

**Virtual Private Cloud**

# **API Reference(Kuala Lumpur Region)**

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# 1 Before You Start

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## 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. For the endpoints of all services, see [Regions and Endpoints](#).

## 1.4 Notes and Constraints

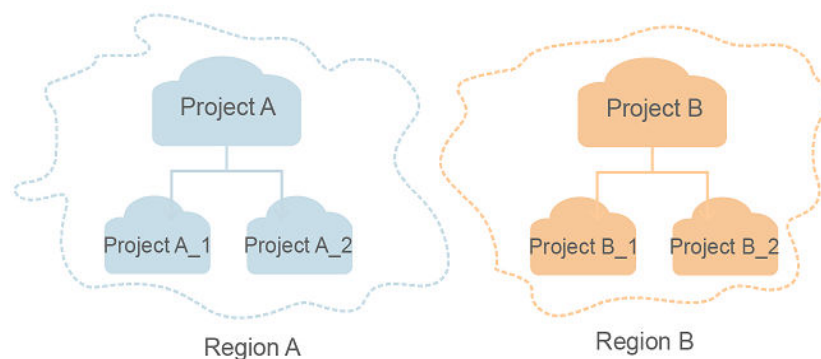
The number of VPCs that you can create is determined by your quota. To view or increase the quota, see "What Is a Quota?" in the *Virtual Private Cloud User Guide*.

For more constraints, see API description.

## 1.5 Concepts

- **Account**  
An account is created upon successful registration. The account has full access permissions for all of its cloud services and resources. It can be used to reset user passwords and grant user permissions. The account is a payment entity, which should not be used directly to perform routine management. For security purposes, create Identity and Access Management (IAM) users and grant them permissions for routine management.
- **User**  
An IAM user is created by an account in IAM to use cloud services. Each IAM user has its own identity credentials (password and access keys).  
API authentication requires information such as the account name, username, and password.
- **Region**  
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 accounts in the region associated with the project. If you need more refined access control, create subprojects under a default project and create resources in subprojects. Then you can assign users the permissions required to access only the resources in the specific subprojects.

**Figure 1-1** Project isolation model



- **Enterprise project**  
Enterprise projects group and manage resources across regions. Resources in different enterprise projects are logically isolated. An enterprise project can contain resources of multiple regions, and resources can be added to or removed from enterprise projects.  
For details about enterprise projects and about how to obtain enterprise project IDs, see *Enterprise Management User Guide*.

## 1.6 Selecting an API Type

The following APIs have been abandoned and are not recommended:

- [Creating a Port \(Discarded\)](#)
- [Querying a Port \(Discarded\)](#)
- [Querying Ports \(Discarded\)](#)
- [Updating a Port \(Discarded\)](#)
- [Deleting a Port \(Discarded\)](#)

# 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	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"> <li>APIs for creating, querying, and deleting security groups</li> </ul>
VPC API	Port	APIs for creating, querying, updating, and deleting ports
VPC API	VPC peering connection	<ul style="list-style-type: none"> <li>APIs for creating, querying, updating, and deleting VPC peering connections</li> <li>APIs for accepting and rejecting VPC peering connection requests</li> </ul>
VPC API	VPC route	APIs for creating, querying, and deleting VPC routes
VPC API	Tag management	<ul style="list-style-type: none"> <li>APIs for adding tags to VPCs, as well as querying and deleting VPC tags</li> <li>APIs for adding tags to subnets as well as querying and deleting subnet tags</li> </ul>

Type	Subtype	Description
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	network ACL	<ul style="list-style-type: none"> <li>• APIs for creating, updating, and releasing network ACLs</li> <li>• APIs for creating, updating, deleting, and querying network ACL rules.</li> <li>• APIs for creating, updating, deleting, and querying network ACL policies</li> </ul>
OpenStack Neutron API	Security group	<ul style="list-style-type: none"> <li>• APIs for creating, querying, updating, and deleting security groups</li> <li>• APIs for creating, querying, and deleting security group rules</li> </ul>

