. Only one subnet can be associated with each network.

Attribute	Type	Description
name	String	Specifies the network name. The name cannot be the same as the admin_external_net value (preset network name and cannot be used).
router:external	Boolean	Specifies whether the network is an external network. The default value is false . This is an extended attribute.
admin_state_up	Boolean	Specifies the administrative status. The value can only be true .
tenant_id	String	Specifies the project ID.
shared	Boolean	Specifies whether the network can be shared by different tenants.
id	String	Specifies the network ID. This parameter is not mandatory when you query networks.
provider:network_type	String	Specifies the network type. Only the VXLAN and GENEVE networks are supported. Tenants can only set this parameter to geneve . If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as admin_external_net , this parameter is fixed at vlan and cannot be configured. Note: <ul style="list-style-type: none"> • Set this parameter to geneve if you want to create GENEVE networks. • Do not specify this parameter if you want to create VXLAN networks.
availability_zone_hints	Array of strings	Specifies the availability zones available to this network. The current version does not support cross-availability-zone network scheduling.
availability_zones	Array of strings	Specifies the availability zone of this network.
port_security_enabled	Boolean	Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping settings of all VMs in the network do not take effect.

Attribute	Type	Description
dns_domain	String	Specifies the default private network DNS domain address. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the network is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the network is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Example Response

```
{
  "network": {
    "id": "c360322d-5315-45d7-b7d2-481f98c56edb",
    "name": "network-test02",
    "status": "ACTIVE",
    "shared": false,
    "subnets": [],
    "availability_zone_hints": [],
    "availability_zones": [
      "az2.dc2",
      "az5.dc5"
    ],
    "admin_state_up": true,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "provider:network_type": "vxlan",
    "router:external": false,
    "port_security_enabled": true,
    "created_at": "2018-09-20T01:53:18",
    "updated_at": "2018-09-20T01:55:47"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.3.5 Deleting a Network

Function

This API is used to delete a network.

URI

DELETE /v2.0/networks/{network_id}

[Table 7-61](#) describes the parameters.

Table 7-61 Parameter description

Name	Mandatory	Description
network_id	Yes	Specifies the network ID.

Request Parameters

None

Response Parameters

None

Example Request

```
DELETE https://{Endpoint}/v2.0/networks/60c809cb-6731-45d0-ace8-3bf5626421a9
```

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.4 Subnet

7.4.1 Querying Subnets

Function

This API is used to query all subnets accessible to the tenant submitting the request.

URI

GET /v2.0/subnets

Example:

```
GET https://{Endpoint}/v2.0/subnets?
name={subnet_name}&ip_version={ip_version}&network_id={network_id}&cidr={subnet_cidr_address}&gate
way_ip={subnet_gateway}&tenant_id={tenant_id}&enable_dhcp={is_enable_dhcp}
```

Example of querying networks by page

```
GET https://{Endpoint}/v2.0/subnets?limit=2&marker=011fc878-5521-4654-a1ad-
f5b0b5820302&page_reverse=False
```

[Table 7-62](#) describes the parameters.

Table 7-62 Parameter description

Name	Mandatory	Type	Description
id	No	String	Specifies that the ID is used as the filtering condition.
name	No	String	Specifies that the subnet name is used as the filtering condition.
enable_dhcp	No	Boolean	Specifies whether DHCP is enabled for the subnet is used as the filtering condition. The value can be true or false .
cidr	No	String	Specifies that the CIDR block is used as the filtering condition.
network_id	No	String	Specifies that the network ID is used as the filtering condition.
ip_version	No	String	Specifies that the IP address version is used as the filtering condition.
gateway_ip	No	String	Specifies that the gateway IP address is used as the filtering condition.
tenant_id	No	String	Specifies that the project ID is used as the filtering condition.

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2³¹-1). The default value is 2000.</p> <p>limit can be used together with marker. For details, see the parameter description of marker.</p>

Request Parameters

None

Example Request

Example 1

```
GET https://{Endpoint}/v2.0/subnets?limit=1
```

Example 2

```
GET https://{Endpoint}/v2.0/subnets?id=011fc878-5521-4654-a1ad-f5b0b5820322
```

Response Parameters

Table 7-63 Response parameter

Parameter	Type	Description
subnets	Array of subnet objects	Specifies the subnet list. For details, see Table 7-64 .
subnets_links	Array of subnets_link objects	Specifies the pagination information. For details, see Table 7-67 . Only when limit is used for filtering and the number of resources exceeds the value of limit or 2000 (default value of limit), value next will be returned for rel and a link for href .

Table 7-64 subnet objects

Attribute	Type	Description
id	String	Specifies the subnet ID. This parameter is not mandatory when you query subnets.
name	String	Specifies the subnet name.
ip_version	Integer	Specifies the IP address version. The value can be 4 (IPv4) or 6 (IPv6).
network_id	String	Specifies the ID of the network to which the subnet belongs.
cidr	String	Specifies the CIDR format. Only the IPv4 addresses in the 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16 ranges are supported. The subnet mask cannot be greater than 28.
gateway_ip	String	The gateway IP address cannot conflict with IP addresses configured for allocation_pools . This attribute cannot be modified.

Attribute	Type	Description
allocation_pools	Array of allocation_pool objects	<p>Specifies available IP address pools. For details, see Table 7-65. Example: [{ "start": "10.0.0.2", "end": "10.0.0.251" }]</p> <p>The last three and the first IP addresses in each subnet are the ones reserved by the system. For example, in IPv4 subnet 192.168.1.0/24, IP addresses 192.168.1.0, 192.168.1.253, 192.168.1.254, and 192.168.1.255 are reserved by the system.</p> <p>By default, the IP addresses reserved by the system are not in the IP address pool specified by allocation_pool.</p> <p>When updating an IP address pool, the allocation_pool value can contain neither gateway nor broadcast IP addresses.</p>
dns_nameservers	Array of strings	<p>Specifies the DNS server address. Example: "dns_nameservers": ["8.xx.xx.8","8.xx.xx.4"]</p>
host_routes	Array of host_route objects	<p>Specifies the static VM routes. For details, see Table 7-66. Static routes are not supported, and entered information will be ignored.</p>
tenant_id	String	Specifies the project ID.
enable_dhcp	Boolean	<p>Specifies whether to enable the DHCP function. Value false indicates that the DHCP function is not enabled. The value can only be true.</p>
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	<p>Specifies the time (UTC) when the subnet is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i></p>

Attribute	Type	Description
updated_at	String	Specifies the time (UTC) when the subnet is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-65 allocation_pool objects

Parameter	Type	Description
start	String	Specifies the start IP address of a network pool.
end	String	Specifies the end IP address of a network pool.

Table 7-66 host_route objects

Parameter	Type	Description
destination	String	Specifies the destination subnet of a route.
nexthop	String	Specifies the next-hop IP address of a route.

Table 7-67 subnets_link object

Parameter	Type	Description
href	String	Specifies the API link.
rel	String	Specifies the relationship between the API link and the API version.

Example Response

Example 1

```
{
  "subnets": [
    {
      "name": "kesmdemeet",
      "cidr": "172.16.236.0/24",
      "id": "011fc878-5521-4654-a1ad-f5b0b5820302",
      "enable_dhcp": true,
      "network_id": "48efad0c-079d-4cc8-ace0-dce35d584124",
      "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
      "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    }
  ]
}
```



```
    "dns_nameservers": [],
    "allocation_pools": [
      {
        "start": "172.16.236.2",
        "end": "172.16.236.251"
      }
    ],
    "host_routes": [],
    "ip_version": 4,
    "gateway_ip": "172.16.236.1",
    "created_at": "2018-03-26T08:23:43",
    "updated_at": "2018-03-26T08:23:44"
  }
],
"subnets_links": [
  {
    "rel": "next",
    "href": "https://{Endpoint}/v2.0/subnets?limit=1&marker=011fc878-5521-4654-a1ad-f5b0b5820302"
  },
  {
    "rel": "previous",
    "href": "https://{Endpoint}/v2.0/subnets?limit=1&marker=011fc878-5521-4654-a1ad-f5b0b5820302&page_reverse=True"
  }
]
}
```

Example 2

```
{
  "subnets": [
    {
      "id": "011fc878-5521-4654-a1ad-f5b0b5820322",
      "name": "elb_alpha_vpc0_subnet0_172_16_0_0_24",
      "tenant_id": "0c55e5b2b100d5202ff6c01a2fac4580",
      "network_id": "3053b502-11b2-4599-bcf4-d9d06b6118b2",
      "ip_version": 6,
      "cidr": "2001:db8:a583:a0::/64",
      "subnetpool_id": "cb03d100-8687-4c0a-9441-ea568dcae47d",
      "allocation_pools": [{
        "start": "2001:db8:a583:a0::2",
        "end": "2001:db8:a583:a0:ffff:ffff:ffff:ffff"
      }],
      "gateway_ip": "2001:db8:a583:a0::1",
      "enable_dhcp": true,
      "ipv6_ra_mode": "dhcpv6-stateful",
      "ipv6_address_mode": "dhcpv6-stateful",
      "description": "",
      "dns_nameservers": [],
      "host_routes": [],
      "project_id": "0c55e5b2b100d5202ff6c01a2fac4580",
      "created_at": "2021-07-01T07:59:28",
      "updated_at": "2021-07-01T07:59:28"
    }
  ],
  "subnets_links": [
    {
      "rel": "previous",
      "href": "https://{Endpoint}/v2.0/subnets?limit=1&id=011fc878-5521-4654-a1ad-f5b0b5820322&marker=011fc878-5521-4654-a1ad-f5b0b5820302&page_reverse=True"
    }
  ]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.4.2 Querying a Subnet

Function

This API is used to query details about a subnet.

URI

GET /v2.0/subnets/{subnet_id}

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/subnets/011fc878-5521-4654-a1ad-f5b0b5820302
```

Response Parameters

Table 7-68 Response parameter

Parameter	Type	Description
subnet	subnet object	Specifies the subnet. For details, see Table 7-69 .

Table 7-69 subnet objects

Attribute	Type	Description
id	String	Specifies the subnet ID. This parameter is not mandatory when you query subnets.
name	String	Specifies the subnet name.
ip_version	Integer	Specifies the IP address version. The value can be 4 (IPv4) or 6 (IPv6).
network_id	String	Specifies the ID of the network to which the subnet belongs.

Attribute	Type	Description
cidr	String	Specifies the CIDR format. Only the IPv4 addresses in the 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16 ranges are supported. The subnet mask cannot be greater than 28.
gateway_ip	String	The gateway IP address cannot conflict with IP addresses configured for allocation_pools . This attribute cannot be modified.
allocation_pools	Array of allocation_pool objects	Specifies the available IP address pool. For details, see Table 7-70 . Example: [{ "start": "10.0.0.2", "end": "10.0.0.251" }] The last three and the first IP addresses in each subnet are the ones reserved by the system. For example, in subnet 192.168.1.0/24 , IP addresses 192.168.1.0, 192.168.1.253, 192.168.1.254, and 192.168.1.255 are reserved by the system. When updating an IP address pool, the allocation_pool value can contain neither gateway nor broadcast IP addresses.
dns_nameservers	Array of strings	Specifies the DNS server address. Example: "dns_nameservers": ["8.xx.xx.8", "8.xx.xx.4"]
host_routes	Array of host_route objects	Specifies the static VM routes. For details, see Table 7-71 . Static routes are not supported, and entered information will be ignored.
tenant_id	String	Specifies the project ID.
enable_dhcp	Boolean	Specifies whether to enable the DHCP function. Value false indicates that the DHCP function is not enabled. The value can only be true .

Attribute	Type	Description
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the subnet is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the subnet is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-70 allocation_pool objects

Parameter	Type	Remarks
start	String	Specifies the start IP address of a network pool.
end	String	Specifies the end IP address of a network pool.

Table 7-71 host_route objects

Parameter	Type	Remarks
destination	String	Specifies the destination subnet of a route.
nexthop	String	Specifies the next-hop IP address of a route.

Example Response

```
{
  "subnet": {
    "name": "kesmdemeet",
    "cidr": "172.16.236.0/24",
    "id": "011fc878-5521-4654-a1ad-f5b0b5820302",
    "enable_dhcp": true,
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "dns_nameservers": [],
    "allocation_pools": [
      {
        "start": "172.16.236.2",
        "end": "172.16.236.251"
      }
    ],
    "host_routes": [],
    "ip_version": 4,
  }
}
```

```
"gateway_ip": "172.16.236.1",  
"created_at": "2018-03-26T08:23:43",  
"updated_at": "2018-03-26T08:23:44"  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.4.3 Creating a Subnet

Function

This API is used to create a subnet.

URI

POST /v2.0/subnets

Request Parameters

Table 7-72 Request parameter

Parameter	Type	Mandatory	Description
subnet	subnet object	Yes	Specifies the subnet. For details, see Table 7-73 .

Table 7-73 subnet objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the subnet name.
ip_version	No	Integer	Specifies the IP address version. The value can be 4 (IPv4) or 6 (IPv6).
network_id	Yes	String	Specifies the ID of the network to which the subnet belongs.

Attribute	Mandatory	Type	Description
cidr	Yes	String	Specifies the CIDR format. Only the IPv4 addresses in the 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16 ranges are supported. The subnet mask cannot be greater than 28.
gateway_ip	No	String	The gateway IP address cannot conflict with IP addresses configured for allocation_pools . This attribute cannot be modified.
allocation_pools	No	Array of allocation_pool objects	Specifies the available IP address pool. For details, see Table 7-74 . Example: [{ "start": "10.0.0.2", "end": "10.0.0.251"}] The last three and the first IP addresses in each subnet are the ones reserved by the system. For example, in subnet 192.168.1.0/24, IP addresses 192.168.1.0, 192.168.1.253, 192.168.1.254, and 192.168.1.255 are reserved by the system. By default, the IP addresses reserved by the system are not in the IP address pool specified by allocation_pool . When updating an IP address pool, the allocation_pool value can contain neither gateway nor broadcast IP addresses.

Attribute	Mandatory	Type	Description
dns_nameservers	No	Array of strings	Specifies the DNS server address. Instructions: Example: "dns_nameservers": ["8.xx.xx.8", "8.xx.xx.4"] A maximum of five DNS server addresses are supported.
host_routes	No	Array of host_route objects	Specifies the static VM routes. For details, see Table 7-75 . Static routes are not supported, and entered information will be ignored.
enable_dhcp	No	Boolean	Specifies whether to enable the DHCP function. Value false indicates that the DHCP function is not enabled. The value can only be true .

Table 7-74 allocation_pool objects

Parameter	Mandatory	Type	Description
start	No	String	Specifies the start IP address of a network pool.
end	No	String	Specifies the end IP address of a network pool.

Table 7-75 host_route objects

Parameter	Mandatory	Type	Description
destination	No	String	Specifies the destination subnet of a route.
nexthop	No	String	Specifies the next-hop IP address of a route.

Example Request

Create an IPv4 subnet named **subnet-test**, set its network ID to 0133cd73-34d4-4d4c-bf1f-e65b24603206, and CIDR block to 172.16.2.0/24.

```
POST https://{Endpoint}/v2.0/subnets
{
  "subnet": {
    "name": "subnet-test",
    "network_id": "0133cd73-34d4-4d4c-bf1f-e65b24603206",
    "cidr": "172.16.2.0/24",
    "enable_dhcp": true
  }
}
```

Response Parameters

Table 7-76 Response parameter

Parameter	Type	Description
subnet	subnet object	Specifies the subnet. For details, see Table 7-77 .

Table 7-77 subnet objects

Attribute	Type	Description
id	String	Specifies the subnet ID. This parameter is not mandatory when you query subnets.
name	String	Specifies the subnet name.
ip_version	Integer	Specifies the IP address version. The value can be 4 (IPv4) or 6 (IPv6).
network_id	String	Specifies the ID of the network to which the subnet belongs.
cidr	String	Specifies the CIDR format. Only the addresses in the 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16 ranges are supported. In addition, the subnet mask cannot be greater than 28.

Attribute	Type	Description
gateway_ip	String	The gateway IP address cannot conflict with IP addresses configured for allocation_pools . This attribute cannot be modified.
allocation_pools	Array of allocation_pool objects	Specifies the available IP address pool. For details, see the allocation_pool objects. Table 7-78 Example: [{ "start": "10.0.0.2", "end": "10.0.0.251" }] The last three and the first IP addresses in each subnet are the ones reserved by the system. For example, in subnet 192.168.1.0/24 , IP addresses 192.168.1.0, 192.168.1.253, 192.168.1.254, and 192.168.1.255 are reserved by the system. By default, the IP addresses reserved by the system are not in the IP address pool specified by allocation_pool . When updating an IP address pool, the allocation_pool value can contain neither gateway nor broadcast IP addresses.
dns_nameservers	Array of strings	Specifies the DNS server address. Example: "dns_nameservers": ["8.xx.xx.8", "8.xx.xx.4"]
host_routes	Array of host_route objects	Specifies the static VM routes. For details, see Table 7-79 . Static routes are not supported, and entered information will be ignored.
tenant_id	String	Specifies the project ID.
enable_dhcp	Boolean	Specifies whether to enable the DHCP function. Value false indicates that the DHCP function is not enabled. The value can only be true .

Attribute	Type	Description
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the subnet is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the subnet is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-78 allocation_pool objects

Parameter	Type	Remarks
start	String	Specifies the start IP address of a network pool.
end	String	Specifies the end IP address of a network pool.

Table 7-79 host_route objects

Parameter	Type	Remarks
destination	String	Specifies the destination subnet of a route.
nexthop	String	Specifies the next-hop IP address of a route.

Example Response

```
{
  "subnet": {
    "name": "subnet-test",
    "cidr": "172.16.2.0/24",
    "id": "98bac90c-0ba7-4a63-8995-097da9bead1c",
    "enable_dhcp": true,
    "network_id": "0133cd73-34d4-4d4c-bf1f-e65b24603206",
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "dns_nameservers": [],
    "allocation_pools": [
      {
        "start": "172.16.2.2",
        "end": "172.16.2.251"
      }
    ]
  },
}
```

```
"host_routes": [],  
"ip_version": 4,  
"gateway_ip": "172.16.2.1",  
"created_at": "2018-09-20T02:02:16",  
"updated_at": "2018-09-20T02:02:16"  
}  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.4.4 Updating a Subnet

Function

This API is used to update information about a subnet.

Restrictions

When updating the **allocation_pools** field, neither gateway nor broadcast IP addresses can be included.

URI

PUT /v2.0/subnets/{subnet_id}

Request Parameters

Table 7-80 Request parameter

Parameter	Type	Mandatory	Description
subnet	subnet object	Yes	Specifies the subnet. For details, see Table 7-81 . You must specify at least one attribute when updating a subnet.

Table 7-81 subnet objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the subnet name.

Attribute	Mandatory	Type	Description
allocation_pools	No	Array of allocation_pool objects	<p>Specifies the available IP address pool. For details about the allocation_pool objects, see Table 7-82.</p> <p>Example: [{ "start": "10.0.0.2", "end": "10.0.0.251"}]</p> <p>The last three and the first IP addresses in each subnet are the ones reserved by the system. For example, in subnet 192.168.1.0/24, IP addresses 192.168.1.0, 192.168.1.253, 192.168.1.254, and 192.168.1.255 are reserved by the system. By default, the IP addresses reserved by the system are not in the IP address pool specified by allocation_pool.</p> <p>When updating an IP address pool, the allocation_pool value can contain neither gateway nor broadcast IP addresses.</p>
dns_nameservers	No	Array of strings	<p>Specifies the DNS server address.</p> <p>Instructions:</p> <p>Example: "dns_nameservers": ["8.xx.xx.8", "8.xx.xx.4"]</p> <p>A maximum of five DNS server addresses are supported.</p>
host_routes	No	Array of host_route objects	<p>Specifies the static VM routes. For details, see Table 7-83.</p> <p>Static routes are not supported, and entered information will be ignored.</p>
enable_dhcp	No	Boolean	<p>Specifies whether to enable the DHCP function. Value false indicates that the DHCP function is not enabled.</p> <p>The value can only be true.</p>

Table 7-82 allocation_pool objects

Parameter	Mandatory	Type	Description
start	No	String	Specifies the start IP address of a network pool.
end	No	String	Specifies the end IP address of a network pool.

Table 7-83 host_route objects

Parameter	Mandatory	Type	Description
destination	No	String	Specifies the destination subnet of a route.
nexthop	No	String	Specifies the next-hop IP address of a route.

Example Request

Change the name of the subnet whose ID is 98bac90c-0ba7-4a63-8995-097da9bead1c to **subnet-test**.