# 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

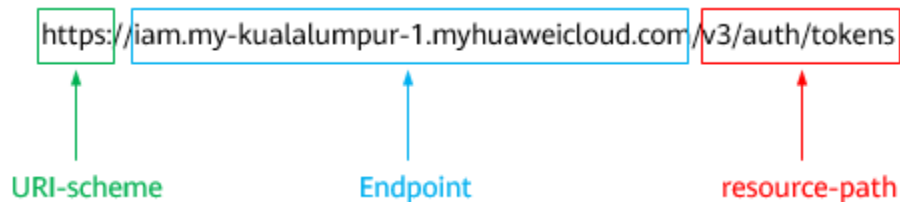
Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from <b>Regions and Endpoints</b> . For example, the endpoint of IAM in the <b>my-kualalumpur-1</b> region is <b>iam.my-kualalumpur-1.myhuaweicloud.com</b> .
resource-path	Access path of an API for performing a specified operation. Obtain the path from the URI of an API. For example, the <b>resource-path</b> of the API used to obtain a user token is <b>/v3/auth/tokens</b> .

Parameter	Description
query-string	Query parameter, which is optional. Ensure that a question mark (?) is included before each query parameter that is in the format of <i>Parameter name=Parameter value</i> . For example, ? <b>limit=10</b> indicates that a maximum of 10 data records will be displayed.

For example, to obtain an IAM token in the **AP-Kuala Lumpur-OP6** region, obtain the endpoint of IAM (**iam.my-kualalumpur-1.myhuaweicloud.com**) for this region and the **resource-path** (**/v3/auth/tokens**) in the URI of the API used to **obtain a user token**. Then, construct the URI as follows:

`https://iam.my-kualalumpur-1.myhuaweicloud.com/v3/auth/tokens`

**Figure 3-1** Example URI



**NOTE**

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

## Request Methods

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

**Table 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.

Method	Description
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://iam.my-kualalumpur-1.myhuaweicloud.com/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 <b>https</b> is <b>443</b> .	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 <b>application/json</b> 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



Parameter	Description	Mandatory	Example Value
X-Project-Id	Specifies the project ID. Obtain the project ID by following the instructions in <a href="#">Obtaining a Project ID</a> .	No	e9993fc787d94b6c886cbaa340f9c0f4
X-Auth-Token	Specifies the user token. It is a response to the API for <a href="#">obtaining a user token</a> (This is the only API that does not require authentication). After the request is processed, the value of <b>X-Subject-Token</b> in the response header is the token value.	No This field is mandatory for token authentication.	The following is part of an example token: MIIPAgYJKoZlHvcNAQcCo...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://iam.my-kualalumpur-1.myhuaweicloud.com/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 [Regions and Endpoints](#).