```
PUT https://{Endpoint}/v2.0/subnets/98bac90c-0ba7-4a63-8995-097da9bead1c
{
  "subnet": {
    "name": "subnet-test"
  }
}
```

Response Parameters

Table 7-84 Response parameter

Parameter	Type	Description
subnet	subnet object	Specifies the subnet. For details, see Table 7-85 .

Table 7-85 subnet objects

Attribute	Type	Description
id	String	Specifies the subnet ID. This parameter is not mandatory when you query subnets.
name	String	Specifies the subnet name.
ip_version	Integer	Specifies the IP address version. The value can be 4 (IPv4) or 6 (IPv6).
network_id	String	Specifies the ID of the network to which the subnet belongs.
cidr	String	Specifies the CIDR format. Only the IPv4 addresses in the 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16 ranges are supported. The subnet mask cannot be greater than 28.
gateway_ip	String	The gateway IP address cannot conflict with IP addresses configured for allocation_pools . This attribute cannot be modified.
allocation_pools	Array of allocation_pool objects	Specifies the available IP address pool. For details, see the allocation_pool objects. Table 7-86 Example: [{ "start": "10.0.0.2", "end": "10.0.0.251" }] The last three and the first IP addresses in each subnet are the ones reserved by the system. For example, in IPv4 subnet 192.168.1.0/24, IP addresses 192.168.1.0, 192.168.1.253, 192.168.1.254, and 192.168.1.255 are reserved by the system. By default, the IP addresses reserved by the system are not in the IP address pool specified by allocation_pool . When updating an IP address pool, the allocation_pool value can contain neither gateway nor broadcast IP addresses.

Attribute	Type	Description
dns_nameservers	Array of strings	Specifies the DNS server address. Example: "dns_nameservers": ["8.xx.xx.8","8.xx.xx.4"]
host_routes	Array of host_route objects	Specifies the static VM routes. For details, see Table 7-87 . Static routes are not supported, and entered information will be ignored.
tenant_id	String	Specifies the project ID.
enable_dhcp	Boolean	Specifies whether to enable the DHCP function. Value false indicates that the DHCP function is not enabled. The value can only be true .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the subnet is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the subnet is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-86 allocation_pool objects

Parameter	Type	Remarks
start	String	Specifies the start IP address of a network pool.
end	String	Specifies the end IP address of a network pool.

Table 7-87 host_route objects

Parameter	Type	Remarks
destination	String	Specifies the destination subnet of a route.

Parameter	Type	Remarks
nexthop	String	Specifies the next-hop IP address of a route.

Example Response

```
{
  "subnet": {
    "name": "subnet-test",
    "cidr": "172.16.2.0/24",
    "id": "98bac90c-0ba7-4a63-8995-097da9bead1c",
    "enable_dhcp": true,
    "network_id": "0133cd73-34d4-4d4c-bf1f-e65b24603206",
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "dns_nameservers": [],
    "allocation_pools": [
      {
        "start": "172.16.2.2",
        "end": "172.16.2.251"
      }
    ],
    "host_routes": [],
    "ip_version": 4,
    "gateway_ip": "172.16.2.1",
    "created_at": "2018-09-20T02:02:16",
    "updated_at": "2018-09-20T02:03:03"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.4.5 Deleting a Subnet

Function

This API is used to delete a subnet.

URI

DELETE /v2.0/subnets/{subnet_id}

Request Parameters

None

Response Parameters

None

Example Request

```
DELETE https://{Endpoint}/v2.0/subnets/74259164-e63a-4ad9-9c77-a1bd2c9aa187
```

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.5 Router

7.5.1 Querying Routers

Function

This API is used to query all routers accessible to the tenant submitting the request.

URI

GET /v2.0/routers

Example:

```
GET https://{Endpoint}/v2.0/routers?  
id={id}&name={name}&admin_state_up={admin_state_up}&tenant_id={tenant_id}&status={status}
```

Example of querying routers by page

```
GET https://{Endpoint}/v2.0/routers?  
limit=2&marker=01ab4be1-4447-45fb-94be-3ee787ed4ebe&page_reverse=False
```

[Table 7-88](#) describes the parameters.

Table 7-88 Parameter description

Name	Mandatory	Type	Description
id	No	String	Specifies that the router ID is used as the filtering condition.
admin_state_up	No	Boolean	Specifies that the admin state is used as the filtering condition. The value can be true or false .

Name	Mandatory	Type	Description
status	No	String	Specifies that the router status is used as the filtering condition. The value can be ACTIVE , DOWN , or ERROE .
tenant_id	No	String	Specifies that the project ID is used as the filtering condition.
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter limit . <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax ($2^{31}-1$). The default value is 2000. limit can be used together with marker . For details, see the parameter description of marker .

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/routers?limit=1
```

Response Parameters

Table 7-89 Response parameter

Parameter	Type	Description
routers	Array of router objects	Specifies the router list. For details, see Table 7-90 .
routers_links	Array of routers_link objects	Specifies the pagination information. For details, see Table 7-92 . Only when limit is used for filtering and the number of resources exceeds the value of limit or 2000 (default value of limit), value next will be returned for rel and a link for href .

Table 7-90 router objects

Attribute	Type	Description
id	String	Specifies the router ID. This parameter is not mandatory when you query routers.
name	String	Specifies the router name. The name can contain only letters, digits, underscores (_), hyphens (-), and periods (.).
admin_state_up	Boolean	Specifies the administrative status. The value can only be true .
status	String	Specifies the router status. The value can be ACTIVE , DOWN , or ERROR .
tenant_id	String	Specifies the project ID.
external_gateway_info	external_gateway_info object	Specifies the external gateway. This is an extended attribute. For details, see the external_gateway_info objects.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the router is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Attribute	Type	Description
updated_at	String	Specifies the time (UTC) when the router is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-91 external_gateway_info objects

Attribute	Type	Description
network_id	String	Specifies the UUID of the external network. You can use GET /v2.0/networks?router:external=True or run the neutron net-external-list command to query information about the external network.
enable_snat	Boolean	Specifies whether the SNAT function is enabled. The default value is false .

Table 7-92 routers_link object

Name	Type	Description
href	String	Specifies the API link.
rel	String	Specifies the relationship between the API link and the API version.

Example Response

```
{
  "routers": [
    {
      "id": "01ab4be1-4447-45fb-94be-3ee787ed4ebe",
      "name": "xiaoleizi-tag",
      "status": "ACTIVE",
      "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
      "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
      "admin_state_up": true,
      "external_gateway_info": {
        "network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
        "enable_snat": false
      },
      "routes": [
        {
          "destination": "0.0.0.0/0",
          "nexthop": "172.16.0.124"
        }
      ],
      "created_at": "2018-03-23T09:26:08",
    }
  ]
}
```

```
    "updated_at": "2018-08-24T08:49:53"
  },
],
"routers_links": [
  {
    "rel": "next",
    "href": "https://{Endpoint}/v2.0/routers?limit=1&marker=01ab4be1-4447-45fb-94be-3ee787ed4ebe"
  },
  {
    "rel": "previous",
    "href": "https://{Endpoint}/v2.0/routers?
limit=1&marker=01ab4be1-4447-45fb-94be-3ee787ed4ebe&page_reverse=True"
  }
]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.5.2 Querying a Router

Function

This API is used to query details about a router.

URI

GET /v2.0/routers/{router_id}

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/routers/01ab4be1-4447-45fb-94be-3ee787ed4ebe
```

Response Parameters

Table 7-93 Response parameter

Parameter	Type	Description
router	router object	Specifies the router. For details, see Table 7-94 .

Table 7-94 router objects

Attribute	Type	Description
id	String	Specifies the router ID. This parameter is not mandatory when you query routers.
name	String	Specifies the router name. The name can contain only letters, digits, underscores (_), hyphens (-), and periods (.).
admin_state_up	Boolean	Specifies the administrative status. The value can only be true .
status	String	Specifies the router status. The value can be ACTIVE , DOWN , or ERROR .
tenant_id	String	Specifies the project ID.
external_gateway_info	external_gateway_info object	Specifies the external gateway. This is an extended attribute. For details, see the external_gateway_info objects.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the router is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the router is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-95 external_gateway_info objects

Attribute	Type	Description
network_id	String	Specifies the UUID of the external network. You can use GET /v2.0/networks?router:external=True or run the neutron net-external-list command to query information about the external network.
enable_snat	Boolean	Specifies whether the SNAT function is enabled. The default value is false .

Example Response

```
{
  "router": {
    "id": "01ab4be1-4447-45fb-94be-3ee787ed4ebe",
    "name": "xiaoleizi-tag",
    "status": "ACTIVE",
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "admin_state_up": true,
    "external_gateway_info": {
      "network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
      "enable_snat": false
    },
    "routes": [
      {
        "destination": "0.0.0.0/0",
        "nexthop": "172.16.0.124"
      }
    ],
    "created_at": "2018-03-23T09:26:08",
    "updated_at": "2018-08-24T08:49:53"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.5.3 Creating a Router

Function

This API is used to create a router.

URI

POST /v2.0/routers

Request Parameters

Table 7-96 Request parameter

Parameter	Type	Mandatory	Description
router	router object	Yes	Specifies the router. For details, see Table 7-97 .

Table 7-97 router objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the router name. Instructions: The name can contain only letters, digits, underscores (_), hyphens (-), and periods (.).
admin_state_up	No	Boolean	Specifies the administrative status. The value can only be true .
external_gateway_info	No	external_gateway_info object	Specifies the external gateway. This is an extended attribute. For details, see the external_gateway_info objects.

Table 7-98 external_gateway_info objects

Attribute	Mandatory	Type	Description
network_id	No	String	Specifies the UUID of the external network. You can use GET /v2.0/networks?router:external=True or run the neutron net-external-list command to query information about the external network.

Example Request

Create a router named **router-test2**.

```
POST https://{Endpoint}/v2.0/routers
```

```
{
  "router": {
    "name": "router-test2",
    "admin_state_up": true
  }
}
```


Response Parameters

Table 7-99 Response parameter

Parameter	Type	Description
router	router object	Specifies the router. For details, see Table 7-100 .

Table 7-100 router objects

Attribute	Type	Description
id	String	Specifies the router ID. This parameter is not mandatory when you query routers.
name	String	Specifies the router name. The name can contain only letters, digits, underscores (_), hyphens (-), and periods (.).
admin_state_up	Boolean	Specifies the administrative status. The value can only be true .
status	String	Specifies the router status. The value can be ACTIVE , DOWN , or ERROR .
tenant_id	String	Specifies the project ID.
external_gateway_info	external_gateway_info object	Specifies the external gateway. This is an extended attribute. For details, see the external_gateway_info objects.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the router is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the router is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-101 external_gateway_info objects

Attribute	Type	Description
network_id	String	Specifies the UUID of the external network. You can use GET /v2.0/networks?router:external=True or run the neutron net-external-list command to query information about the external network.

Example Response

```
{
  "router": {
    "id": "f5dbdfe0-86f9-4b0a-9a32-6be143f0a076",
    "name": "router-test2",
    "status": "ACTIVE",
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "admin_state_up": true,
    "external_gateway_info": {
      "network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
      "enable_snat": false
    },
    "routes": [],
    "created_at": "2018-09-20T02:06:07",
    "updated_at": "2018-09-20T02:06:09"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.5.4 Updating a Router

Function

This API is used to update a router.

URI

PUT /v2.0/routers/{router_id}

Request Parameters

Table 7-102 Request parameter

Parameter	Mandatory	Type	Description
router	Yes	router object	Specifies the router. For details, see Table 7-103 . You must specify at least one attribute when updating a router.

Table 7-103 router objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the router name. Instructions: The name can contain only letters, digits, underscores (_), hyphens (-), and periods (.).
admin_state_up	No	Boolean	Specifies the administrative status. The value can only be true .
external_gateway_info	No	external_gateway_info object	Specifies the external gateway. This is an extended attribute. For details, see the external_gateway_info objects.

Table 7-104 external_gateway_info objects

Attribute	Mandatory	Type	Description
network_id	No	String	Specifies the UUID of the external network. You can use GET /v2.0/networks?router:external=True or run the neutron net-external-list command to query information about the external network.

Example Request

Change the name of the router whose ID is f5dbdfe0-86f9-4b0a-9a32-6be143f0a076 to **router-220**.

```
PUT https://{Endpoint}/v2.0/routers/f5dbdfe0-86f9-4b0a-9a32-6be143f0a076
{
  "router": {
    "name": "router-220"
  }
}
```

Response Parameters

Table 7-105 Response parameter

Parameter	Type	Description
router	router object	Specifies the router. For details, see Table 7-106 .

Table 7-106 router objects

Attribute	Type	Description
id	String	Specifies the router ID. This parameter is not mandatory when you query routers.
name	String	Specifies the router name. The name can contain only letters, digits, underscores (_), hyphens (-), and periods (.).
admin_state_up	Boolean	Specifies the administrative status. The value can only be true .
status	String	Specifies the router status. The value can be ACTIVE , DOWN , or ERROR .
tenant_id	String	Specifies the project ID.
external_gateway_info	external_gateway_info object	Specifies the external gateway. This is an extended attribute. For details, see the external_gateway_info objects.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the router is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Attribute	Type	Description
updated_at	String	Specifies the time (UTC) when the router is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-107 external_gateway_info objects

Attribute	Type	Description
network_id	String	Specifies the UUID of the external network. You can use GET /v2.0/networks?router:external=True or run the neutron net-external-list command to query information about the external network.
enable_snat	Boolean	Specifies whether the SNAT function is enabled. The default value is false .

Example Response

```
{
  "router": {
    "id": "f5dbdfe0-86f9-4b0a-9a32-6be143f0a076",
    "name": "router-220",
    "status": "ACTIVE",
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "admin_state_up": true,
    "external_gateway_info": {
      "network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
      "enable_snat": false
    },
    "routes": [],
    "created_at": "2018-09-20T02:06:07",
    "updated_at": "2018-09-20T02:06:09"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.5.5 Deleting a Router

Function

This API is used to delete a router.

URI

DELETE /v2.0/routers/{router_id}

Request Parameters

None

Response Parameters

None

Example Request

```
DELETE https://{Endpoint}/v2.0/routers/0735a367-2caf-48fb-85aa-6082266f342e
```

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.5.6 Adding an Interface to a Router

Function

This API is used to add an interface to a router.

Restrictions

- When a port is used, the port can have only one IP address.
- When a subnet is used, the gateway IP address must be configured for the subnet.
- A router cannot be added to networks whose **provider:network_type** is **geneve**.
- Only one router can be added to a subnet.

URI

PUT /v2.0/routers/{router_id}/add_router_interface

Request Parameters

Table 7-108 Request parameter

Parameter	Type	Mandatory	Description
subnet_id	String	No	Specifies the subnet ID. Either subnet_id or port_id is used. Use the gateway IP address of the subnet to create a router interface.
port_id	String	No	Specifies the port ID. Either subnet_id or port_id is used. Use the port IP address to create a router interface.

Example Request

Add an interface to the router. The router ID is i5b8e885c-1347-4ac2-baf9-2249c8ed1270, and the subnet ID is ab78be2d-782f-42a5-aa72-35879f6890ff.

```
PUT https://{Endpoint}/v2.0/routers/5b8e885c-1347-4ac2-baf9-2249c8ed1270/add_router_interface
```

```
{"subnet_id": "ab78be2d-782f-42a5-aa72-35879f6890ff"}
```

Response Parameters

Table 7-109 Response parameter

Parameter	Type	Description
subnet_id	String	Specifies the subnet ID.
tenant_id	String	Specifies the project ID.
project_id	String	Specifies the project ID.
port_id	String	Specifies the port ID.
id	String	Specifies the router ID.

Example Response

```
{
  "subnet_id": "ab78be2d-782f-42a5-aa72-35879f6890ff",
  "tenant_id": "6f9e9263116a4b68818cf1edce16bc4f",
  "project_id": "6f9e9263116a4b68818cf1edce16bc4f",
  "port_id": "40e86635-b2a3-45de-a7c8-3cced5b7e755",
  "id": "5b8e885c-1347-4ac2-baf9-2249c8ed1270"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.5.7 Removing an Interface from a Router

Function

Removing an interface from a router will also remove the port.

Restrictions

You are not allowed to remove an interface from a router if there are load balancers in the subnet.

URI

PUT /v2.0/routers/{router_id}/remove_router_interface

Request Parameters

Table 7-110 Request parameter

Parameter	Type	Mandatory	Description
subnet_id	String	No	Specifies the subnet ID. Either subnet_id or port_id must be specified. Use the gateway IP address of the subnet to create a router interface.
port_id	String	No	Specifies the port ID. Either subnet_id or port_id is used. Use the port IP address to create a router interface.

Example Request

Remove an interface from a router. The router ID is b625c58c-0cfe-49e0-acc8-f2374f8187ff, and the subnet ID is 4b910a10-0860-428b-b463-d84dbc5e288e.

```
PUT https://{Endpoint}/v2.0/routers/b625c58c-0cfe-49e0-acc8-f2374f8187ff/remove_router_interface
{"subnet_id": "4b910a10-0860-428b-b463-d84dbc5e288e"}
```

Response Parameters

Table 7-111 Response parameter

Parameter	Type	Description
subnet_id	String	Specifies the subnet ID.

Parameter	Type	Description
tenant_id	String	Specifies the project ID.
project_id	String	Specifies the project ID.
port_id	String	Specifies the port ID.
id	String	Specifies the router ID.

Example Response

```
{
  "subnet_id": "4b910a10-0860-428b-b463-d84dbc5e288e",
  "tenant_id": "3d72597871904daeb6887f75f848b531",
  "project_id": "3d72597871904daeb6887f75f848b531",
  "port_id": "34d7d063-8f40-4958-b420-096db40d4067",
  "id": "b625c58c-0cfe-49e0-acc8-f2374f8187ff"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.6 Floating IP Address

7.6.1 Querying Floating IP Addresses

Function

This API is used to query all floating IP addresses accessible to the tenant submitting the request.

You can query the detailed information about a specified floating IP address using the API for [Querying a Floating IP Address](#).

URI

GET /v2.0/floatingips

[Table 7-112](#) describes the parameters.

Table 7-112 Parameter description

Parameter	Mandatory	Type	Description
id	No	String	Specifies the floating IP address ID.
floating_ip_addresses	No	String	Specifies the floating IPv4 address.
floating_network_id	No	String	Specifies the external network ID. You can only use fixed external network. You can use GET /v2.0/networks?router:external=True or GET /v2.0/networks?name={floating_network} or run the neutron net-external-list command to obtain information about the external network.
router_id	No	String	Specifies the ID of the belonged router.
port_id	No	String	Specifies the port ID.
fixed_ip_address	No	String	Specifies the private IP address of the associated port.
tenant_id	No	String	Specifies the project ID.

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax ($2^{31}-1$). The default value is 2000. limit can be used together with marker . For details, see the parameter description of marker .

Parameter	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource

Parameter	Mandatory	Type	Description
			ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
page_reverse	No	Boolean	Specifies the page direction. The value can be True or False .

Example:

```
GET https://{Endpoint}/v2.0/floatingips?
id={fip_id}&router_id={router_id}&floating_network_id={net_id}&floating_ip_address={floating_ip}&port_id={
port_id}&fixed_ip_address={fixed_ip}&tenant_id={tenant_id}
```

Request Message

None

Response Message

Table 7-113 Response parameter

Parameter	Type	Description
floatingips	Array of floatingip objects	Specifies the floating IP address list. For details, see Table 7-114 .