 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://iam.my-kualalumpur-1.myhuaweicloud.com/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": "xxxxxxxxxxxxxxxxxxxxx"
      }
    }
  }
}
```

If all data required for the API request is available, you can send the request to call the API through [curl](#), [Postman](#), or coding. In the response to the API used to obtain a user token, **X-Subject-Token** is the desired user token. This token can then be used to authenticate the calling of other APIs.

## 3.2 Authentication

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

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

### Token Authentication

 NOTE

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

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

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://iam.my-kualalumpur-1.myhuaweicloud.com/v3/auth/projects
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

## AK/SK Authentication

### NOTE

AK/SK authentication supports API requests with a body not larger than 12 MB. For API requests with a larger body, token authentication is recommended.

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

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

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

### NOTE

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

## 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 3-2](#) 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 3-2** 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 <a href="#">Obtaining a Project ID</a> .

#### Request Parameters

**Table 5-2** Request parameter

Name	Mandatory	Type	Description
vpc	Yes	<a href="#">vpc</a> object	<a href="#">Specifies the VPC objects.</a>



**Table 5-3** VPC objects

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

## 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	<b>vpc</b> object	<b>Specifies the VPC objects.</b>

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

## 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 <a href="#">Obtaining a Project ID</a> .
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	<a href="#">vpc</a> object	<a href="#">Specifies the VPC objects.</a>

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

## 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 <a href="#">Obtaining a Project ID</a> .
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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (<math>2^{31}-1</math>). The default value is 2000.</p> <p><b>limit</b> can be used together with <b>marker</b>. For details, see the parameter description of <b>marker</b>.</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 <b>vpc</b> objects	Specifies the <b>VPC objects</b> .

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

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

**Table 5-15 route objects**

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

### 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	<b>vpc</b> object	<b>Specifies the VPC objects.</b>

**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"> <li>Provides supplementary information about the VPC.</li> <li>The value can contain no more than 255 characters and cannot contain angle brackets (&lt; or &gt;).</li> </ul>

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

**Table 5-18** route objects

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

## 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 <a href="#">Obtaining a Project ID</a> .
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 <a href="#">Obtaining a Project ID</a> .

#### Request Parameters

**Table 5-21** Request parameter

Name	Mandatory	Type	Description
subnet	Yes	<a href="#">subnet</a> object	Specifies the <a href="#">subnet objects</a> .

**Table 5-22** [subnet](#) objects

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

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

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

**Table 5-23 extra\_dhcp\_opt object**

Name	Mandatory	Type	Description
opt_value	No	String	<ul style="list-style-type: none"> <li>Specifies the NTP server address configured for the subnet.</li> <li>Constraints: The option <b>ntp</b> for <b>opt_name</b> 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 <b>null</b> for <b>opt_name</b> indicates that no NTP server is configured for the subnet. The parameter value cannot be an empty string.</li> </ul>
opt_name	Yes	String	<ul style="list-style-type: none"> <li>Specifies the NTP server address configured for the subnet.</li> <li>Currently, the value can only be set to <b>ntp</b>.</li> </ul>

### 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"
    ],
    "availability_zone": "aa-bb-cc",
    "vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85"
  }
}
```



## Response Parameters

**Table 5-24** Response parameter

Name	Type	Description
subnet	<b>subnet</b> object	Specifies the <b>subnet objects</b> .

**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"> <li>Specifies the subnet name.</li> <li>The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</li> </ul>
description	String	<ul style="list-style-type: none"> <li>Provides supplementary information about the subnet.</li> <li>The value can contain no more than 255 characters and cannot contain angle brackets (&lt; or &gt;).</li> </ul>
cidr	String	<ul style="list-style-type: none"> <li>Specifies the subnet CIDR block.</li> <li>The value must be within the VPC CIDR block.</li> <li>The value must be in CIDR format. The subnet mask cannot be greater than 28.</li> </ul>
gateway_ip	String	<ul style="list-style-type: none"> <li>Specifies the gateway of the subnet.</li> <li>The value must be an IP address in the subnet.</li> <li>The value must be a valid IP address.</li> </ul>
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"> <li>Specifies the primary IP address of DNS server on the subnet.</li> <li>The value must be an IP address. If the value is not specified, the default value will be left blank.</li> </ul>
secondary_dns	String	<ul style="list-style-type: none"> <li>Specifies the standby IP address of DNS server on the subnet.</li> <li>The value must be an IP address. If the value is not specified, the default value will be left blank. If only <b>secondary_dns</b> is specified and <b>primary_dns</b> is not specified, <b>primary_dns</b> will automatically use the value of <b>secondary_dns</b>. If there is only one DNS server address, only <b>primary_dns</b> is displayed.</li> </ul>
dnsList	Array of strings	<ul style="list-style-type: none"> <li>Specifies the DNS server address list of a subnet. This field is required if you need to use more than two DNS servers.</li> <li>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.</li> </ul>
availability_zone	String	<ul style="list-style-type: none"> <li>Specifies the AZ to which the subnet belongs, which can be obtained from endpoints.</li> <li>The value must be an existing AZ in the system. If the value is not specified, the default value will be left blank.</li> </ul>
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"> <li>Specifies the status of the subnet.</li> <li>The value can be <b>ACTIVE</b>, <b>UNKNOWN</b>, or <b>ERROR</b>. <ul style="list-style-type: none"> <li><b>ACTIVE</b>: indicates that the subnet has been associated with a VPC.</li> <li><b>UNKNOWN</b>: indicates that the subnet has not been associated with a VPC.</li> <li><b>ERROR</b>: indicates that the subnet is abnormal.</li> </ul> </li> <li>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.</li> <li>The value of status is <b>UNKNOWN</b> 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 <b>ACTIVE</b>.</li> </ul>
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 <b>extra_dhcp_opt</b> objects	Specifies the NTP server address configured for the subnet. For details, see <a href="#">Table 5-26</a> .