Table 7-114 floatingip objects

Parameter	Type	Description
status	String	Specifies the floating IP address status. The value can be ACTIVE , DOWN , or ERROR . <ul style="list-style-type: none">• DOWN indicates that the floating IP address has not been bound.• ACTIVE indicates that the floating IP address has been bound.• ERROR indicates that the floating IP address is abnormal.
id	String	Specifies the floating IP address ID.
project_id	String	Specifies the project ID.
floating_ip_address	String	Specifies the floating IP address.
floating_network_id	String	Specifies the external network ID.
router_id	String	Specifies the ID of the belonged router.
port_id	String	Specifies the port ID.
fixed_ip_address	String	Specifies the private IP address of the associated port.
tenant_id	String	Specifies the project ID.
created_at	String	Specifies the time when the floating IP address was created. UTC time is used. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Parameter	Type	Description
updated_at	String	Specifies the time when the floating IP address was updated. UTC time is used. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Example Request

```
GET https://{Endpoint}/v2.0/floatingips?limit=1
```

Example Response

Status code: 200

Normal response to the GET operation

```
{
  "floatingips" : [ {
    "id" : "1a3a2818-d9b4-4a9c-8a19-5252c499d1cd",
    "status" : "DOWN",
    "router_id" : null,
    "tenant_id" : "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id" : "bbfe8c41dd034a07bebd592bf03b4b0c",
    "floating_network_id" : "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
    "fixed_ip_address" : null,
    "floating_ip_address" : "99.99.99.84",
    "port_id" : null,

    "created_at" : "2017-10-19T12:21:28",
    "updated_at" : "2018-07-30T12:52:13"
  } ],
  "floatingips_links" : [ {
    "href" : "https://network.region.cn-test-2.clouds.com/v2.0/floatingips.json?
limit=2000&marker=000a6144-5010-46f2-bf06-6a1c94477ea3&page_reverse=true",
    "rel" : "previous"
  }, {
    "href" : "https://network.region.cn-test-2.clouds.com/v2.0/floatingips.json?limit=2000&marker=d445e537-
bc81-4039-9c7b-f9c1f5c73c78",
    "rel" : "next"
  } ]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.6.2 Querying a Floating IP Address

Function

This API is used to query details about a specified floating IP address, including the floating IP address status, ID of the router to which the floating IP address belongs, and external network ID of the floating IP address.

URI

GET /v2.0/floatingips/{floatingip_id}

Request Message

None

Response Message

Table 7-115 Response parameter

Parameter	Type	Description
floatingip	floatingip object	Specifies the floating IP address list. For details, see Table 7-116 .

Table 7-116 floatingip objects

Attribute	Type	Description
status	String	Specifies the floating IP address status. The value can be ACTIVE , DOWN , or ERROR . <ul style="list-style-type: none">• DOWN indicates that the floating IP address has not been bound.• ACTIVE indicates that the floating IP address has been bound.• ERROR indicates that the floating IP address is abnormal.

Attribute	Type	Description
id	String	Specifies the floating IP address ID.
project_id	String	Specifies the project ID.
floating_ip_address	String	Specifies the floating IP address.
floating_network_id	String	Specifies the external network ID.
router_id	String	Specifies the ID of the belonged router.
port_id	String	Specifies the port ID.
fixed_ip_address	String	Specifies the private IP address of the associated port.
tenant_id	String	Specifies the project ID.
created_at	String	Specifies the time when the floating IP address was created. UTC time is used. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time when the floating IP address was updated. UTC time is used. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Example Request

```
GET https://{Endpoint}/v2.0/floatingips/1a3a2818-d9b4-4a9c-8a19-5252c499d1cd
```

Example Response

Status code: 200

```
{
  "floatingip": {
    "id": "1a3a2818-d9b4-4a9c-8a19-5252c499d1cd",
    "status": "DOWN",
    "router_id": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "floating_network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
    "fixed_ip_address": null,
    "floating_ip_address": "99.99.99.84",
  }
}
```

```
"port_id": null,  
"created_at": "2017-10-19T12:21:28",  
"updated_at": "2018-07-30T12:52:13"  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.6.3 Assigning a Floating IP Address

Function

When assigning a floating IP address, you need to obtain the external network ID **floating_network_id** of the floating IP address.

You can use **GET /v2.0/networks?router:external=True** or run the **neutron net-external-list** command to obtain the UUID of the external network required for assigning a floating IP address.

URI

POST /v2.0/floatingips

Request Message

Table 7-117 Request parameter

Parameter	Type	Mandatory	Description
floatingip	floatingip object	Yes	Specifies the floating IP address list. For details, see Table 7-118 .

Table 7-118 floatingip objects

Parameter	Mandatory	Type	Description
floating_ip_address	No	String	Specifies the floating IP address.

Parameter	Mandatory	Type	Description
floating_network_id	Yes	String	Specifies the external network ID. You can only use fixed external network. You can use GET /v2.0/networks?router:external=True or GET /v2.0/networks?name={floating_network} or run the neutron net-external-list mode command to obtain information about the external network.
port_id	No	String	Specifies the port ID.
fixed_ip_addresses	No	String	Specifies the private IP address of the associated port.

Response Message

Table 7-119 Response parameter

Parameter	Type	Description
floatingip	floatingip object	Specifies the floating IP address list. For details, see Table 7-120 .

Table 7-120 floatingip objects

Attribute	Type	Description
status	String	Specifies the floating IP address status. The value can be ACTIVE , DOWN , or ERROR . <ul style="list-style-type: none"> • DOWN indicates that the floating IP address has not been bound. • ACTIVE indicates that the floating IP address has been bound. • ERROR indicates that the floating IP address is abnormal.

Attribute	Type	Description
id	String	Specifies the floating IP address ID.
floating_ip_address	String	Specifies the floating IP address.
floating_network_id	String	Specifies the external network ID.
router_id	String	Specifies the ID of the belonged router.
port_id	String	Specifies the port ID.
fixed_ip_address	String	Specifies the private IP address of the associated port.
tenant_id	String	Specifies the project ID.

Example Request

Create a floating IP address whose network is **0a2228f2-7f8a-45f1-8e09-9039e1d09975**.

```
POST https://{Endpoint}/v2.0/floatingips
{
  "floatingip": {
    "floating_network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975"
  }
}
```

Example Response

Status code: 201

Normal response to POST requests

```
{
  "floatingip": {
    "id": "b997e0d4-3359-4c74-8f88-bc0af81cd5a2",
    "status": "DOWN",
    "router_id": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",

    "floating_network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
    "fixed_ip_address": null,
    "floating_ip_address": "88.88.215.205",
    "port_id": null,
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.6.4 Updating a Floating IP Address

Function

This API is used to update a floating IP address.

During the update, the ID of the floating IP address must be provided in the URL.

If **port_id** is left blank, the floating IP address has been unbound from the port.

NOTE

This API has the following constraints:

- If a floating IP address that you are binding is in the **error** state, unbind the IP address first.
- Do not associate a port that has a floating IP address associated to another floating IP address. You must first disassociate the port from the IP address and then associate it with another IP address.

URI

PUT /v2.0/floatingips/{floatingip_id}

[Table 7-121](#) describes the parameters.

Table 7-121 Parameter description

Parameter	Mandatory	Type	Description
floatingip_id	Yes	String	Specifies the floating IP address ID. This parameter is not required when you assign a floating IP address. This parameter is mandatory when you query, update, or delete a floating IP address.

Request Message

Table 7-122 Request parameter

Parameter	Type	Mandatory	Description
floatingip	floatingip object	Yes	Specifies the floating IP address list. For details, see Table 7-123 .

Table 7-123 floatingip objects

Parameter	Mandatory	Type	Description
port_id	No	String	Specifies the port ID.

Response Message

Table 7-124 Response parameter

Parameter	Type	Description
floatingip	floatingip object	Specifies the floating IP address list. For details, see Table 7-125 .

Table 7-125 floatingip objects

Attribute	Type	Description
status	String	Specifies the floating IP address status. The value can be ACTIVE , DOWN , or ERROR . <ul style="list-style-type: none"> • DOWN indicates that the floating IP address has not been bound. • ACTIVE indicates that the floating IP address has been bound. • ERROR indicates that the floating IP address is abnormal.
id	String	Specifies the floating IP address ID.
floating_ip_address	String	Specifies the floating IP address.
floating_network_id	String	Specifies the external network ID.
router_id	String	Specifies the ID of the belonged router.
port_id	String	Specifies the port ID.

Attribute	Type	Description
fixed_ip_address	String	Specifies the private IP address of the associated port.
tenant_id	String	Specifies the project ID.

Example Request

- Unbind a floating IP address from a port.
PUT https://{Endpoint}/v2.0/floatingips/b997e0d4-3359-4c74-8f88-bc0af81cd5a2

```
{
  "floatingip": {
    "port_id": null
  }
}
```
- Bind a floating IP address to a port. The port ID is f91f5763-c5a2-4458-979d-61e48b3c3fac.
PUT https://{Endpoint}/v2.0/floatingips/b997e0d4-3359-4c74-8f88-bc0af81cd5a2

```
{
  "floatingip": {
    "port_id": "f91f5763-c5a2-4458-979d-61e48b3c3fac"
  }
}
```

Example Response

Status code: 200

(The floating IP address is unbound from the port.)

```
{
  "floatingip": {
    "id": "b997e0d4-3359-4c74-8f88-bc0af81cd5a2",
    "status": "DOWN",
    "router_id": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "floating_network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
    "fixed_ip_address": null,
    "floating_ip_address": "88.88.215.205",
    "port_id": null,
  }
}
```

(The floating IP address is bound to the port.)

```
{
  "floatingip": {
    "id": "b997e0d4-3359-4c74-8f88-bc0af81cd5a2",
    "status": "DOWN",
    "router_id": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "floating_network_id": "0a2228f2-7f8a-45f1-8e09-9039e1d09975",
    "fixed_ip_address": "192.168.10.3",
    "floating_ip_address": "88.88.215.205",
    "port_id": "f91f5763-c5a2-4458-979d-61e48b3c3fac",
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.6.5 Deleting a Floating IP Address

Function

This API is used to delete a floating IP address.

URI

DELETE /v2.0/floatingips/{floatingip_id}

[Table 7-126](#) describes the parameters.

Table 7-126 Parameter description

Parameter	Mandatory	Type	Description
floatingip_id	Yes	String	Specifies the floating IP address ID.

Request Message

None

Response Message

None

Example Request

Delete the floating IP address whose ID is a95ec431-8473-463b-aede-34fb048ee3a7.

```
DELETE https://{Endpoint}/v2.0/floatingips/a95ec431-8473-463b-aede-34fb048ee3a7
```

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7 Network ACL

7.7.1 Querying Network ACL Rules

Function

This API is used to query all network ACL rules accessible to the tenant submitting the request.

URI

GET /v2.0/fwaas/firewall_rules

Example:

```
GET https://{Endpoint}/v2.0/fwaas/firewall_rules?
name={firewall_rule_name}&tenant_id={tenant_id}&public={is_public}&protocol={protocol}&ip_version={ip_v
ersion}&action={action}&enabled={is_enabled}
```

Example of querying rules by page

```
GET https://{Endpoint}/v2.0/fwaas/firewall_rules?limit=2&marker=2a193015-4a88-4aa1-84ad-
d4955adae707&page_reverse=False
```

[Table 7-127](#) describes the parameters.

Table 7-127 Parameter description

Name	Mandatory	Type	Description
id	No	String	Specifies that the network ACL rule ID is used as the filtering condition.
name	No	String	Specifies that the network ACL rule name is used as the filtering condition.
description	No	String	Specifies that the network ACL rule description is used as the filtering condition.
ip_version	No	Integer	Specifies that the IP address version is used as the filtering condition. The value can be 4 (IPv4) or 6 (IPv6).

Name	Mandatory	Type	Description
action	No	String	Specifies that the network ACL rule action is used as the filtering condition. The value can be allow or deny .
enabled	No	Boolean	Specifies that the network ACL rule is enabled is used as the filtering condition. The value can be true or false .
tenant_id	No	String	Specifies that the project ID is used as the filtering condition.
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter limit . <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2 ³¹ -1). The default value is 2000. limit can be used together with marker . For details, see the parameter description of marker .

Request Parameters

None

Example Request

GET https://{Endpoint}/v2.0/fwaas/firewall_rules

Response Parameters

Table 7-128 Response parameter

Parameter	Type	Description
firewall_rules	Array of Firewall Rule objects	Specifies the firewall rule list. For details, see Table 7-130 .
firewall_rules_links	Array of firewall_rules_links Object	Specifies the pagination information. For details, see Table 7-129 . Only when limit is used for filtering and the number of resources exceeds the value of limit or 2000 (default value of limit), value next will be returned for rel and a link for href .

Table 7-129 firewall_rules_link object

Parameter	Type	Description
href	String	Specifies the API link.
rel	String	Specifies the relationship between the API link and the API version.

Table 7-130 Firewall Rule objects

Attribute	Type	Description
id	String	Specifies the UUID of the network ACL rule.
name	String	Specifies the network ACL rule name.
description	String	Provides supplementary information about the network ACL rule.

Attribute	Type	Description
tenant_id	String	Specifies the project ID.
public	Boolean	Specifies whether the firewall rule can be shared by different tenants.
protocol	String	Specifies the IP protocol.
source_port	String	Specifies the source port number or port number range.
destination_port	String	Specifies the destination port number or port number range.
ip_version	Integer	Specifies the IP protocol version.
source_ip_address	String	Specifies the source IP address or CIDR block.
destination_ip_address	String	Specifies the destination IP address or CIDR block.
action	String	Specifies action performed on traffic passing through the network ACL.
enabled	Boolean	Specifies whether the network ACL rule is enabled.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Example Response

```
{
  "firewall_rules": [
    {
      "protocol": "tcp",
      "description": "update check parameter",
      "source_ip_address": "116.66.184.0/24",
      "destination_ip_address": "0.0.0.0/0",
      "destination_port": null,
      "source_port": null,
      "id": "2a193015-4a88-4aa1-84ad-d4955adae707",
      "name": "crhfwruleupdate",
      "tenant_id": "a1c6f90c94334bd2953d9a61b8031a68",
      "project_id": "a1c6f90c94334bd2953d9a61b8031a68",
      "enabled": true,
      "action": "allow",
      "ip_version": 4,
      "public": false
    },
    {
      "protocol": "tcp",
      "description": "update check parameter",
      "source_ip_address": null,
      "destination_ip_address": null,
      "destination_port": "40:60",
      "source_port": "20:50",
      "id": "db7a204c-9eb1-40a2-9bd6-ed5cfd3cff32",
    }
  ]
}
```

```
"name": "update_firewall-role-tommy",
"tenant_id": "a1c6f90c94334bd2953d9a61b8031a68",
"project_id": "a1c6f90c94334bd2953d9a61b8031a68",
"enabled": false,
"action": "deny",
"ip_version": 4,
"public": false
}
],
"firewall_rules_links": [
{ "rel": "previous",
"href": "https://{Endpoint}/v2.0/fwaas/firewall_rules?marker=2a193015-4a88-4aa1-84ad-
d4955adae707&page_reverse=True"
}
]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.2 Querying a Network ACL Rule

Function

This API is used to query details about a specific network ACL rule.

URI

GET /v2.0/fwaas/firewall_rules/{firewall_rule_id}

[Table 7-131](#) describes the parameters.

Table 7-131 Parameter description

Name	Mandatory	Type	Description
firewall_rule_id	Yes	String	Specifies the network ACL rule ID, which uniquely identifies the network ACL rule. The firewall_rule_id value is used as the filter.

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/fwaas/firewall_rules/514e6776-162a-4b5d-ab8b-aa36b86655ef
```

Response Parameters

Table 7-132 Response parameter

Parameter	Type	Description
firewall_rule	firewall_rule object	Specifies the firewall rule objects. For details, see Table 7-133 .

Table 7-133 Firewall Rule objects

Attribute	Type	Description
id	String	Specifies the UUID of the network ACL rule.
name	String	Specifies the network ACL rule name.
description	String	Provides supplementary information about the network ACL rule.
tenant_id	String	Specifies the project ID.
public	Boolean	Specifies whether the firewall rule can be shared by different tenants.
protocol	String	Specifies the IP protocol.
source_port	String	Specifies the source port number or port number range.
destination_port	String	Specifies the destination port number or port number range.
ip_version	Integer	Specifies the IP protocol version.
source_ip_address	String	Specifies the source IP address or CIDR block.
destination_ip_address	String	Specifies the destination IP address or CIDR block.
action	String	Specifies action performed on traffic passing through the network ACL.
enabled	Boolean	Specifies whether the network ACL rule is enabled.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Example Response

```
{
  "firewall_rule": {
    "protocol": "tcp",
    "description": "update check parameter",
    "source_ip_address": "116.66.184.0/24",
    "destination_ip_address": "0.0.0.0/0",
    "destination_port": null,
    "source_port": null,
    "id": "514e6776-162a-4b5d-ab8b-aa36b86655ef",
    "name": "test",
    "tenant_id": "a1c6f90c94334bd2953d9a61b8031a68",
    "project_id": "a1c6f90c94334bd2953d9a61b8031a68",
    "enabled": true,
    "action": "allow",
    "ip_version": 4,
    "public": false
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.3 Creating a Network ACL Rule

Function

This API is used to create a network ACL rule.

URI

POST /v2.0/fwaas/firewall_rules

Request Parameters

Table 7-134 Request parameter

Parameter	Mandatory	Type	Description
firewall_rule	Yes	firewall_rule object	Specifies the firewall rule objects. For details, see Table 7-135 .

Table 7-135 Firewall Rule objects

Attribute	Mandatory	Type	Constraint	Description
name	No	String	The value can contain a maximum of 255 characters.	Specifies the network ACL rule name. The value can contain a maximum of 255 characters.
description	No	String	The value can contain a maximum of 255 characters.	Provides supplementary information about the network ACL rule. The value can contain a maximum of 255 characters.
protocol	No	String	The value can be TCP, UDP, or ICMP .	Specifies the IP protocol. The value can be TCP, UDP, or ICMP .
source_port	No	String	The value can be an integer from 1 to 65535 or a port number range in the format of a.b .	Specifies the source port number or port number range. The value can be an integer from 1 to 65535 or a port number range in the format of a.b .
destination_port	No	String	The value can be an integer from 1 to 65535 or a port number range in the format of a.b .	Specifies the destination port number or port number range. The value can be an integer from 1 to 65535 or a port number range in the format of a.b .
ip_version	No	Integer	4/6	Specifies the IP protocol version. The value can be 4 and 6 , indicating IPv4 address and IPv6 address, respectively.
source_ip_address	No	String	N/A	Specifies the source IP address or CIDR block.

Attribute	Mandatory	Type	Constraint	Description
destination_ip_address	No	String	N/A	Specifies the destination IP address or CIDR block.
action	No	String	deny/allow	Specifies action performed on traffic passing through the network ACL. The value can be deny or allow .
enabled	No	Boolean	The value can be true or false .	Specifies whether the network ACL rule is enabled. The value can be true or false .

Example Request

Create an ACL rule with **action** set to **allow**, **protocol** set to **tcp**, and destination port set to 80.

POST https://{Endpoint}/v2.0/fwaas/firewall_rules

```
{
  "firewall_rule": {
    "action": "allow",
    "enabled": true,
    "destination_port": "80",
    "protocol": "tcp",
    "name": "ALLOW_HTTP"
  }
}
```

Response Parameters

Table 7-136 Response parameter

Parameter	Type	Description
firewall_rule	firewall_rule object	Specifies the firewall rule objects. For details, see Table 7-137 .

Table 7-137 Firewall Rule objects

Attribute	Type	Description
id	String	Specifies the UUID of the network ACL rule.

Attribute	Type	Description
name	String	Specifies the network ACL rule name.
description	String	Provides supplementary information about the network ACL rule.
tenant_id	String	Specifies the project ID.
public	Boolean	Specifies whether the firewall rule can be shared by different tenants.
protocol	String	Specifies the IP protocol.
source_port	String	Specifies the source port number or port number range.
destination_port	String	Specifies the destination port number or port number range.
ip_version	Integer	Specifies the IP protocol version.
source_ip_address	String	Specifies the source IP address or CIDR block.
destination_ip_address	String	Specifies the destination IP address or CIDR block.
action	String	Specifies action performed on traffic passing through the network ACL.
enabled	Boolean	Specifies whether the network ACL rule is enabled.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Example Response

```
{
  "firewall_rule": {
    "protocol": "tcp",
    "description": "",
    "source_ip_address": null,
    "destination_ip_address": null,
    "source_port": null,
    "destination_port": "80",
    "id": "b94acf06-efc2-485d-ba67-a61acf2a7e28",
    "name": "ALLOW_HTTP",
    "tenant_id": "23c8a121505047b6869edf39f3062712",
    "enabled": true,
    "action": "allow",
    "ip_version": 4,
    "public": false,
    "project_id": "23c8a121505047b6869edf39f3062712"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.4 Updating a Rule

Function

This API is used to update a network ACL rule.

URI

PUT /v2.0/fwaas/firewall_rules/{firewall_rule_id}

Request Parameters

Table 7-138 Request parameter

Parameter	Type	Mandatory	Description
firewall_rule	firewall_rule object	Yes	Specifies the firewall rule objects. For details, see Table 7-139 .

Table 7-139 Firewall Rule objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the network ACL rule name. The value can contain a maximum of 255 characters.
description	No	String	Provides supplementary information about the network ACL rule. The value can contain a maximum of 255 characters.
protocol	No	String	Specifies the IP protocol. The value can be TCP , UDP , ICMP , or a value ranging from 0 to 255.

Attribute	Mandatory	Type	Description
source_port	No	String	Specifies the source port number or port number range. The value can be an integer from 1 to 65535 or a port number range in the format of <i>a.b</i> .
destination_port	No	String	Specifies the destination port number or port number range. The value can be an integer from 1 to 65535 or a port number range in the format of <i>a.b</i> .
ip_version	No	Integer	Specifies the IP protocol version. The value can be 4 and 6 , indicating IPv4 address and IPv6 address, respectively.
source_ip_address	No	String	Specifies the source IP address or CIDR block.
destination_ip_address	No	String	Specifies the destination IP address or CIDR block.
action	No	String	Specifies action performed on traffic passing through the network ACL. The value can be deny or allow .
enabled	No	Boolean	Specifies whether the network ACL rule is enabled. The value can be true or false .

Example Request

Change the **action** of the ACL rule whose ID is b94acf06-efc2-485d-ba67-a61acf2a7e28 to **deny**.

```
PUT https://{Endpoint}/v2.0/fwaas/firewall_rules/b94acf06-efc2-485d-ba67-a61acf2a7e28
```

```
{
  "firewall_rule": {
    "action": "deny"
  }
}
```

Response Parameters

Table 7-140 Response parameter

Parameter	Type	Description
firewall_rule	firewall_rule object	Specifies the firewall rule objects. For details, see Table 7-141 .

Table 7-141 Firewall Rule objects

Attribute	Type	Description
id	String	Specifies the UUID of the network ACL rule.
name	String	Specifies the network ACL rule name.
description	String	Provides supplementary information about the network ACL rule.
tenant_id	String	Specifies the project ID.
public	Boolean	Specifies whether the firewall rule can be shared by different tenants.
protocol	String	Specifies the IP protocol.
source_port	String	Specifies the source port number or port number range.
destination_port	String	Specifies the destination port number or port number range.
ip_version	Integer	Specifies the IP protocol version.
source_ip_address	String	Specifies the source IP address or CIDR block.
destination_ip_address	String	Specifies the destination IP address or CIDR block.
action	String	Specifies action performed on traffic passing through the network ACL.
enabled	Boolean	Specifies whether the network ACL rule is enabled.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Example Response

```
{
  "firewall_rule": {
    "protocol": "tcp",
    "description": "",
    "source_ip_address": null,
    "destination_ip_address": null,
    "source_port": null,
    "destination_port": "80",
    "id": "b94acf06-efc2-485d-ba67-a61acf2a7e28",
    "name": "ALLOW_HTTP",
    "tenant_id": "23c8a121505047b6869edf39f3062712",
    "enabled": true,
    "action": "deny",
    "ip_version": 4,
    "public": false,
    "project_id": "23c8a121505047b6869edf39f3062712"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.5 Deleting a Network ACL Rule

Function

This API is used to delete a network ACL rule.

NOTE

Before deleting a rule, you need to remove the rule from the corresponding policy first. For details, see [Removing a Network ACL Rule](#).

URI

DELETE /v2.0/fwaas/firewall_rules/{firewall_rule_id}

[Table 7-142](#) describes the parameters.

Table 7-142 Parameter description

Name	Mandatory	Type	Description
firewall_rule_id	Yes	String	Specifies the network ACL rule ID, which uniquely identifies the network ACL rule.

Request Parameters

None

Response Parameters

None

Example Request

```
DELETE https://{Endpoint}/v2.0/fwaas/firewall_rules/b94acf06-efc2-485d-ba67-a61acf2a7e28
```

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.6 Querying Network ACL Policies

Function

This API is used to query all network ACL policies accessible to the tenant submitting the request.

URI

GET /v2.0/fwaas/firewall_policies

Example of querying policies by page

```
GET https://{Endpoint}/v2.0/fwaas/firewall_policies?limit=2&marker=6b70e321-0c21-4b83-bb8a-a886d1414a5f&page_reverse=False
```

[Table 7-143](#) describes the parameters.

Table 7-143 Parameter description

Name	Mandatory	Type	Description
id	No	String	Specifies that the network ACL policy ID is used as the filtering condition.
name	No	String	Specifies that the network ACL policy name is used as the filtering condition.

Name	Mandatory	Type	Description
description	No	String	Specifies that the network ACL policy description is used as the filtering condition.
tenant_id	No	String	Specifies that the project ID of the network ACL policy is used as the filtering condition.
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.

Name	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2 ³¹ -1). The default value is 2000. limit can be used together with marker . For details, see the parameter description of marker .

Request Parameters

None

Example Request

GET https://{Endpoint}/v2.0/fwaas/firewall_policies

Response Parameters

Table 7-144 Response parameter

Parameter	Type	Description
firewall_policies	Array of firewall Policy object	Specifies the firewall policies. For details, see Table 7-145 .
firewall_policies_links	Array of firewall policies_link object	firewall_policies_link object For details, see Table 7-146 . Only when limit is used for filtering and the number of resources exceeds the value of limit or 2000 (default value of limit), value next will be returned for rel and a link for href .

Table 7-145 firewall_Policy object

Attribute	Type	Description
id	String	Specifies the UUID of the network ACL policy.

Attribute	Type	Description
name	String	Specifies the name of the network ACL policy.
description	String	Provides supplementary information about the network ACL policy.
tenant_id	String	Specifies the project ID.
firewall_rules	Array of strings	Specifies the rules referenced by the network ACL policy.
audited	Boolean	Specifies the audit flag.
public	Boolean	Specifies whether the policy can be shared by different tenants.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Table 7-146 firewall_policies_link object

Name	Type	Description
href	String	Specifies the API link.
rel	String	Specifies the relationship between the API link and the API version.

Example Response

```
{
  "firewall_policies": [
    {
      "description": "",
      "firewall_rules": [
        "6c6803e0-ca8c-4aa9-afb3-4f89275b6c32"
      ],
      "tenant_id": "23c8a121505047b6869edf39f3062712",
      "public": false,
      "id": "6b70e321-0c21-4b83-bb8a-a886d1414a5f",
      "audited": false,
      "name": "fwp1",
      "project_id": "23c8a121505047b6869edf39f3062712"
    },
    {
      "description": "",
      "firewall_rules": [
        "6c6803e0-ca8c-4aa9-afb3-4f89275b6c32"
      ],
      "tenant_id": "23c8a121505047b6869edf39f3062712",
      "public": false,
      "id": "fce92002-5a15-465d-aaca-9b44453bb738",
      "audited": false,
      "name": "fwp2",
    }
  ]
}
```

```
    "project_id": "23c8a121505047b6869edf39f3062712"
  }
],
"firewall_policies_links": [
  { "rel": "previous",
    "href": "https://{Endpoint}/v2.0/fwaas/firewall_policies?marker=6b70e321-0c21-4b83-bb8a-
a886d1414a5f&page_reverse=True"
  }
]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.7 Querying a Network ACL Policy

Function

This API is used to query details about a specific network ACL policy.

URI

GET /v2.0/fwaas/firewall_policies/{firewall_policy_id}

[Table 7-147](#) describes the parameters.

Table 7-147 Parameter description

Name	Mandatory	Type	Description
firewall_policy_id	Yes	String	Specifies the network ACL policy ID, which uniquely identifies the network ACL policy. The firewall_policy_id value is used as the filter.

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/fwaas/firewall_policies/fed2d88f-d0e7-4cc5-bd7e-c495f67037b6
```

Response Parameters

Table 7-148 Response parameter

Parameter	Type	Description
firewall_policy	firewall_policy object	Specifies the firewall policy. For details, see Table 7-149 .

Table 7-149 Firewall Policy objects

Attribute	Type	Description
id	String	Specifies the UUID of the network ACL policy.
name	String	Specifies the name of the network ACL policy.
description	String	Provides supplementary information about the network ACL policy.
tenant_id	String	Specifies the project ID.
firewall_rules	Array of strings	Specifies the firewall rules referenced by the network ACL policy.
audited	Boolean	Specifies the audit flag.
public	Boolean	Specifies whether the firewall policy can be shared by different tenants.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Example Response

```
{
  "firewall_policy": {
    "description": "",
    "firewall_rules": [
      "3c0e6267-73df-4d9a-87a6-e226f2db2036"
    ],
    "tenant_id": "23c8a121505047b6869edf39f3062712",
    "public": false,
    "id": "fed2d88f-d0e7-4cc5-bd7e-c495f67037b6",
    "audited": false,
    "name": "bobby_fwp1",
    "project_id": "23c8a121505047b6869edf39f3062712"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.8 Creating a Network ACL Policy

Function

This API is used to create a network ACL policy which must be bound to a network ACL group.

URI

POST /v2.0/fwaas/firewall_policies

Request Parameters

Table 7-150 Request parameter

Parameter	Type	Mandatory	Description
firewall_policy	firewall_policy object	Yes	Specifies the firewall policy. For details, see Table 7-151 .

Table 7-151 Firewall Policy objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the name of the network ACL policy. The value can contain a maximum of 255 characters.
description	No	String	Provides supplementary information about the network ACL policy. The value can contain a maximum of 255 characters.
firewall_rules	No	Array of strings	Specifies the firewall rules referenced by the network ACL policy.
audited	No	Boolean	Specifies the audit flag. The value can be true or false .

Example Request

Create an ACL policy named **test-policy** and associate it with the ACL rule whose ID is b8243448-cb3c-496e-851c-dadade4c161b.

POST https://{Endpoint}/v2.0/fwaas/firewall_policies

```
{
  "firewall_policy": {
    "name": "test-policy",
    "firewall_rules": [
      "b8243448-cb3c-496e-851c-dadade4c161b"
    ]
  }
}
```

Response Parameters

Table 7-152 Response parameter

Parameter	Type	Description
firewall_policy	firewall_policy object	Specifies the firewall policy. For details, see Table 7-153 .

Table 7-153 Firewall Policy objects

Attribute	Type	Description
id	String	Specifies the UUID of the network ACL policy.
name	String	Specifies the name of the network ACL policy.
description	String	Provides supplementary information about the network ACL policy.
tenant_id	String	Specifies the project ID.
firewall_rules	Array of strings	Specifies the firewall rules referenced by the network ACL policy.
audited	Boolean	Specifies the audit flag.
public	Boolean	Specifies whether the firewall policy can be shared by different tenants.

Attribute	Type	Description
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Example Response

```
{
  "firewall_policy": {
    "description": "",
    "firewall_rules": [
      "b8243448-cb3c-496e-851c-dadade4c161b"
    ],
    "tenant_id": "23c8a121505047b6869edf39f3062712",
    "public": false,
    "id": "2fb0e81f-9f63-44b2-9894-c13a3284594a",
    "audited": false,
    "name": "test-policy",
    "project_id": "23c8a121505047b6869edf39f3062712"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.9 Updating a Network ACL Policy

Function

This API is used to update a network ACL policy.

URI

PUT /v2.0/fwaas/firewall_policies/{firewall_policy_id}

Request Parameters

Table 7-154 Request parameter

Parameter	Type	Mandatory	Description
firewall_polic y	firewall_poli cy object	Yes	Specifies the firewall policy objects. For details, see Table 7-155 .

Table 7-155 Firewall Policy objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the name of the network ACL policy. The value can contain a maximum of 255 characters.
description	No	String	Provides supplementary information about the network ACL policy. The value can contain a maximum of 255 characters.
firewall_rules	No	Array of strings	Specifies the firewall rules referenced by the network ACL policy.
audited	No	Boolean	Specifies the audit flag. The value can be true or false .

Example Request

Associate the ACL policy whose ID is 2fb0e81f-9f63-44b2-9894-c13a3284594a to the ACL rule whose ID is 0f82b221-8cd6-44bd-9dfc-0e118fa7b6b1.

PUT https://{Endpoint}/v2.0/fwaaS/firewall_policies/2fb0e81f-9f63-44b2-9894-c13a3284594a

```
{
  "firewall_policy": {
    "firewall_rules": [
      "0f82b221-8cd6-44bd-9dfc-0e118fa7b6b1"
    ]
  }
}
```

Response Parameters

Table 7-156 Response parameter

Parameter	Type	Description
firewall_policy	firewall_policy object	Specifies the firewall policy objects. For details, see Table 7-157 .

Table 7-157 Firewall Policy objects

Attribute	Type	Description
id	String	Specifies the UUID of the network ACL policy.
name	String	Specifies the name of the network ACL policy.
description	String	Provides supplementary information about the network ACL policy.
tenant_id	String	Specifies the project ID.
firewall_rules	Array of strings	Specifies the firewall rules referenced by the network ACL policy.
audited	Boolean	Specifies the audit flag.
public	Boolean	Specifies whether the firewall policy can be shared by different tenants.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .

Example Response

```
{
  "firewall_policy": {
    "description": "",
    "firewall_rules": [
      "0f82b221-8cd6-44bd-9dfc-0e118fa7b6b1"
    ],
    "tenant_id": "23c8a121505047b6869edf39f3062712",
    "public": false,
    "id": "2fb0e81f-9f63-44b2-9894-c13a3284594a",
    "audited": false,
    "name": "test-policy",
    "project_id": "23c8a121505047b6869edf39f3062712"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.10 Deleting a Network ACL Policy

Function

This API is used to delete a network ACL policy.

URI

DELETE /v2.0/fwaas/firewall_policies/{firewall_policy_id}

[Table 7-158](#) describes the parameters.

Table 7-158 Parameter description

Name	Mandatory	Type	Description
firewall_policy_id	Yes	String	Specifies the network ACL policy ID, which uniquely identifies the network ACL policy.

Request Parameters

None

Response Parameters

None

Example Request

```
DELETE https://{Endpoint}/v2.0/fwaas/firewall_policies/2fb0e81f-9f63-44b2-9894-c13a3284594a
```

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.11 Inserting a Network ACL Rule

Function

This API is used to insert a network ACL rule to a network ACL policy.

URI

PUT /v2.0/fwaas/firewall_policies/{firewall_policy_id}/insert_rule

[Table 7-159](#) describes the parameters.

Table 7-159 Parameter description

Name	Mandatory	Type	Description
firewall_policy_id	Yes	String	Specifies the network ACL policy ID, which uniquely identifies the network ACL policy.

Request Parameters

Table 7-160 Request parameter

Parameter	Type	Mandatory	Description
firewall_rule_id	String	Yes	Specifies the network ACL rule ID, which uniquely identifies the network ACL rule.
insert_after	String	No	The insert_after parameter indicates the firewall rule that has already been associated with the firewall policy. A new firewall rule will be inserted after the firewall rule associated with the firewall policy. If both the insert_after and insert_before parameters are specified, the insert_after parameter will be ignored.
insert_before	String	No	The insert_before parameter indicates the firewall rule that has already been associated with the firewall policy. A new firewall rule will be inserted before the firewall rule associated with the firewall policy. If both the insert_after and insert_before parameters are specified, the insert_after parameter will be ignored.

Example Request

Insert rule 0f82b221-8cd6-44bd-9dfc-0e118fa7b6b1 below rule b8243448-cb3c-496e-851c-dadade4c161b in the ACL policy whose ID is afc52ce9-5305-4ec9-9feb-44feb8330341.

```
PUT https://{Endpoint}/v2.0/fwaas/firewall_policies/afc52ce9-5305-4ec9-9feb-44feb8330341/insert_rule
{
  "insert_after": "b8243448-cb3c-496e-851c-dadade4c161b",
  "firewall_rule_id": "0f82b221-8cd6-44bd-9dfc-0e118fa7b6b1",
  "insert_before": ""
}
```

Response Parameters

Table 7-161 Response parameter

Parameter	Type	Description
description	String	Provides supplementary information about the firewall policy.
audited	Boolean	Each time the firewall policy or the associated firewall rules are changed, this attribute will be set to False .
firewall_rules	Array of strings	Specifies the ID list of the firewall rules associated with the current firewall policy.
id	String	Specifies the firewall policy ID.
name	String	Specifies the firewall policy name.
public	Boolean	If this attribute is set to true , the network ACL policy is visible to tenants other than its owner. The network ACL policy is not visible to other tenants by default.
tenant_id	String	Specifies the project ID.
project_id	String	Specifies the project ID.

Example Response

```
{
  "description": "",
  "firewall_rules": [
    "b8243448-cb3c-496e-851c-dadade4c161b",
    "0f82b221-8cd6-44bd-9dfc-0e118fa7b6b1"
  ],
  "tenant_id": "23c8a121505047b6869edf39f3062712",
  "public": false,
  "id": "afc52ce9-5305-4ec9-9feb-44feb8330341",
  "audited": false,
  "name": "test-policy",
```

```

"project_id": "23c8a121505047b6869edf39f3062712"
}

```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.12 Removing a Network ACL Rule

Function

This API is used to remove a network ACL rule from a network ACL policy.

URI

PUT /v2.0/fwaas/firewall_policies/{firewall_policy_id}/remove_rule

Request Parameters

Table 7-162 Request parameter

Parameter	Type	Mandatory	Description
firewall_rule_id	String	Yes	Specifies the network ACL rule ID, which uniquely identifies the network ACL rule.

Example Request

Remove ACL rule 0f82b221-8cd6-44bd-9dfc-0e118fa7b6b1 from the ACL policy whose ID is afc52ce9-5305-4ec9-9feb-44feb8330341.

```

PUT https://{Endpoint}/v2.0/fwaas/firewall_policies/afc52ce9-5305-4ec9-9feb-44feb8330341/remove_rule
{
  "firewall_rule_id": "0f82b221-8cd6-44bd-9dfc-0e118fa7b6b1"
}

```

Response Parameters

Table 7-163 Response parameter

Parameter	Type	Description
description	String	Provides supplementary information about the firewall policy.

Parameter	Type	Description
audited	Boolean	Each time the firewall policy or the associated firewall rules are changed, this attribute will be set to False .
firewall_rules	Array of strings	Specifies the ID list of the firewall rules associated with the current firewall policy.
id	String	Specifies the firewall policy ID.
name	String	Specifies the firewall policy name.
public	Boolean	If this attribute is set to true , the network ACL policy is visible to tenants other than its owner. The network ACL policy is not visible to other tenants by default.
tenant_id	String	Specifies the project ID.
project_id	String	Specifies the project ID.

Example Response

```
{
  "description": "",
  "firewall_rules": [
    "b8243448-cb3c-496e-851c-dadade4c161b"
  ],
  "tenant_id": "23c8a121505047b6869edf39f3062712",
  "public": false,
  "id": "afc52ce9-5305-4ec9-9feb-44feb8330341",
  "audited": false,
  "name": "test-policy",
  "project_id": "23c8a121505047b6869edf39f3062712"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.13 Querying Network ACL Groups

Function

This API is used to query all network ACL groups accessible to the tenant submitting the request.

URI

GET /v2.0/fwaas/firewall_groups

Example of querying groups by page

```
GET https://{Endpoint}/v2.0/fwaas/firewall_groups?  
limit=2&marker=cd600d47-0045-483f-87a1-5041ae2f513b&page_reverse=False
```

Table 7-164 describes the parameters.

Table 7-164 Parameter description

Name	Mandatory	Type	Description
id	No	String	Specifies that the ID of the network ACL group is used as the filtering condition.
name	No	String	Specifies that the name of the network ACL group is used as the filtering condition.
description	No	String	Specifies that the description of the network ACL group is used as the filtering condition.
admin_state_up	No	Boolean	Specifies that the admin state of the network ACL group is used as the filtering condition. The value can be true or false .
tenant_id	No	String	Specifies that the project ID of the network ACL group is used as the filtering condition.

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2³¹-1). The default value is 2000.</p> <p>limit can be used together with marker. For details, see the parameter description of marker.</p>

Request Parameters

None

Example Request

GET https://{Endpoint}/v2.0/fwaas/firewall_groups

Response Parameters

Table 7-165 Response parameter

Parameter	Type	Description
firewall_groups	Array of Firewall Group objects	Specifies the firewall group list. For details, see Table 7-166 .
firewall_groups_links	Array of firewall_groups_link objects	Specifies the firewall_groups_link object list. For details, see Table 7-167 . Only when limit is used for filtering and the number of resources exceeds the value of limit or 2000 (default value of limit), value next will be returned for rel and a link for href .

Table 7-166 Firewall Group objects

Attribute	Type	Description
id	String	Specifies the UUID of the network ACL group.
name	String	Specifies the name of the network ACL group.
description	String	Provides supplementary information about the network ACL group.
tenant_id	String	Specifies the project ID.
ingress_firewall_policy_id	String	Specifies the network ACL policy for inbound traffic.
egress_firewall_policy_id	String	Specifies the network ACL policy for outbound traffic.
ports	Array of strings	Specifies the list of ports bound with the network ACL group.
public	Boolean	Specifies whether the firewall group can be shared by different tenants.
status	String	Specifies the status of a network ACL group.

Attribute	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the network ACL.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the resource is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the resource is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-167 firewall_groups_link object

Name	Type	Description
href	String	Specifies the API link.
rel	String	Specifies the relationship between the API link and the API version.

Example Response

```
{
  "firewall_groups": [
    {
      "status": "INACTIVE",
      "public": false,
      "egress_firewall_policy_id": null,
      "name": "",
      "admin_state_up": true,
      "ports": [ ],
      "tenant_id": "23c8a121505047b6869edf39f3062712",
      "id": "cd600d47-0045-483f-87a1-5041ae2f513b",
      "ingress_firewall_policy_id": null,
      "description": "",
      "project_id": "23c8a121505047b6869edf39f3062712",
      "created_at": "2018-09-12T08:24:14",
      "updated_at": "2018-09-12T08:24:14"
    },
    {
      "status": "INACTIVE",
      "public": false,
      "egress_firewall_policy_id": "d939df29-fe76-4089-90c3-3778e4d53141",
      "name": "fwg-1475475043",
      "admin_state_up": true,
      "ports": [ ],
      "tenant_id": "0af57070695044ea9a70f04779e6aa1f",
      "id": "ca971b45-70ce-4879-9734-b6cac1d00845",
      "ingress_firewall_policy_id": "d939df29-fe76-4089-90c3-3778e4d53141",
      "description": "",
      "project_id": "0af57070695044ea9a70f04779e6aa1f",
    }
  ]
}
```

```
    "created_at": "2018-09-12T08:24:14",  
    "updated_at": "2018-09-12T08:24:14"  
  }  
],  
  "firewall_groups_links": [  
    { "rel": "previous",  
      "href": "https://{Endpoint}/v2.0/fwaas/firewall_groups?  
marker=cd600d47-0045-483f-87a1-5041ae2f513b&page_reverse=True"  
    }  
  ]  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.14 Querying a Network ACL Group

Function

This API is used to query details about a specific network ACL group.