**Table 5-26 extra\_dhcp\_opt object**

Name	Mandatory	Type	Description
opt_value	No	String	<ul style="list-style-type: none"> <li>Specifies the NTP server address configured for the subnet.</li> <li>Constraints: The option <b>ntp</b> for <b>opt_name</b> 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 <b>null</b> for <b>opt_name</b> indicates that no NTP server is configured for the subnet. The parameter value cannot be an empty string.</li> </ul>
opt_name	Yes	String	<ul style="list-style-type: none"> <li>Specifies the NTP server address configured for the subnet.</li> <li>Currently, the value can only be set to <b>ntp</b>.</li> </ul>

### 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 <a href="#">Obtaining a Project ID</a> .
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 <b>Network ID</b> 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	<b>subnet</b> object	Specifies the <b>subnet objects</b> .

**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"> <li>Specifies the subnet name.</li> <li>The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</li> </ul>
description	String	<ul style="list-style-type: none"> <li>Provides supplementary information about the subnet.</li> <li>The value can contain no more than 255 characters and cannot contain angle brackets (&lt; or &gt;).</li> </ul>
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"> <li>Specifies the status of the subnet.</li> <li>The value can be <b>ACTIVE</b>, <b>UNKNOWN</b>, or <b>ERROR</b>. <ul style="list-style-type: none"> <li><b>ACTIVE</b>: indicates that the subnet has been associated with a VPC.</li> <li><b>UNKNOWN</b>: indicates that the subnet has not been associated with a VPC.</li> <li><b>ERROR</b>: indicates that the subnet is abnormal.</li> </ul> </li> </ul>
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 <a href="#">Obtaining a Project ID</a> .



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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (<math>2^{31}-1</math>). The default value is 2000.</p> <p><b>limit</b> can be used together with <b>marker</b>. For details, see the parameter description of <b>marker</b>.</p>
vpc_id	No	String	Specifies the VPC ID that is used to query subnets.

## 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 <a href="#">subnet</a> 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"> <li>Specifies the subnet name.</li> <li>The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</li> </ul>
description	String	<ul style="list-style-type: none"> <li>Provides supplementary information about the subnet.</li> <li>The value can contain no more than 255 characters and cannot contain angle brackets (&lt; or &gt;).</li> </ul>
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"> <li>Specifies the status of the subnet.</li> <li>The value can be <b>ACTIVE</b>, <b>UNKNOWN</b>, or <b>ERROR</b>. <ul style="list-style-type: none"> <li><b>ACTIVE</b>: indicates that the subnet has been associated with a VPC.</li> <li><b>UNKNOWN</b>: indicates that the subnet has not been associated with a VPC.</li> <li><b>ERROR</b>: indicates that the subnet is abnormal.</li> </ul> </li> </ul>
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 <a href="#">Obtaining a Project ID</a> .
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 <b>Network ID</b> value.

## Request Parameters

**Table 5-34** Request parameter

Name	Mandatory	Type	Description
subnet	Yes	<b>subnet</b> object	Specifies the <b>subnet objects</b> .