URI

GET /v2.0/fwaas/firewall_groups/{firewall_group_id}

[Table 7-168](#) describes the parameters.

Table 7-168 Parameter description

Name	Mandatory	Type	Description
firewall_group_id	Yes	String	Specifies the network ACL group ID, which uniquely identifies the network ACL group. The fire_group_id value is used as the filter.

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/fwaas/firewall_groups/a504a4cf-9300-40e0-b2d4-649bd157c55a
```

Response Parameters

Table 7-169 Response parameter

Parameter	Type	Description
firewall_group	firewall_group object	Specifies the firewall group. For details, see Table 7-170 .

Table 7-170 Firewall Group objects

Attribute	Type	Description
id	String	Specifies the UUID of the network ACL group.
name	String	Specifies the name of the network ACL group.
description	String	Provides supplementary information about the network ACL group.
tenant_id	String	Specifies the project ID.
ingress_firewall_policy_id	String	Specifies the network ACL policy for inbound traffic.
egress_firewall_policy_id	String	Specifies the network ACL policy for outbound traffic.
ports	Array of strings	Specifies the list of ports bound with the network ACL group.
public	Boolean	Specifies whether the firewall group can be shared by different tenants.
status	String	Specifies the status of the network ACL policy.
admin_state_up	Boolean	Specifies the administrative status of the network ACL.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the resource is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Attribute	Type	Description
updated_at	String	Specifies the time (UTC) when the resource is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Example Response

```
{
  "firewall_group": {
    "status": "ACTIVE",
    "public": false,
    "egress_firewall_policy_id": null,
    "name": "bobby_fwg1",
    "admin_state_up": true,
    "ports": [
      "16e6d779-15e9-48fb-abc5-b86457792a15"
    ],
    "tenant_id": "23c8a121505047b6869edf39f3062712",
    "id": "a504a4cf-9300-40e0-b2d4-649bd157c55a",
    "ingress_firewall_policy_id": "fed2d88f-d0e7-4cc5-bd7e-c495f67037b6",
    "description": "test",
    "project_id": "23c8a121505047b6869edf39f3062712",
    "created_at": "2018-09-12T08:24:14",
    "updated_at": "2018-09-12T08:24:14"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.15 Creating a Network ACL Group

Function

This API is used to create a network ACL group.

URI

POST /v2.0/fwaas/firewall_groups

Request Parameters

Table 7-171 Request parameter

Parameter	Type	Mandatory	Description
firewall_group	firewall_group object	Yes	Specifies the firewall group. For details, see Table 7-172 .

Table 7-172 Firewall Group objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the name of the network ACL group. The value can contain a maximum of 255 characters.
description	No	String	Provides supplementary information about the network ACL group. The value can contain a maximum of 255 characters.
ingress_firewall_policy_id	No	String	Specifies the network ACL policy for inbound traffic.
egress_firewall_policy_id	No	String	Specifies the network ACL policy for outbound traffic.
ports	No	Array of strings	Specifies the list of ports bound with the network ACL group. The value must be the port ID. NOTE The port is the one whose device_owner is network:router_interface_distributed . <ul style="list-style-type: none"> Call the VPC API for querying the port ID. The filtering criteria are the specified network_id and device_owner. The network_id is the network ID of the subnet associated with the network ACL. Example: GET https://{Endpoint}/v1/{project_id}/ports?network_id={network_id}&device_owner=network%3Arouter_interface_distributed
admin_state_up	No	Boolean	Specifies the administrative status of the network ACL. The value can be true or false .

Example Request

Create an ACL group, associate it with the inbound ACL policy `afc52ce9-5305-4ec9-9feb-44feb8330341`, and set the port ID to `c133f2bf-6937-4416-bb17-012e1be5cd2d`.

```
POST https://{Endpoint}/v2.0/fwaas/firewall_groups
{
  "firewall_group": {
    "name": "test",
    "ingress_firewall_policy_id": "afc52ce9-5305-4ec9-9feb-44feb8330341",
    "ports": [
      "c133f2bf-6937-4416-bb17-012e1be5cd2d"
    ]
  }
}
```

Response Parameters

Table 7-173 Response parameter

Parameter	Type	Description
firewall_group	firewall_group object	Specifies the firewall group. For details, see Table 7-174 .

Table 7-174 Firewall Group objects

Attribute	Type	Description
id	String	Specifies the UUID of the network ACL group.
name	String	Specifies the name of the network ACL group.
description	String	Provides supplementary information about the network ACL group.
tenant_id	String	Specifies the project ID.
ingress_firewall_policy_id	String	Specifies the network ACL policy for inbound traffic.
egress_firewall_policy_id	String	Specifies the network ACL policy for outbound traffic.
ports	Array of strings	Specifies the list of ports bound with the network ACL group.
public	Boolean	Specifies whether the firewall group can be shared by different tenants.

Attribute	Type	Description
status	String	Specifies the status of the network ACL policy.
admin_state_up	Boolean	Specifies the administrative status of the network ACL.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the resource is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the resource is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Example Response

```
{
  "firewall_group": {
    "status": "PENDING_CREATE",
    "public": false,
    "egress_firewall_policy_id": null,
    "name": "test",
    "admin_state_up": true,
    "ports": [
      "c133f2bf-6937-4416-bb17-012e1be5cd2d"
    ],
    "tenant_id": "23c8a121505047b6869edf39f3062712",
    "id": "0415f554-26ed-44e7-a881-bdf4e6216e38",
    "ingress_firewall_policy_id": "afc52ce9-5305-4ec9-9feb-44feb8330341",
    "description": "",
    "project_id": "23c8a121505047b6869edf39f3062712",
    "created_at": "2018-09-12T08:24:14",
    "updated_at": "2018-09-12T08:24:14"
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.16 Updating a Network ACL Group

Function

This API is used to update a network ACL group.

URI

PUT /v2.0/fwaas/firewall_groups/{firewall_group_id}

Request Parameters

Table 7-175 Request parameter

Parameter	Type	Mandatory	Description
firewall_group	firewall_group object	Yes	Specifies the firewall group. For details, see Table 7-176 .

Table 7-176 Firewall Group objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the name of the network ACL group. The value can contain a maximum of 255 characters.
description	No	String	Provides supplementary information about the network ACL group. The value can contain a maximum of 255 characters.
ingress_firewall_policy_id	No	String	Specifies the network ACL policy for inbound traffic.
egress_firewall_policy_id	No	String	Specifies the network ACL policy for outbound traffic.

Attribute	Mandatory	Type	Description
ports	No	Array of strings	Specifies the list of ports bound with the network ACL group. The value must be the port ID. NOTE The port is the one whose device_owner is network:router_interface_distributed . <ul style="list-style-type: none"> Call the VPC API for querying the port ID. The filtering criteria are the specified network_id and device_owner. The network_id is the network ID of the subnet associated with the network ACL. Example: GET https://{Endpoint}/v1/{project_id}/ports?network_id={network_id}&device_owner=network%3Arouter_interface_distributed
admin_state_up	No	Boolean	Specifies the administrative status of the network ACL. The value can be true or false .

Example Request

Associate the ACL group whose ID is 2fb0e81f-9f63-44b2-9894-c13a3284594a with the outbound ACL policy 53f36c32-db25-4856-a0ba-e605fd88c5e9.

```
PUT https://{Endpoint}/v2.0/fwaa/firewall_groups/2fb0e81f-9f63-44b2-9894-c13a3284594a
```

```
{
  "firewall_group": {
    "egress_firewall_policy_id": "53f36c32-db25-4856-a0ba-e605fd88c5e9"
  }
}
```

Response Parameters

Table 7-177 Response parameter

Parameter	Type	Description
firewall_group	firewall_group object	Specifies the firewall group. For details, see Table 7-178 .

Table 7-178 Firewall Group objects

Attribute	Type	Description
id	String	Specifies the UUID of the network ACL group.
name	String	Specifies the name of the network ACL group.
description	String	Provides supplementary information about the network ACL group.
tenant_id	String	Specifies the project ID.
ingress_firewall_policy_id	String	Specifies the network ACL policy for inbound traffic.
egress_firewall_policy_id	String	Specifies the network ACL policy for outbound traffic.
ports	Array of strings	Specifies the list of ports bound with the network ACL group.
public	Boolean	Specifies whether the firewall group can be shared by different tenants.
status	String	Specifies the status of the network ACL policy.
admin_state_up	Boolean	Specifies the administrative status of the network ACL.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the resource is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the resource is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Example Response

```
{
  "firewall_group": {
    "status": "PENDING_UPDATE",
    "public": false,
    "egress_firewall_policy_id": "53f36c32-db25-4856-a0ba-e605fd88c5e9",
    "name": "",
    "admin_state_up": true,
    "ports": [
      "c133f2bf-6937-4416-bb17-012e1be5cd2d"
    ],
    "tenant_id": "23c8a121505047b6869edf39f3062712",
  }
}
```

```
{
  "id": "0415f554-26ed-44e7-a881-bdf4e6216e38",
  "ingress_firewall_policy_id": "afc52ce9-5305-4ec9-9feb-44feb8330341",
  "description": "",
  "project_id": "23c8a121505047b6869edf39f3062712",
  "created_at": "2018-09-12T08:24:14",
  "updated_at": "2018-09-12T08:24:14"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.7.17 Deleting a Network ACL Group

Function

This API is used to delete a network ACL group.

URI

DELETE /v2.0/fwaas/firewall_groups/{firewall_group_id}

[Table 7-179](#) describes the parameters.

Table 7-179 Parameter description

Name	Mandatory	Type	Description
firewall_group_id	Yes	String	Specifies the network ACL group ID, which uniquely identifies the network ACL group.

Request Parameters

None

Response Parameters

None

Example Request

```
DELETE https://{Endpoint}/v2.0/fwaas/firewall_groups/0415f554-26ed-44e7-a881-bdf4e6216e38
```

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.8 Security Group

7.8.1 Querying Security Groups

Function

This API is used to query all security groups accessible to the tenant submitting the request.

URI

GET /v2.0/security-groups

Example of querying security groups by page

```
GET https://{Endpoint}/v2.0/security-groups?  
limit=2&marker=0431c9c5-1660-42e0-8a00-134bec7f03e2&page_reverse=False
```

[Table 7-180](#) describes the parameters.

Table 7-180 Parameter description

Name	Mandatory	Type	Description
id	No	String	Specifies that the ID is used as the filtering condition.
name	No	String	Specifies that the name is used as the filtering condition.
description	No	String	Specifies that the description is used as the filtering condition.
tenant_id	No	String	Specifies that the project ID is used as the filtering condition.

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax ($2^{31}-1$). The default value is 2000.</p> <p>limit can be used together with marker. For details, see the parameter description of marker.</p>

Request Parameters

None

Example Request

GET <https://{Endpoint}/v2.0/security-groups?limit=1>

Response Parameters

Table 7-181 Response parameter

Parameter	Type	Description
security_groups	Array of Security Group objects	Specifies the security group list. For details, see Table 7-182 .
security_groups_links	Array of SecurityGroupsLink objects	Shows pagination information about security groups. Only when limit is used for filtering and the number of resources exceeds the value of limit or 2000 (default value of limit), value next will be returned for rel and a link for href .

Table 7-182 Security Group objects

Attribute	Type	Description
id	String	Specifies the security group ID. This parameter is not mandatory when you query security groups.
tenant_id	String	Specifies the project ID.
name	String	Specifies the security group name.
description	String	Provides supplementary information about the security group.
security_group_rules	Array of Security Group Rule objects	Specifies the security group rule list. For details, see Table 7-183 .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the security group is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the security group is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-183 Security Group Rule objects

Attribute	Type	Description
id	String	Specifies the security group rule ID. This parameter is not mandatory when you query security group rules.
description	String	Provides supplementary information about the security group rule.
security_group_id	String	Specifies the ID of the belonged security group.
remote_group_id	String	Specifies the peer ID of the belonged security group.
direction	String	Specifies the direction of the traffic for which the security group rule takes effect.
remote_ip_prefix	String	Specifies the peer IP address segment.
protocol	String	Specifies the protocol type or the IP protocol number.
port_range_max	Integer	Specifies the maximum port number. When ICMP is used, the value is the ICMP code.
port_range_min	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both port_range_max and port_range_min must be specified, and the port_range_max value must be greater than the port_range_min value. When the ICMP protocol is used, if you specify the ICMP code (port_range_max), you must also specify the ICMP type (port_range_min).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
remote_address_group_id	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.

Attribute	Type	Description
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the security group rule is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the security group rule is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-184 SecurityGroupsLink objects

Parameter	Type	Description
href	String	Specifies the API link.
rel	String	Specifies the relationship between the API link and the API version.

Example Response

```
{
  "security_groups": [
    {
      "id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
      "name": "sg-ad3f",
      "description": "",
      "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
      "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
      "security_group_rules": [
        {
          "id": "d90e55ba-23bd-4d97-b722-8cb6fb485d69",
          "direction": "ingress",
          "protocol": null,
          "ethertype": "IPv4",
          "description": null,
          "remote_group_id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
          "remote_ip_prefix": null,
          "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
          "port_range_max": null,
          "port_range_min": null,
          "security_group_id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
          "remote_address_group_id": "0150a3a7-82ca-4569-865c-04e46e5e9249"
        },
        {
          "id": "aecff4d4-9ce9-489c-86a3-803aedec65f7",
          "direction": "egress",
          "protocol": null,
          "ethertype": "IPv4",
          "description": null,
          "remote_group_id": null,
          "remote_ip_prefix": null,
          "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
          "port_range_max": null,
          "port_range_min": null
        }
      ]
    }
  ]
}
```

```
        "port_range_min": null,  
        "security_group_id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",  
        "remote_address_group_id": null  
      }  
    ],  
    "created_at": "2018-09-12T08:24:14",  
    "updated_at": "2018-09-12T08:24:14"  
  }  
],  
"security_groups_links": [  
  {  
    "rel": "next",  
    "href": "https://{Endpoint}/v2.0/security-groups?  
limit=1&marker=0431c9c5-1660-42e0-8a00-134bec7f03e2"  
  },  
  {  
    "rel": "previous",  
    "href": "https://{Endpoint}/v2.0/security-groups?  
limit=1&marker=0431c9c5-1660-42e0-8a00-134bec7f03e2&page_reverse=True"  
  }  
]  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.8.2 Querying a Security Group

Function

This API is used to query details about a specific security group.

URI

GET /v2.0/security-groups/{security_group_id}

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/security-groups/0431c9c5-1660-42e0-8a00-134bec7f03e2
```

Response Parameters

Table 7-185 Response parameter

Parameter	Type	Description
security_group	security_group object	Specifies the security group. For details, see Table 7-186 .

Table 7-186 Security Group objects

Attribute	Type	Description
id	String	Specifies the security group ID. This parameter is not mandatory when you query security groups.
tenant_id	String	Specifies the project ID.
name	String	Specifies the security group name.
description	String	Provides supplementary information about the security group.
security_group_rules	Array of Security Group Rule objects	Specifies the security group rule list. For details, see Table 7-187 .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the security group is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the security group is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-187 Security Group Rule objects

Attribute	Type	Description
id	String	Specifies the security group rule ID. This parameter is not mandatory when you query security group rules.
description	String	Provides supplementary information about the security group rule.
security_group_id	String	Specifies the ID of the belonged security group.
remote_group_id	String	Specifies the peer ID of the belonged security group.
direction	String	Specifies the direction of the traffic for which the security group rule takes effect.
remote_ip_prefix	String	Specifies the peer IP address segment.

Attribute	Type	Description
protocol	String	Specifies the protocol type or the IP protocol number.
port_range_max	Integer	Specifies the maximum port number. When ICMP is used, the value is the ICMP code.
port_range_min	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both port_range_max and port_range_min must be specified, and the port_range_max value must be greater than the port_range_min value. When the ICMP protocol is used, if you specify the ICMP code (port_range_max), you must also specify the ICMP type (port_range_min).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
remote_address_group_id	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the security group rule is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the security group rule is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Example Response

```
{
  "security_group": {
    "id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
    "name": "sg-ad3f",
```

```
"description": "",
"tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
"project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
"security_group_rules": [
  {
    "id": "d90e55ba-23bd-4d97-b722-8cb6fb485d69",
    "direction": "ingress",
    "protocol": null,
    "ethertype": "IPv4",
    "description": null,
    "remote_group_id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
    "remote_ip_prefix": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "port_range_max": null,
    "port_range_min": null,
    "security_group_id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
    "remote_address_group_id": "0150a3a7-82ca-4569-865c-04e46e5e9249"
  },
  {
    "id": "aecff4d4-9ce9-489c-86a3-803aedec65f7",
    "direction": "egress",
    "protocol": null,
    "ethertype": "IPv4",
    "description": null,
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "port_range_max": null,
    "port_range_min": null,
    "security_group_id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
    "remote_address_group_id": null
  }
],
"created_at": "2018-09-12T08:24:14",
"updated_at": "2018-09-12T08:24:14"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.8.3 Creating a Security Group

Function

This API is used to create a security group.

URI

POST /v2.0/security-groups

Request Parameters

Table 7-188 Request parameter

Parameter	Mandatory	Type	Description
security_group	Yes	security_group object	Specifies the security group. For details, see Table 7-189 .

Table 7-189 Security Group objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the security group name.
description	No	String	Provides supplementary information about the security group.

Example Request

Create a security group named **sg-test**.

POST https://{Endpoint}/v2.0/security-groups

```
{
  "security_group": {
    "name": "sg-test"
  }
}
```

Response Parameters

Table 7-190 Response parameter

Parameter	Type	Description
security_group	security_group object	Specifies the security group. For details, see Table 7-191 .

Table 7-191 Security Group objects

Attribute	Type	Description
id	String	Specifies the security group ID. This parameter is not mandatory when you query security groups.
tenant_id	String	Specifies the project ID.
name	String	Specifies the security group name.
description	String	Provides supplementary information about the security group.
security_group_rules	Array of Security Group Rule objects	Specifies the security group rule list. For details, see Table 7-192 .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the security group is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the security group is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-192 Security Group Rule objects

Attribute	Type	Description
id	String	Specifies the security group rule ID. This parameter is not mandatory when you query security group rules.
description	String	Provides supplementary information about the security group rule.
security_group_id	String	Specifies the ID of the belonged security group.
remote_group_id	String	Specifies the peer ID of the belonged security group.
direction	String	Specifies the direction of the traffic for which the security group rule takes effect.
remote_ip_prefix	String	Specifies the peer IP address segment.

Attribute	Type	Description
protocol	String	Specifies the protocol type or the IP protocol number.
port_range_max	Integer	Specifies the maximum port number. When ICMP is used, the value is the ICMP code.
port_range_min	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both port_range_max and port_range_min must be specified, and the port_range_max value must be greater than the port_range_min value. When the ICMP protocol is used, if you specify the ICMP code (port_range_max), you must also specify the ICMP type (port_range_min).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
remote_address_group_id	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the security group rule is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the security group rule is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Example Response

```
{
  "security_group": {
    "id": "d29ae17d-f355-4992-8747-1fb66cc9afd2",
    "name": "sg-test",
```



```
"description": "",
"tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
"project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
"security_group_rules": [
  {
    "id": "3f51e52c-0e85-40f7-a137-85927392e436",
    "direction": "egress",
    "protocol": null,
    "ethertype": "IPv4",
    "description": null,
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "port_range_max": null,
    "port_range_min": null,
    "security_group_id": "d29ae17d-f355-4992-8747-1fb66cc9afd2",
    "remote_address_group_id": null
  },
  {
    "id": "6332de3e-98fb-4f8c-b44a-fcb8ff09881e",
    "direction": "egress",
    "protocol": null,
    "ethertype": "IPv6",
    "description": null,
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "port_range_max": null,
    "port_range_min": null,
    "security_group_id": "d29ae17d-f355-4992-8747-1fb66cc9afd2",
    "remote_address_group_id": null
  }
],
"created_at": "2018-09-20T02:15:34",
"updated_at": "2018-09-20T02:15:34"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.8.4 Updating a Security Group

Function

This API is used to update a security group.

URI

PUT /v2.0/security-groups/{security_group_id}

Request Parameters

Table 7-193 Request parameter

Parameter	Type	Mandatory	Description
security_group	security_group object	Yes	Specifies the security group. For details, see Table 7-194 . You must specify at least one attribute when updating a security group.

Table 7-194 Security Group objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the security group name.
description	No	String	Provides supplementary information about the security group.

Example Request

Change the name of the security group whose ID is d29ae17d-f355-4992-8747-1fb66cc9afd2 to **sg-test02**.

```
PUT https://{Endpoint}/v2.0/security-groups/d29ae17d-f355-4992-8747-1fb66cc9afd2
{
  "security_group": {
    "name": "sg-test02"
  }
}
```

Response Parameters

Table 7-195 Response parameter

Parameter	Type	Description
security_group	security_group object	Specifies the security group objects. For details, see Table 7-196 .

Table 7-196 Security Group objects

Attribute	Type	Description
id	String	Specifies the security group ID. This parameter is not mandatory when you query security groups.
tenant_id	String	Specifies the project ID.
name	String	Specifies the security group name.
description	String	Provides supplementary information about the security group.
security_group_rules	Array of Security Group Rule objects	Specifies the security group rule list. For details, see Table 7-197 .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the security group is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the security group is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-197 Security Group Rule objects

Attribute	Type	Description
id	String	Specifies the security group rule ID. This parameter is not mandatory when you query security group rules.
description	String	Provides supplementary information about the security group rule.
security_group_id	String	Specifies the ID of the belonged security group.
remote_group_id	String	Specifies the peer ID of the belonged security group.
direction	String	Specifies the direction of the traffic for which the security group rule takes effect.
remote_ip_prefix	String	Specifies the peer IP address segment.

Attribute	Type	Description
protocol	String	Specifies the protocol type or the IP protocol number.
port_range_max	Integer	Specifies the maximum port number. When ICMP is used, the value is the ICMP code.
port_range_min	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both port_range_max and port_range_min must be specified, and the port_range_max value must be greater than the port_range_min value. When the ICMP protocol is used, if you specify the ICMP code (port_range_max), you must also specify the ICMP type (port_range_min).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
remote_address_group_id	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the security group rule is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the security group rule is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Example Response

```
{
  "security_group": {
    "id": "d29ae17d-f355-4992-8747-1fb66cc9afd2",
    "name": "sg-test02",
```

```
"description": "",
"tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
"project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
"security_group_rules": [
  {
    "id": "6332de3e-98fb-4f8c-b44a-fcb8ff09881e",
    "direction": "egress",
    "protocol": null,
    "ethertype": "IPv6",
    "description": null,
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "port_range_max": null,
    "port_range_min": null,
    "security_group_id": "d29ae17d-f355-4992-8747-1fb66cc9afd2",
    "remote_address_group_id": "0150a3a7-82ca-4569-865c-04e46e5e9249"
  },
  {
    "id": "3f51e52c-0e85-40f7-a137-85927392e436",
    "direction": "egress",
    "protocol": null,
    "ethertype": "IPv4",
    "description": null,
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
    "port_range_max": null,
    "port_range_min": null,
    "security_group_id": "d29ae17d-f355-4992-8747-1fb66cc9afd2",
    "remote_address_group_id": null
  }
],
"created_at": "2018-09-20T02:15:34",
"updated_at": "2018-09-20T02:16:31"
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.8.5 Deleting a Security Group

Function

This API is used to delete a security group.

URI

DELETE /v2.0/security-groups/{security_group_id}

Request Parameters

None

Response Parameters

None

Example Request

```
DELETE https://{Endpoint}/v2.0/security-groups/a7ebb1d8-71e5-42e5-9030-4e0fca059d50
```

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.8.6 Querying Security Group Rules

Function

This API is used to query all security group rules accessible to the tenant submitting the request.

URI

GET /v2.0/security-group-rules

Example:

```
GET https://{Endpoint}/v2.0/security-group-rules?  
security_group_id={security_group_id}&remote_group_id={remote_group_id}&direction={direction}&remote_i  
p_prefix={remote_ip_prefix}&protocol={protocol}&port_range_max={port_range_max}&port_range_min={port  
_range_min}&ethertype={ethertype}&tenant_id={tenant_id}
```

Example of querying security group rules by page

```
GET https://{Endpoint}/v2.0/networks?limit=2&marker=07adc044-3f21-4eeb-  
bd57-5e5eb6024b7f&page_reverse=False
```

[Table 7-198](#) describes the parameters.

Table 7-198 Parameter description

Name	Mandato ry	Type	Description
id	No	String	Specifies that the security group rule ID is used as the filtering condition.

Name	Mandatory	Type	Description
description	No	String	Specifies that the description is used as the filtering condition.
remote_group_id	No	String	Specifies the ID of the remote security group associated with the security group rule is used as the filtering condition.
security_group_id	No	String	Specifies the ID of the corresponding security group is used as the filtering condition.
direction	No	String	Specifies the security group rule direction is used as the filtering condition. The value can be ingress or egress .
protocol	No	String	Specifies that the IP protocol is used as the filtering condition.
remote_ip_prefix	No	String	Specifies the remote IP address range matching the security group rule is used as the filtering condition.
ethertype	No	String	Specifies that the network type is used as the filtering condition.
port_range_max	No	Integer	Specifies that the maximum port is used as the filtering condition.
port_range_min	No	Integer	Specifies that the minimum port is used as the filtering condition.
tenant_id	No	String	Specifies that the project ID is used as the filtering condition.

Name	Mandatory	Type	Description
marker	No	String	<p>Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID.</p> <p>This parameter can work together with the parameter limit.</p> <ul style="list-style-type: none"> • If parameters marker and limit are not passed, resource records on the first page will be returned. • If the parameter marker is not passed and the value of parameter limit is set to 10, the first 10 resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the value of parameter limit is set to 10, the 11th to 20th resource records will be returned. • If the value of the parameter marker is set to the resource ID of the 10th record and the parameter limit is not passed, resource records starting from the 11th records (including 11th) will be returned.
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax ($2^{31}-1$). The default value is 2000.</p> <p>limit can be used together with marker. For details, see the parameter description of marker.</p>

Request Parameters

None

Example Request

GET https://{Endpoint}/v2.0/security-group-rules

Response Parameters

Table 7-199 Response parameter

Parameter	Type	Description
security_group_rules	Array of Security Group Rule objects	Specifies the security group rule list. For details, see Table 7-200 .
security_group_rules_links	Array of SecurityGroupRulesLink objects	Shows pagination information about security group rules. Only when limit is used for filtering and the number of resources exceeds the value of limit or 2000 (default value of limit), value next will be returned for rel and a link for href .

Table 7-200 Security Group Rule objects

Attribute	Type	Description
id	String	Specifies the security group rule ID. This parameter is not mandatory when you query security group rules.
description	String	Provides supplementary information about the security group rule.
security_group_id	String	Specifies the ID of the belonged security group.
remote_group_id	String	Specifies the peer ID of the belonged security group.
direction	String	Specifies the direction of the traffic for which the security group rule takes effect.
remote_ip_prefix	String	Specifies the peer IP address segment.
protocol	String	Specifies the protocol type or the IP protocol number.

Attribute	Type	Description
port_range_max	Integer	Specifies the maximum port number. When ICMP is used, the value is the ICMP code.
port_range_min	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both port_range_max and port_range_min must be specified, and the port_range_max value must be greater than the port_range_min value. When the ICMP protocol is used, if you specify the ICMP code (port_range_max), you must also specify the ICMP type (port_range_min).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
remote_address_group_id	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the security group rule is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the security group rule is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Table 7-201 SecurityGroupRulesLink objects

Parameter	Type	Description
href	String	Specifies the API link.

Parameter	Type	Description
rel	String	Specifies the relationship between the API link and the API version.

Example Response

```
{
  "security_group_rules": [
    {
      "remote_group_id": "1d8b19c7-7c56-48f7-a99b-4b40eb390967",
      "direction": "ingress",
      "remote_ip_prefix": null,
      "protocol": null,
      "tenant_id": "6c9298ec8c874f7f99688489ab65f90e",
      "port_range_max": null,
      "security_group_id": "1d8b19c7-7c56-48f7-a99b-4b40eb390967",
      "port_range_min": null,
      "ethertype": "IPv6",
      "description": null,
      "id": "07adc044-3f21-4eeb-bd57-5e5eb6024b7f",
      "project_id": "6c9298ec8c874f7f99688489ab65f90e",
      "created_at": "2018-09-20T02:15:34",
      "updated_at": "2018-09-20T02:15:34",
      "remote_address_group_id": null
    },
    {
      "remote_group_id": null,
      "direction": "egress",
      "remote_ip_prefix": null,
      "protocol": null,
      "tenant_id": "6c9298ec8c874f7f99688489ab65f90e",
      "port_range_max": null,
      "security_group_id": "328fb454-a2ee-4a11-bdb1-ee19bbdfde43",
      "port_range_min": null,
      "ethertype": "IPv6",
      "description": null,
      "id": "09358f83-f4a5-4386-9563-a1e3c373d655",
      "project_id": "6c9298ec8c874f7f99688489ab65f90e",
      "created_at": "2018-09-20T02:15:34",
      "updated_at": "2018-09-20T02:15:34",
      "remote_address_group_id": null
    },
    {
      "remote_group_id": "4c763030-366e-428c-be2b-d48f6baf5297",
      "direction": "ingress",
      "remote_ip_prefix": null,
      "protocol": null,
      "tenant_id": "6c9298ec8c874f7f99688489ab65f90e",
      "port_range_max": null,
      "security_group_id": "4c763030-366e-428c-be2b-d48f6baf5297",
      "port_range_min": null,
      "ethertype": "IPv6",
      "description": null,
      "id": "219a6f56-1069-458b-bec0-df9270e7a074",
      "project_id": "6c9298ec8c874f7f99688489ab65f90e",
      "created_at": "2018-09-20T02:15:34",
      "updated_at": "2018-09-20T02:15:34",
      "remote_address_group_id": null
    }
  ],
  "security_group_rules_links": [
    {
      "rel": "previous",
      "href": "https://{Endpoint}/v2.0/security-group-rules?marker=07adc044-3f21-4eeb-bd57-5e5eb6024b7f&page_reverse=True"
    }
  ]
}
```

```
]
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.8.7 Querying a Security Group Rule

Function

This API is used to query details about a specific security group rule.

URI

GET /v2.0/security-group-rules/{security_group_rule_id}

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/security-group-rules/1755bc80-cf3a-4f57-8ae9-d9796482ddc0
```

Response Parameters

Table 7-202 Response parameter

Parameter	Type	Description
security_group_rule	security_group_rule object	Specifies the security group rule. For details, see Table 7-203 .

Table 7-203 Security Group Rule objects

Attribute	Type	Description
id	String	Specifies the security group rule ID. This parameter is not mandatory when you query security group rules.
description	String	Provides supplementary information about the security group rule.

Attribute	Type	Description
security_group_id	String	Specifies the ID of the belonged security group.
remote_group_id	String	Specifies the peer ID of the belonged security group.
direction	String	Specifies the direction of the traffic for which the security group rule takes effect.
remote_ip_prefix	String	Specifies the peer IP address segment.
protocol	String	Specifies the protocol type or the IP protocol number.
port_range_max	Integer	Specifies the maximum port number. When ICMP is used, the value is the ICMP code.
port_range_min	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both port_range_max and port_range_min must be specified, and the port_range_max value must be greater than the port_range_min value. When the ICMP protocol is used, if you specify the ICMP code (port_range_max), you must also specify the ICMP type (port_range_min).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
remote_address_group_id	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the security group rule is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Attribute	Type	Description
updated_at	String	Specifies the time (UTC) when the security group rule is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Example Response

```
{
  "security_group_rule": {
    "remote_group_id": null,
    "direction": "egress",
    "remote_ip_prefix": null,
    "protocol": null,
    "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
    "port_range_max": null,
    "security_group_id": "723bc02c-d7f7-49b5-b6ff-d08320f315e2",
    "port_range_min": null,
    "ethertype": "IPv4",
    "description": null,
    "id": "1755bc80-cf3a-4f57-8ae9-d9796482ddc0",
    "project_id": "6fbe9263116a4b68818cf1edce16bc4f",
    "created_at": "2018-09-20T02:15:34",
    "updated_at": "2018-09-20T02:15:34",
    "remote_address_group_id": null
  }
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.8.8 Creating a Security Group Rule

Function

This API is used to create a security group rule.

URI

POST /v2.0/security-group-rules

Request Parameters

Table 7-204 Request parameter

Parameter	Type	Mandatory	Description
security_group_rule	security_group_rule object	Yes	Specifies the security group rule. For details, see Table 7-205 .

Table 7-205 Security Group Rule objects

Attribute	Mandatory	Type	Description
description	No	String	Provides supplementary information about the security group rule.
security_group_id	Yes	String	Specifies the ID of the belonged security group.
remote_group_id	No	String	Specifies the peer ID of the belonged security group. This parameter is mutually exclusive with remote_ip_prefix and remote_address_group_id .
direction	Yes	String	Specifies the direction of the traffic for which the security group rule takes effect. The value can be ingress or egress .
remote_ip_prefix	No	String	Specifies the peer IP address segment. This parameter is mutually exclusive with remote_group_id and remote_address_group_id .
protocol	No	String	Specifies the protocol type or the IP protocol number. The value can be tcp , udp , icmp or an IP protocol number

Attribute	Mandatory	Type	Description
port_range_max	No	Integer	Specifies the maximum port number. When ICMP is used, the value is the ICMP code. The value ranges from 1 to 65535. (The value ranges from 0 to 255 when it indicates the code.)
port_range_min	No	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both port_range_max and port_range_min must be specified, and the port_range_max value must be greater than the port_range_min value. When the ICMP protocol is used, if you specify the ICMP code (port_range_max), you must also specify the ICMP type (port_range_min). The value ranges from 1 to 65535. (The value ranges from 0 to 255 when it indicates the code.)
ethertype	No	String	Specifies the network type. The value can be IPv4 or IPv6 .
remote_address_group_id	No	String	<ul style="list-style-type: none"> Specifies the remote IP address group ID. You can log in to the management console and view the ID on the IP address group page. This parameter is mutually exclusive with parameters remote_ip_prefix and remote_group_id.

Example Request

Create an outbound rule in the security group whose ID is 5cb9c1ee-00e0-4d0f-9623-55463cd26ff8. Set **protocol** to **tcp**, and **remote_ip_prefix** to 10.10.0.0/24.


```
POST https://{Endpoint}/v2.0/security-group-rules
{
  "security_group_rule": {
    "security_group_id": "5cb9c1ee-00e0-4d0f-9623-55463cd26ff8",
    "direction": "egress",
    "protocol": "tcp",
    "remote_ip_prefix": "10.10.0.0/24"
  }
}
```

Response Parameters

Table 7-206 Response parameter

Parameter	Type	Description
security_group_rule	security_group_rule object	Specifies the security group rule. For details, see Table 7-207 .

Table 7-207 Security Group Rule objects

Attribute	Type	Description
id	String	Specifies the security group rule ID. This parameter is not mandatory when you query security group rules.
description	String	Provides supplementary information about the security group rule.
security_group_id	String	Specifies the ID of the belonged security group.
remote_group_id	String	Specifies the peer ID of the belonged security group.
direction	String	Specifies the direction of the traffic for which the security group rule takes effect.
remote_ip_prefix	String	Specifies the peer IP address segment.
protocol	String	Specifies the protocol type or the IP protocol number.
port_range_max	Integer	Specifies the maximum port number. When ICMP is used, the value is the ICMP code.

Attribute	Type	Description
port_range_min	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both port_range_max and port_range_min must be specified, and the port_range_max value must be greater than the port_range_min value. When the ICMP protocol is used, if you specify the ICMP code (port_range_max), you must also specify the ICMP type (port_range_min).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
remote_address_group_id	String	<ul style="list-style-type: none">Specifies the remote IP address group ID.The value is mutually exclusive with parameters remote_ip_prefix and remote_group_id.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID .
created_at	String	Specifies the time (UTC) when the security group rule is created. Format: <i>yyyy-MM-ddTHH:mm:ss</i>
updated_at	String	Specifies the time (UTC) when the security group rule is updated. Format: <i>yyyy-MM-ddTHH:mm:ss</i>

Example Response

```
{
  "security_group_rule": {
    "remote_group_id": null,
    "direction": "egress",
    "remote_ip_prefix": "10.10.0.0/24",
    "protocol": "tcp",
    "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
    "port_range_max": null,
    "security_group_id": "5cb9c1ee-00e0-4d0f-9623-55463cd26ff8",
    "port_range_min": null,
    "ethertype": "IPv4",
    "description": null,
    "id": "7c336b04-1603-4911-a6f4-f2af1d9a0488",
```

```
"project_id": "6fbe9263116a4b68818cf1edce16bc4f",  
"created_at": "2018-09-20T02:15:34",  
"updated_at": "2018-09-20T02:15:34",  
"remote_address_group_id": null  
}  
}
```

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

7.8.9 Deleting a Security Group Rule

Function

This API is used to delete a security group rule.

URI

DELETE /v2.0/security-group-rules/{security_group_rule_id}

Request Parameters

None

Response Parameters

None

Example Request

DELETE https://{Endpoint}/v2.0/security-group-rules/07adc044-3f21-4eeb-bd57-5e5eb6024b7f

Example Response

None

Status Code

See [Status Codes](#).

Error Code

See [Error Codes](#).

8 Permissions Policies and Supported Actions

8.1 Introduction

By default, new IAM users do not have permissions assigned. You need to add them to one or more groups and attach policies or roles to these groups. The users then inherit permissions from the groups. This way, they can perform specified operations on cloud services based on the permissions.

An account has all the permissions required to call all APIs, but IAM users must be assigned the required permissions. The permissions required for calling an API are determined by the actions supported by the API. Only users who have been granted permissions allowing the actions can call the API successfully. For example, if an IAM user wants to query VPCs using an API, the user must have been granted permissions that allow the **vpc:vpcs:list** action.

Supported Actions

VPC provides system-defined policies that can be directly used in IAM. You can also create custom policies to supplement system-defined policies for more refined access control. Operations supported by policies are specific to APIs. The following are common concepts related to policies:

- Permissions: statements in a policy that allow or deny certain operations
- APIs: REST APIs that can be called by a user who has been granted specific permissions
- Actions: specific operations that are allowed or denied

-  **NOTE**

√: supported; x: not supported

8.2 VPC

Permission	API	Action	IAM Project
Creates a VPC.	POST /v1/{project_id}/vpcs	vpc:vpcs:create	√
Queries a VPC.	GET /v1/{project_id}/vpcs/{vpc_id}	vpc:vpcs:get	√
Queries VPC details. (v3)	GET /v3/{project_id}/vpc/vpcs/{vpc_id}	vpc:vpcs:get	√
Queries VPCs.	GET /v1/{project_id}/vpcs	vpc:vpcs:list	√
Queries VPCs (v3)	GET /v3/{project_id}/vpc/vpcs	vpc:vpcs:list	√
Updates a VPC.	PUT /v1/{project_id}/vpcs/{vpc_id}	vpc:vpcs:update	√
Adds a secondary CIDR block to a VPC. (v3)	PUT /v3/{project_id}/vpc/vpcs/{vpc_id}/add-extend-cidr	vpc:vpcs:update	√
Removes a secondary CIDR block from a VPC. (v3)	PUT /v3/{project_id}/vpc/vpcs/{vpc_id}/remove-extend-cidr	vpc:vpcs:update	√
Deletes a VPC.	DELETE /v1/{project_id}/vpcs/{vpc_id}	vpc:vpcs:delete	√

8.3 Subnet

Permission	API	Action	IAM Project
Creates a subnet.	POST /v1/{project_id}/subnets	vpc:subnets:create	√
Queries a subnet.	GET /v1/{project_id}/subnets/{subnet_id}	vpc:subnets:get	√
Queries subnets.	GET /v1/{project_id}/subnets	vpc:subnets:get	√

Permission	API	Action	IAM Project
Updates a subnet.	PUT /v1/{project_id}/vpcs/{vpc_id}/subnets/{subnet_id}	vpc:subnets:update	√
Deletes a subnet.	DELETE /v1/{project_id}/vpcs/{vpc_id}/subnets/{subnet_id}	vpc:subnets:delete	√

8.4 EIP

Permission	API	Action	IAM Project
Assigns an EIP.	POST /v1/{project_id}/publicips	vpc:publicips:create	√
Queries an EIP.	GET /v1/{project_id}/publicips/{publicip_id}	vpc:publicips:get	√
Queries EIPs.	GET /v1/{project_id}/publicips	vpc:publicips:list	√
Updates an EIP.	PUT /v1/{project_id}/publicips/{publicip_id}	vpc:publicips:update	√
Release an EIP.	DELETE /v1/{project_id}/publicips/{publicip_id}	vpc:publicips:delete	√

8.5 Bandwidth

Permission	API	Action	IAM Project
Queries a bandwidth.	GET /v1/{project_id}/bandwidths/{bandwidth_id}	vpc:bandwidths:get	√
Queries bandwidths.	GET /v1/{project_id}/bandwidths	vpc:bandwidths:list	√
Updates a bandwidth.	PUT /v1/{project_id}/bandwidths/{bandwidth_id}	vpc:bandwidths:update	√

8.6 Bandwidth (V2.0)

Permission	API	Action	IAM Project
Allocates a shared bandwidth.	POST /v2.0/{project_id}/bandwidths	vpc:bandwidths:create	√
Deletes a shared bandwidth.	DELETE /v2.0/{project_id}/bandwidths/{bandwidth_id}	vpc:bandwidths:delete	√
Adds an EIP to a shared bandwidth.	POST /v2.0/{project_id}/bandwidths/{bandwidth_id}/insert	vpc:publicips:insert	√
Removes an EIP from a shared bandwidth.	POST /v2.0/{project_id}/bandwidths/{bandwidth_id}/remove	vpc:publicips:remove	√

8.7 EIP V3

Permission	API	Action	IAM Project
Querying all EIPs	GET /v3/{project_id}/eip/publicips	eip:publicips:list	√
Querying the details of an EIP	GET /v3/{project_id}/eip/publicips/{publicip_id}	eip:publicips:get	√
Updating an EIP	PUT /v3/{project_id}/eip/publicips/{publicip_id}	eip:publicips:update	√
Binding an EIP to an instance	POST /v3/{project_id}/eip/publicips/{publicip_id}/associate-instance	eip:publicips:associateInstance	√
Unbinding an EIP from an instance	POST /v3/{project_id}/eip/publicips/{publicip_id}/disassociate-instance	eip:publicips:disassociateInstance	√
Adding EIPs to a shared bandwidth	POST /v3/{project_id}/eip/publicips/attach-share-bandwidth	eip:publicips:attachBandwidth	√

Permission	API	Action	IAM Project
Querying the number of available EIPs	POST /v3/{project_id}/eip/resources/available	eip:publicips:count	√
Querying common pools	GET /v3/{project_id}/eip/publicip-pools/common-pools	eip:publicipPools:list	√
Querying EIP pools	GET /v3/{project_id}/eip/publicip-pools	eip:publicipPools:list	√
Querying the details of an EIP pool	GET /v3/{project_id}/eip/publicip-pools/{publicip_pool_id}	eip:publicipPools:get	√

8.8 Port

Permission	API	Action	IAM Project
Queries a port.	GET /v1/{project_id}/ports	vpc:ports:get	√
Queries port details.	GET /v1/{project_id}/ports/{port_id}	vpc:ports:get	√
Updates a port.	PUT /v1/{project_id}/ports/{port_id}	vpc:ports:update	√
Deletes a port.	DELETE /v1/{project_id}/ports/{port_id}	vpc:ports:delete	√
Creates a port.	POST /v1/{project_id}/ports	vpc:ports:create	√

8.9 VPC Peering Connection

Permission	API	Action	IAM Project
Querying VPC peering connections	GET /v2.0/vpc/peerings	vpc:peerings:get	√

Permission	API	Action	IAM Project
Querying a VPC peering connection	GET /v2.0/vpc/peerings/{peering_id}	vpc:peerings:get	√
Creating a VPC peering connection	POST /v2.0/vpc/peerings	vpc:peerings:create	√
Accepting a VPC peering connection	PUT /v2.0/vpc/peerings/{peering_id}/accept	vpc:peerings:accept	√
Refusing a VPC peering connection	PUT /v2.0/vpc/peerings/{peering_id}/reject	vpc:peerings:reject	√
Updating a VPC peering connection	PUT /v2.0/vpc/peerings/{peering_id}	vpc:peerings:update	√
Deleting a VPC peering connection	DELETE /v2.0/vpc/peerings/{peering_id}	vpc:peerings:delete	√

8.10 VPC Route

Permission	API	Action	IAM Project
Querying VPC Routes	GET /v2.0/vpc/routes	vpc:routes:list	√
Querying a VPC Route	GET /v2.0/vpc/routes/{route_id}	vpc:routes:get	√

Permission	API	Action	IAM Project
Creating a VPC Route	POST /v2.0/vpc/routes	vpc:routes:create	√
Deleting a VPC Route	DELETE /v2.0/vpc/routes/{route_id}	vpc:routes:delete	√

8.11 Route Table

Permission	API	Action	IAM Project
Querying Route Tables	GET /v1/{project_id}/routetables	vpc:routeTables:list	√
Querying a Route Table	GET /v1/{project_id}/routetables/{routetable_id}	vpc:routeTables:get	√
Creating a Route Table	POST /v1/{project_id}/routetables	vpc:routeTables:create	√
Updating a Route Table	PUT /v1/{project_id}/routetables/{routetable_id}	vpc:routeTables:update	√
Associating Subnets with a Route Table	POST /v1/{project_id}/routetables/{routetable_id}/action	vpc:routeTables:associate	√
Disassociating Subnets from a Route Table	POST /v1/{project_id}/routetables/{routetable_id}/action	vpc:routeTables:disassociate	√
Deleting a Route Table	DELETE /v1/{project_id}/routetables/{routetable_id}	vpc:routeTables:delete	√

8.12 Quota

Permission	API	Action	IAM Project
Queries quotas.	GET /v1/{project_id}/quotas	vpc:quotas:list	√

8.13 Private IP Address

Permission	API	Action	IAM Project
Assigns a private IP address.	POST /v1/{project_id}/privateips	vpc:privateips:create	√
Queries a private IP address.	GET /v1/{project_id}/privateips/{privateip_id}	vpc:privateips:get	√
Queries private IP addresses.	GET /v1/{project_id}/subnets/{subnet_id}/privateips	vpc:privateips:list	√
Deletes a private IP address.	DELETE /v1/{project_id}/privateips/{privateip_id}	vpc:privateips:delete	√

8.14 Security Group

Permission	API	Action	IAM Project
Creates a security group.	POST /v1/{project_id}/security-groups	vpc:securityGroups:create	√

Permission	API	Action	IAM Project
Queries a security group.	GET /v1/{project_id}/security-groups/{security_group_id}	vpc:securityGroups:get	√
Queries security groups.	GET /v1/{project_id}/security-groups	vpc:securityGroups:get	√

8.15 Security Group Rule

Permission	API	Action	IAM Project
Creates a security group rule.	POST /v1/{project_id}/security-group-rules	vpc:securityGroupRules:create	√
Queries a security group rule.	GET /v1/{project_id}/security-group-rules/{rules_security_groups_id}	vpc:securityGroupRules:get	√
Queries security group rules.	GET /v1/{project_id}/security-group-rules	vpc:securityGroupRules:get	√
Deletes a security group rule.	DELETE /v1/{project_id}/security-group-rules/{rules_security_groups_id}	vpc:securityGroupRules:delete	√
Updates a security group rule.	-	vpc:securityGroupRules:update	√

8.16 Port (OpenStack Neutron API)

Permission	API	Action	IAM Project
Queries ports.	GET /v2.0/ports	vpc:ports:get	√
Queries a port.	GET /v2.0/ports/{port_id}	vpc:ports:get	√
Creates a port.	POST /v2.0/ports	vpc:ports:create	√
Updates a port.	PUT /v2.0/ports/{port_id}	vpc:ports:update	√
Deletes a port.	DELETE /v2.0/ports/{port_id}	vpc:ports:delete	√

8.17 Network (OpenStack Neutron API)

Permission	API	Action	IAM Project
Queries networks.	GET /v2.0/networks	vpc:networks:get	√
Queries a network.	GET /v2.0/networks/{network_id}	vpc:networks:get	√
Creates a network.	POST /v2.0/networks	vpc:networks:create	√
Updates a network.	PUT /v2.0/networks/{network_id}	vpc:networks:update	√
Deletes a network.	DELETE /v2.0/networks/{network_id}	vpc:networks:delete	√

8.18 Subnet (OpenStack Neutron API)

Permission	API	Action	IAM Project
Queries subnets.	GET /v2.0/subnets	vpc:subnets:get	√
Queries a subnet.	GET /v2.0/subnets/{subnet_id}	vpc:subnets:get	√
Creates a subnet.	POST /v2.0/subnets	vpc:subnets:create	√
Updates a subnet.	PUT /v2.0/subnets/{subnet_id}	vpc:subnets:update	√
Deletes a subnet.	DELETE /v2.0/subnets/{subnet_id}	vpc:subnets:delete	√

8.19 Router (OpenStack Neutron API)

Permission	API	Action	IAM Project
Queries routers.	GET /v2.0/routers	vpc:routers:get	√
Queries a router.	GET /v2.0/routers/{router_id}	vpc:routers:get	√
Creates a router.	POST /v2.0/routers	vpc:routers:create	√
Updates a router.	PUT /v2.0/routers/{router_id}	vpc:routers:update	√
Deletes a router.	DELETE /v2.0/routers/{router_id}	vpc:routers:delete	√
Adds an interface to a router.	PUT /v2.0/routers/{router_id}/add_router_interface	<ul style="list-style-type: none"> vpc:routers:addInterface vpc:routers:get 	√
Removes an interface from a router.	PUT /v2.0/routers/{router_id}/remove_router_interface	<ul style="list-style-type: none"> vpc:routers:removeInterface vpc:routers:get 	√

8.20 Floating IP Address (OpenStack Neutron API)

Permission	API	Action	IAM Project
Queries floating IP addresses.	GET /v2.0/floatingips	vpc:floatingIps:get	√
Queries a floating IP address.	GET /v2.0/floatingips/{floatingip_id}	vpc:floatingIps:get	√
Creates a floating IP address.	POST /v2.0/floatingips	vpc:floatingIps:create	√
Updates a floating IP address.	PUT /v2.0/floatingips/{floatingip_id}	vpc:floatingIps:update	√
Deletes a floating IP address.	DELETE /v2.0/floatingips/{floatingip_id}	vpc:floatingIps:delete	√

8.21 Network ACL (OpenStack Neutron API)

Permission	API	Action	IAM Project
Queries all network ACL rules.	GET /v2.0/fwaas/firewall_rules	vpc:firewallRules:get	√
Queries a network ACL rule.	GET /v2.0/fwaas/firewall_rules/{firewall_rule_id}	vpc:firewallRules:get	√
Creates a network ACL rule.	POST /v2.0/fwaas/firewall_rules	vpc:firewallRules:create	√
Updates a network ACL rule.	PUT /v2.0/fwaas/firewall_rules/{firewall_rule_id}	vpc:firewallRules:update	√
Deletes a network ACL rule.	DELETE /v2.0/fwaas/firewall_rules/{firewall_rule_id}	vpc:firewallRules:delete	√

Permission	API	Action	IAM Project
Queries all network ACL policies.	GET /v2.0/fwaas/firewall_policies	vpc:firewallPolicies:get	√
Queries a network ACL policy.	GET /v2.0/fwaas/firewall_policies/{firewall_policy_id}	vpc:firewallPolicies:get	√
Creates a network ACL policy.	POST /v2.0/fwaas/firewall_policies	vpc:firewallPolicies:create	√
Updates a network ACL policy.	PUT /v2.0/fwaas/firewall_policies/{firewall_policy_id}	vpc:firewallPolicies:update	√
Deletes a network ACL policy.	DELETE /v2.0/fwaas/firewall_policies/{firewall_policy_id}	vpc:firewallPolicies:delete	√
Inserts a network ACL rule.	PUT /v2.0/fwaas/firewall_policies/{firewall_policy_id}/insert_rule	<ul style="list-style-type: none"> vpc:firewallPolicies:addRule vpc:firewallPolicies:get 	√
Removes a network ACL rule.	PUT /v2.0/fwaas/firewall_policies/{firewall_policy_id}/remove_rule	<ul style="list-style-type: none"> vpc:firewallPolicies:removeRule vpc:firewallPolicies:get 	√
Queries all network ACL groups.	GET /v2.0/fwaas/firewall_groups	vpc:firewallGroups:get	√
Queries a network ACL group.	GET /v2.0/fwaas/firewall_groups/{firewall_group_id}	vpc:firewallGroups:get	√
Creates a network ACL group.	POST /v2.0/fwaas/firewall_groups	vpc:firewallGroups:create	√
Updates a network ACL group.	PUT /v2.0/fwaas/firewall_groups/{firewall_group_id}	vpc:firewallGroups:update	√
Deletes a network ACL group	DELETE /v2.0/fwaas/firewall_groups/{firewall_group_id}	vpc:firewallGroups:delete	√

8.22 Security Group (OpenStack Neutron API)

Permission	API	Action	IAM Project
Queries a security group.	GET /v2.0/security-groups	vpc:securityGroups:get	√
Queries details about a security group.	GET /v2.0/security-groups/{security_group_id}	vpc:securityGroups:get	√
Creates a security group.	POST /v2.0/security-groups	vpc:securityGroups:create	√
Updates a security group.	PUT /v2.0/security-groups/{security_group_id}	vpc:securityGroups:update	√
Deletes a security group.	DELETE /v2.0/security-groups/{security_group_id}	vpc:securityGroups:delete	√
Queries a security group rule.	GET /v2.0/security-group-rules	vpc:securityGroupRules:get	√
Queries details about a security group rule.	GET /v2.0/security-group-rules/{rules_security_groups_id}	vpc:securityGroupRules:get	√
Creates a security group rule.	POST /v2.0/security-group-rules	vpc:securityGroupRules:create	√
Deletes a security group rule.	DELETE /v2.0/security-group-rules/{rules_security_groups_id}	vpc:securityGroupRules:delete	√

8.23 Precautions for API Permissions

If you have insufficient permissions, response code **200** will be returned when you query network resources and an empty list will be displayed.

A Appendix

A.1 ICMP-Port Range Relationship Table

ICMP Type	port_range_min	port_range_max
Any	NULL	NULL
Echo	8	0
Echo reply	0	0
Fragment need DF set	3	4
Host redirect	5	1
Host TOS redirect	5	3
Host unreachable	3	1
Information reply	16	0
Information request	15	0
Net redirect	5	0
Net TOS redirect	5	2
Net unreachable	3	0
Parameter problem	12	0
Port unreachable	3	3
Protocol unreachable	3	2
Reassembly timeout	11	1
Source quench	4	0
Source route failed	3	5

ICMP Type	port_range_min	port_range_max
Timestamp reply	14	0
Timestamp request	13	0
TTL exceeded	11	0

A.2 VPC Monitoring Metrics

Description

This section describes monitoring metrics reported by VPC to Cloud Eye as well as their namespaces and dimensions. You can use APIs provided by Cloud Eye to query the monitoring metrics of the monitored object and alarms generated for VPC.

Namespace

SYS.VPCnetwork ACL

Metrics

Table A-1 EIP and bandwidth metrics

ID	Name	Description	Value Range	Monitored Object	Monitoring Interval (Raw Data)
upstream_bandwidth	Outbound Bandwidth	Network rate of outbound traffic Unit: bit/s	≥ 0 bit/s	Bandwidth or EIP	1 minute
downstream_bandwidth	Inbound Bandwidth	Network rate of inbound traffic Unit: bit/s	≥ 0 bit/s	Bandwidth or EIP	1 minute
upstream	Outbound Traffic	Network traffic going out of the cloud platform in a minute Unit: byte	≥ 0 bytes	Bandwidth or EIP	1 minute

ID	Name	Description	Value Range	Monitored Object	Monitoring Interval (Raw Data)
down_stream	Inbound Traffic	Network traffic going into the cloud platform in a minute Unit: byte	≥ 0 bytes	Bandwidth or EIP	1 minute

Dimension

Key	Value
publicip_id	EIP ID
bandwidth_id	Bandwidth ID

A.3 Status Codes

Table A-2 Normal values

Normal Response Code	Type	Description
200	OK	Specifies the normal response code for the GET, PUT, and POST operations.
201	Created	Specifies the normal response code for the POST operation of the OpenStack Neutron API and API V3.
204	No Content	Specifies the normal response code for the DELETE operation.

Table A-3 Abnormal values

Returned Value	Description
400 Bad Request	The server failed to process the request.
401 Unauthorized	You must enter a username and password to access the requested page.
403 Forbidden	You are forbidden to access the requested page.

Returned Value	Description
404 Not Found	The server could not find the requested page.
405 Method Not Allowed	You are not allowed to use the method specified in the request.
406 Not Acceptable	The response generated by the server could not be accepted by the client.
407 Proxy Authentication Required	You must use the proxy server for authentication so that the request can be processed.
408 Request Timeout	The request timed out.
409 Conflict	The request could not be processed due to a conflict.
500 Internal Server Error	Failed to complete the request because of an internal service error.
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 has received an invalid response.
503 Service Unavailable	Failed to complete the request because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

A.4 Error Codes

Description

If an error occurs when an API is called, error information is returned. This section describes the error information for VPC APIs (excluding native OpenStack APIs).

Example of Returned Error Information

```
{  
  "code": "VPC.0002",  
  "message": "Available zone Name is null."  
}
```

Error Code Description

Module	Status Code	Error Code	Message	Description	Handling Measure
Public	400	VPC.0002	Available zone Name is null.	The AZ is left blank.	Check whether the availability_zone field in the request body for creating a subnet is left blank.
	404	VPC.0003	VPC does not exist.	The VPC does not exist.	Check whether the VPC ID is correct or whether the VPC exists under the tenant.
	400	VPC.0004	VPC is not active, please try later.	The VPC status is abnormal.	Try again later or contact technical support.
	401	VPC.0005	Lack of user authority.	User restricted.	Check whether the account is in arrears or has not applied for the OBT permission.
	401	VPC.0009	real-name authentication fail.	Real-name authentication fails.	Contact technical support.
Public	400	VPC.0007	urlTenantId is not equal tokenTenantId	Inconsistent tenant IDs.	The tenant ID in the URL is different from that parsed in the token.
	401	VPC.0008	Invalid token in the header.	Invalid token.	Check whether the token in the request header is valid.

Module	Status Code	Error Code	Message	Description	Handling Measure
	403	VPC.2701	Token not allowed to do this action.	You do not have permission to perform this operation, or your account balance is insufficient.	Check whether the account balance is insufficient or whether your account has been frozen.
Creating a VPC	400	VPC.0101	Param is invalid.	VPC parameters are incorrect.	Check whether the parameter values are valid based on the returned error message and API reference document.
	409	VPC.0114	Quota exceeded for resources: ['router'].	The number of VPCs has reached the maximum allowed limit specified by the quota.	Clear VPC resources that no longer will be used or apply for expanding the VPC resource quota.
	400	VPC.0115	The router name has exist.	The VPC name already exists.	Change the VPC name.
Querying a VPC	400	VPC.0101	getVpc error vpclId is invalid.	VPC parameters are incorrect.	Ensure that the specified VPC ID is correct.
	404/500	VPC.0105	Neutron Error.	Calling the backend service fails.	Check whether the Neutron service is normal or contact technical support.

Module	Status Code	Error Code	Message	Description	Handling Measure
	500	VPC.0106	get router is null.	An error is returned for the failure to call the backend service.	Check whether the Neutron service is normal or contact technical support.
Querying VPCs	400	VPC.0101	Query vpc list error.	Failed to query the VPCs.	Check whether the parameter values are valid based on the returned error message.
	500	VPC.0105	Neutron Error.	Calling the backend service fails.	Check whether the Neutron service is normal or contact technical support.
	500	VPC.0106	query routers or getList are null.	The response result of calls to the IaaS OpenStack system is null or empty.	Check whether the Neutron service is normal or contact technical support.
Deleting a VPC	400/404	VPC.0101	Delete router error xx is invalid.	Invalid parameters.	Check whether the parameter values are valid based on the returned error message.

Module	Status Code	Error Code	Message	Description	Handling Measure
	500	VPC.0102	Delete router fail.	The interface fails to obtain the routing resources.	Contact technical support.
	409	VPC.0103	Resource status is busy. Try again later.	The VPC cannot be deleted because it is being created.	Contact technical support.
	409	VPC.0104	Router contains subnets, please delete subnet first.	The VPC cannot be deleted because it contains subnets.	Delete the subnet in the VPC.
	404/500	VPC.0105	Neutron Error.	Calling the backend service fails.	Check whether the Neutron service is normal or contact technical support.
	409	VPC.0107	Delete the firewall first before deleting the router.	Failed to delete the VPC because it has network ACLs associated.	Delete the network ACLs of the tenant first.
	409	VPC.0108	Router is used not allow deleted.	Failed to delete the VPC because it has EIPs associated.	Delete the EIPs of the tenant first.

Module	Status Code	Error Code	Message	Description	Handling Measure
	409	VPC.0110	deleteDefaultNetworkFromRouter router status is invalid.	The VPC cannot be deleted because its status is unstable.	Contact technical support.
	500	VPC.0111	Database Error.	An internal VPC exception occurs.	Contact technical support.
	409	VPC.0112	Delete the securitygroup first before deleting the router.	The VPC cannot be deleted because it contains security groups.	Delete security groups of the tenant.
	409	VPC.0118	ELB exists under this router, delete ELB firstly.	The VPC cannot be deleted because it contains load balancers.	Delete load balancers in the VPC.
	500	VPC.0119	ELB Error.	An error occurred when the VPC service makes calls to the ELB service.	Check whether the ELB service is normal or contact technical support.
	409	VPC.0120	exroutes exists under this router, delete exroutes firstly.	The VPC cannot be deleted because it contains extension routes.	Delete extension routes in the VPC.

Module	Status Code	Error Code	Message	Description	Handling Measure
Updating a VPC	400	VPC.0101	Update router xx is invalid.	Invalid parameters.	Check whether the parameter values are valid based on the returned error message.
	404/500	VPC.0105	Neutron Error.	Calling the backend service fails.	Check whether the Neutron service is normal or contact technical support.
	500	VPC.0113	Router status is not active.	The VPC cannot be updated because the status of the VPC is abnormal.	Try again later or contact technical support.
	400	VPC.0115	The router name has exist.	The VPC name already exists.	Change the VPC name.
	400	VPC.0117	Cidr can not contain subnetList cidr.	The subnet parameters are invalid. The VPC CIDR block does not contain all its subnet CIDR blocks.	Change the CIDR block of the VPC.

Module	Status Code	Error Code	Message	Description	Handling Measure
Creating a subnet	400	VPC.0201	Subnet name is invalid.	Incorrect subnet parameters.	Check whether the parameter values are valid based on the returned error message and API reference document.
	500	VPC.0202	Create subnet failed.	An internal error occurs in the subnet.	Contact technical support.
	400	VPC.0203	Subnet is not in the range of VPC.	The CIDR block of the subnet is not in the range of the VPC.	Change the CIDR block of the subnet.
	400	VPC.0204	The subnet has already existed in the VPC, or has been in conflict with the VPC subnet.	The CIDR block of the subnet already exists in the VPC.	Change the CIDR block of the subnet.
	400	VPC.0212	The subnet cidr is not valid.	Invalid subnet CIDR block.	Check whether the subnet CIDR block is valid.
Querying a subnet	400	VPC.0201	Subnet ID is invalid.	Invalid subnet ID.	Check whether the subnet ID is valid.
	404/500	VPC.0202	Query subnet fail.	Failed to query the subnet.	Contact technical support.

Module	Status Code	Error Code	Message	Description	Handling Measure
Querying subnets	400	VPC.0201	Query subnets list error.	Failed to query the subnets.	Check whether the parameter values are valid based on the returned error message.
	500	VPC.0202	List subnets error.	Failed to query the subnets.	Contact technical support.
Deleting a subnet	400	VPC.0201	Subnet ID is invalid.	Invalid subnet ID.	Check whether the parameter values are valid based on the returned error message.
	404/500	VPC.0202	Neutron Error.	An internal error occurs in the subnet.	Contact technical support.
	400	VPC.0207	Subnet does not belong to the VPC.	This operation is not allowed because the subnet does not belong to the VPC.	Check whether the subnet is in the VPC.
	500	VPC.0208	Subnet is used by private IP, can not be deleted.	The subnet cannot be deleted because it is being used by the private IP address.	Delete the private IP address of the subnet.

Module	Status Code	Error Code	Message	Description	Handling Measure
	500	VPC.0209	subnet is still used ,such as computer,LB.	The subnet cannot be deleted because it is being used by an ECS or load balancer.	Delete the ECS or load balancer in the subnet.
	500	VPC.0210	Subnet has been used by routes, please remove the routes first and try again.	The subnet cannot be deleted because it is being used by the custom route.	Delete the custom route.
	500	VPC.0211	subnet is still used by LBaaS.	The subnet cannot be deleted because it is being used by load balancers.	Delete load balancers in the subnet.
Updating a subnet	400	VPC.0201	xx is invalid.	Incorrect subnet parameters.	Check whether the parameter values are valid based on the returned error message.
	404/500	VPC.0202	Neutron Error.	An internal error occurs in the subnet.	Contact technical support.
	500	VPC.0205	Subnet states is invalid, please try again later.	The subnet cannot be updated because it is being processed.	Try again later or contact technical support.

Module	Status Code	Error Code	Message	Description	Handling Measure
	400	VPC.0207	Subnet does not belong to the VPC.	This operation is not allowed because the subnet does not belong to the VPC.	Check whether the subnet is in the VPC.
Assigning an EIP	400	VPC.0301	Bandwidth name or share_type is invalid.	The specified bandwidth parameter for assigning an EIP is invalid.	Check whether the specified bandwidth parameter is valid.
	400	VPC.0501	Bandwidth share_type is invalid.	Invalid EIP parameters.	Check whether the parameter values are valid based on the returned error message and API reference document.
	403	VPC.0502	Tenant status is op_restricted.	You are not allowed to assign the EIP.	Check whether the account balance is insufficient or whether your account has been frozen.
	500	VPC.0503	Creating publicIp failed.	Failed to assign the EIP.	Contact technical support.
	500	VPC.0504	FloatIp is null.	Failed to assign the EIP because no IP address is found.	Contact technical support.

Module	Status Code	Error Code	Message	Description	Handling Measure
	500	VPC.0508	Port is invalid.	Port-related resources could not be found.	Contact technical support.
	409	VPC.0510	Floatingip has already associated with port.	The EIP has already been bound to another ECS.	Unbind the EIP from the ECS.
	409	VPC.0511	Port has already associated with floatingip.	The port has already been associated with an EIP.	Disassociate the port from the EIP.
	409	VPC.0521	Quota exceeded for resources: ['floatingip'].	Insufficient EIP quota.	Release the unbound EIPs or request to increase the EIP quota.
	409	VPC.0522	The IP address is in use.	The IP address is invalid or in use.	Check whether the IP address format is valid or replace it with another IP address.
	409	VPC.0532	No more IP addresses available on network.	Failed to assign the IP address because no IP addresses are available.	Release unbound EIPs or try again later.
Querying an EIP	400	VPC.0501	Invalid floatingip_id.	Invalid EIP parameters.	Check whether the EIP ID is valid.
	404	VPC.0504	Floating IP could not be found.	The EIP could not be found.	Check whether the specified EIP ID is valid.

Module	Status Code	Error Code	Message	Description	Handling Measure
	500	VPC.0514	Neutron Error.	An exception occurs in the IaaS OpenStack system.	Check whether the Neutron service is normal or contact technical support.
Querying EIPs	400	VPC.0501	Invalid limit.	Invalid EIP parameters.	Check whether the parameter values are valid based on the returned error message and API reference document.
Releasing an EIP	400	VPC.0501	Invalid param.	Invalid EIP parameters.	Contact technical support.
	404	VPC.0504	Floating IP could not be found.	The EIP could not be found.	Check whether the specified EIP ID is valid.
	409	VPC.0512	Resource status is busy, try it again later.	The EIP status is abnormal.	Try again later or contact technical support.
	500	VPC.0513	getElementByKey error.	Network resources cannot be found.	Contact technical support.
	500	VPC.0516	PublicIP is in used by ELB.	Failed to release the EIP because it is being used by a load balancer.	Unbind the EIP from the load balancer.

Module	Status Code	Error Code	Message	Description	Handling Measure
	409	VPC.0517	Floatingip has associated with port, please disassociate it firstly.	Failed to release the EIP because it is bound to an ECS.	Unbind the EIP from the ECS.
	500	VPC.0518	Public IP has firewall rules.	Failed to release the EIP because it is being used by a network ACL.	Contact technical support.
Updating an EIP	400	VPC.0501	Port id is invalid.	Invalid EIP parameters.	Check whether the port ID is valid.
	404	VPC.0504	Floating IP could not be found.	The EIP could not be found.	Check whether the specified EIP ID is valid.
	500	VPC.0509	Floating ip double status is invalid.	The port has already been associated with an EIP.	Disassociate the port from the EIP.
	409	VPC.0510	Floatingip has already associated with port.	The EIP has already been bound to another ECS.	Unbind the EIP from the ECS.
	409	VPC.0511	Port has already associated with floatingip.	Failed to bind the EIP to the ECS because another EIP has already been bound to the ECS.	Unbind the EIP from the ECS.
	409	VPC.0512	Resource status is busy, try it again later.	The EIP status is abnormal.	Try again later or contact technical support.

Module	Status Code	Error Code	Message	Description	Handling Measure
	404/500	VPC.0514	Neutron Error.	An exception occurs in the IaaS OpenStack system.	Check whether the Neutron service is normal or contact technical support.
Querying a bandwidth	400	VPC.0301	getBandwidth error bandwidthId is invalid.	The bandwidth parameters are incorrect.	Check whether the bandwidth ID is valid.
	404	VPC.0306	No EIP bandwidth exist with id.	The bandwidth object does not exist.	The bandwidth object to be queried does not exist.
	500	VPC.0302	Neutron Error.	An exception occurs in the IaaS OpenStack system.	Check whether the Neutron service is normal or contact technical support.
Querying bandwidths	400	VPC.0301	Get bandwidths error limit is invalid.	The bandwidth parameters are incorrect.	Check whether the parameter values are valid based on the returned error message and API reference document.
	404	VPC.0306	No EIP bandwidth exist with id.	The bandwidth object does not exist.	The bandwidth object to be queried does not exist.

Module	Status Code	Error Code	Message	Description	Handling Measure
	500	VPC.0302	Neutron Error.	An exception occurs in the IaaS OpenStack system.	Check whether the Neutron service is normal or contact technical support.
Updating a bandwidth	400	VPC.0301	updateBandwidth input param is invalid.	The bandwidth parameters are incorrect.	Check whether the parameter values are valid based on the returned error message and API reference document.
	500	VPC.0302	Neutron Error.	Failed to obtain underlying resources.	Check whether the Neutron service is normal or contact technical support.
	500	VPC.0305	updateBandwidth error.	An internal error occurs during the bandwidth update.	Contact technical support.
Assigning a shared bandwidth	400	VPC.0310	NO QUOTAS for shareBandwidth!	Insufficient shared bandwidth quota.	Delete the shared bandwidth that is no longer required or contact technical support.

Module	Status Code	Error Code	Message	Description	Handling Measure
Adding an EIP to or removing an EIP from a shared bandwidth	400	VPC.0301	Invalid publicip_id	Invalid EIP.	Check whether the value of publicip_id in publicip_info is valid.
	400	VPC.0323	publicip can not be operate with this bandwidth	Failed to add an EIP to or remove an EIP from a shared bandwidth.	Check whether the shared bandwidth or EIP is normal.
Querying quotas	400	VPC.1207	resource type is invalid.	The specified resource type does not exist.	Use an existing resource type.
Assigning a private IP address	500	VPC.0701	The IP has been used.	The private IP address already exists.	Change another private IP address and try again.
	400	VPC.0705	IP address is not a valid IP for the specified subnet.	Invalid private IP address	Check whether the specified IP address in the request body is within the subnet CIDR block.
	404	VPC.2204	Query resource by id fail.	The resource does not exist or the permission is insufficient.	Check whether the specified subnet in the request body exists or the current account has the permission to query the subnet.

Module	Status Code	Error Code	Message	Description	Handling Measure
	409	VPC.0703	No more IP addresses available on network xxx.	Insufficient IP addresses.	Check whether the subnet has sufficient IP addresses.
Querying a Private IP Address	404	VPC.0704	Query resource by id fail.	The private IP address does not exist.	Check whether the private IP address exists.
Querying Private IP Addresses	400	VPC.0702	query privatelps error.	Invalid parameters.	Check whether the parameter values are valid based on the returned error message.
Releasing a Private IP Address	404	VPC.0704	Query resource by id fail.	The private IP address does not exist.	Check whether the private IP address exists.
	500	VPC.0706	Delete port fail.	An error occurs when the private IP address is being released.	Try again later or contact technical support.
	409	VPC.0707	privatelps is in use.	The private IP address is in use.	Check whether the private IP address is being used by other resource.

Module	Status Code	Error Code	Message	Description	Handling Measure
Creating a security group	400	VPC.0601	Creating securitygroup name is invalid.	The parameters of the security group are incorrect.	Check whether the parameter values are valid based on the returned error message and API reference document.
	500	VPC.0602	Add security group fail.	An internal error occurs in the security group.	Check whether the Neutron service is normal or contact technical support.
	409	VPC.0604	Quota exceeded for resources: ['security_group'].	Insufficient security group quota.	Delete the security group that is no longer required or apply for increasing the quota.
Querying a security group	400	VPC.0601	Securitygroup id is invalid.	The parameters of the security group are incorrect.	Check whether the security group ID is valid.
	500	VPC.0602	Query security group fail.	An internal error occurs in the security group.	Check whether the Neutron service is normal or contact technical support.

Module	Status Code	Error Code	Message	Description	Handling Measure
	404	VPC.0603	Securitygroup is not exist.	The security group does not exist.	Check whether the security group ID is correct or whether the security group exists under the tenant.
	404/500	VPC.0612	Neutron Error.	An internal error occurs in the security group.	Contact technical support.
Querying security groups	400	VPC.0601	Query security groups error limit is invalid.	The parameters of the security group are incorrect.	Check whether the parameter values are valid based on the returned error message and API reference document.
	500	VPC.0602	Query security groups fail.	An internal error occurs in the security group.	Check whether the Neutron service is normal or contact technical support.

Module	Status Code	Error Code	Message	Description	Handling Measure
Creating a security group rule	409	VPC.0602	1.Security group rule already exists.	The security group rule already exists.	Change the request body for creating a security group rule.
			2.Quota exceeded for resources: ['security_group_rule'].	Insufficient security group rule quota.	Delete the security group rule that is no longer required or apply for increasing the quota.
			3.Failed to create the security group rule concurrently. The rule already exists.	Failed to create the security group rule concurrently. The rule already exists.	Check whether the security group rules created concurrently are different from each other.
Querying the network IP address usage	400	VPC.2301	parameter network_id is invalid.	The request parameter is incorrect.	Enter a valid network ID.
	400	VPC.2302	Network xxx could not be found.	The network is not found.	Ensure that the network ID exists.
Creating a VPC flow log	400	VPC.3001	resource_type/log_store_type/traffic_type/log_group_id/log_topic_id is invalid	Incorrect type or ID.	Check whether the type is supported or whether the ID format is correct.
	400	VPC.3002	Port does not support flow log, port id : xxx	The VPC flow log does not support this type of port.	Check whether the port is an S3, C3, or M3 ECS NIC port.

Module	Status Code	Error Code	Message	Description	Handling Measure
	404	VPC.3002	Port/Network/Vpc xxx could not be found.	The resource does not exist.	Check whether the resource exists.
	409	VPC.3004	Content of flow log is duplicate: resource type xxx, resource id xxx, traffic type all, log group id xxx, log topic id xxx, log store type xxx, log store name xxx.	This VPC flow log already exists.	Modify the parameters of the VPC flow log.
	500	VPC.3002	Create flow log by xxx(tenant_id) fail.	Calling the backend service fails.	Try again later or contact technical support.
Querying VPC flow logs	404	VPC.3001	resource could not be found, xxx(listParam) is invalid	Invalid parameters.	Check whether the parameter format is correct.
	500	VPC.3002	Neutron Error.	Calling the backend service fails.	Try again later or contact technical support.
Querying a VPC flow log	404	VPC.3001	resource could not be found, flowlog id is invalid.	Invalid VPC flow log ID.	Check whether the VPC flow log ID format is correct.
	404	VPC.3002	Flow log xxx could not be found.	The VPC flow log does not exist.	Check whether the VPC flow log exists or whether its ID is correct.
Updating a VPC flow log	404	VPC.3001	resource could not be found, flowlog id is invalid.	Invalid VPC flow log ID.	Check whether the VPC flow log ID format is correct.

Module	Status Code	Error Code	Message	Description	Handling Measure
	404	VPC.3005	Flow log xxx could not be found.	The VPC flow log does not exist.	Check whether the VPC flow log exists or whether its ID is correct.
	500	VPC.3002	Update flow log by xxx(tenant_id) fail.	Calling the backend service fails.	Try again later or contact technical support.
Deleting a VPC flow log	404	VPC.3001	resource could not be found, flowlog id is invalid.	Invalid VPC flow log ID.	Check whether the VPC flow log ID format is correct.
	404	VPC.3005	Flow log xxx could not be found.	The VPC flow log does not exist.	Check whether the VPC flow log exists or whether its ID is correct.
	500	VPC.3002	Delete flow log by xxx(tenant_id) fail.	Calling the backend service fails.	Try again later or contact technical support.

A.5 Obtaining a Project ID

Scenarios

A project ID is required for some URLs when an API is called. Therefore, you need to obtain a project ID in advance. Two methods are available:

- [Obtain the Project ID by Calling an API](#)
- [Obtain the Project ID from the Console](#)

Obtain the Project ID by Calling an API

You can obtain the project ID by calling the IAM API used to query project information based on the specified criteria.

The API used to obtain a project ID is GET `https://{Endpoint}/v3/projects`. {Endpoint} is the IAM endpoint and can be obtained from [Regions and Endpoints](#). For details about API authentication, see [Authentication](#).

The following is an example response. The value of **id** is the project ID.

```
{
  "projects": [
    {
      "domain_id": "65ewtrgaggshhk1223245sghjlse684b",
      "is_domain": false,
      "parent_id": "65ewtrgaggshhk1223245sghjlse684b",
      "name": "project_name",
      "description": "",
      "links": {
        "next": null,
        "previous": null,
        "self": "https://www.example.com/v3/projects/a4adasfjljaaakla12334jklga9sasfg"
      },
      "id": "a4adasfjljaaakla12334jklga9sasfg",
      "enabled": true
    }
  ],
  "links": {
    "next": null,
    "previous": null,
    "self": "https://www.example.com/v3/projects"
  }
}
```

Obtain a Project ID from the Console

To obtain a project ID from the console, perform the following operations:

1. Log in to the management console.
2. Click the username and select **My Credentials** from the drop-down list.

On the **My Credentials** page, view the project ID (value in the **Project ID** column).

B Change History

Released On	Description
2024-04-15	This issue is the first official release.