**Table 5-35** subnet objects

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

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

## 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](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	<a href="#">subnet</a> object	Specifies the <b>subnet</b> 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"><li>• Specifies the status of the subnet.</li><li>• The value can be <b>ACTIVE</b>, <b>UNKNOWN</b>, or <b>ERROR</b>.<ul style="list-style-type: none"><li>– <b>ACTIVE</b>: indicates that the subnet has been associated with a VPC.</li><li>– <b>UNKNOWN</b>: indicates that the subnet has not been associated with a VPC.</li><li>– <b>ERROR</b>: indicates that the subnet is abnormal.</li></ul></li></ul>

## 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 <a href="#">Obtaining a Project ID</a> .
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 <b>Network ID</b> 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 Quota

### 5.3.1 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 5-39](#) describes the parameters.

**Table 5-39** 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> .

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

## Request Parameters

None

## Example Request

GET [https://{{Endpoint}}/v1/{{project\\_id}}/quotas](https://{{Endpoint}}/v1/{{project_id}}/quotas)

## Response Parameters

**Table 5-40** Response parameter

Name	Type	Description
quotas	<b>quotas</b> object	Specifies the quota object. For details, see <a href="#">Table 5-41</a> .

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

Name	Type	Description
resources	Array of <b>resource</b> objects	Specifies the resource objects. For details, see <a href="#">Table 5-42</a> .

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

Name	Type	Description
type	String	<ul style="list-style-type: none"> <li>• Specifies the resource type.</li> <li>• Values: <ul style="list-style-type: none"> <li>- <b>vpc</b>: VPC</li> <li>- <b>subnet</b>: Subnet</li> <li>- <b>securityGroup</b>: Security group</li> <li>- <b>securityGroupRule</b>: Security group rule</li> <li>- <b>publicIp</b>: EIP</li> <li>- <b>vpn</b>: VPN</li> <li>- <b>vpngw</b>: VPN gateway</li> <li>- <b>vpcPeer</b>: VPC peering connection</li> <li>- <b>loadbalancer</b>: Load balancer</li> <li>- <b>listener</b>: Load balancer listener</li> <li>- <b>physicalConnect</b>: Direct Connect connection</li> <li>- <b>virtualInterface</b>: Virtual interface</li> <li>- <b>firewall</b>: Firewall</li> <li>- <b>shareBandwidthIP</b>: IP address added to a shared bandwidth</li> <li>- <b>shareBandwidth</b>: Shared bandwidth</li> <li>- <b>address_group</b>: IP address group</li> <li>- <b>flow_log</b>: VPC flow log</li> <li>- <b>vpcContainRoutetable</b>: Number of route tables associated with a VPC</li> <li>- <b>routetableContainRoutes</b>: Number of routes in a route table</li> </ul> </li> </ul>
used	Integer	<ul style="list-style-type: none"> <li>• Specifies the number of created network resources.</li> <li>• The value ranges from <b>0</b> to the value of <b>quota</b>.</li> </ul>
quota	Integer	<ul style="list-style-type: none"> <li>• Specifies the maximum quota values for the resources.</li> <li>• The value ranges from the default quota value to the maximum quota value.</li> </ul>
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": "vpn",
        "used": 0,
        "quota": 5,
        "min": 0
      },
      {
        "type": "vpngw",
        "used": 0,
        "quota": 2,
        "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](#).

# 5.4 Private IP Address

## 5.4.1 Assigning a Private IP Address

### Function

This API is used to assign a private IP address.

## URI

POST /v1/{project\_id}/privateips

[Table 5-43](#) describes the parameters.

**Table 5-43** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

## Request Parameters

**Table 5-44** Request parameter

Name	Mandatory	Type	Description
privateips	Yes	Array of <a href="#">privateip</a> objects	Specifies the private IP address objects. For details, see <a href="#">Table 5-45</a> .

**Table 5-45** 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 <b>Network ID</b> value.
ip_address	No	String	<ul style="list-style-type: none"> <li>Specifies the target IP address.</li> <li>The value can be an available IP address in the subnet. If it is not specified, the system automatically assigns an IP address.</li> </ul>

## 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 5-46** Response parameter

Name	Type	Description
privateips	Array of <b>privateip</b> objects	Specifies the private IP address objects. For details, see <a href="#">Table 5-47</a> .

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

Name	Type	Description
status	String	<ul style="list-style-type: none"> <li>Specifies the status of the private IP address.</li> <li>Possible values are as follows:               <ul style="list-style-type: none"> <li><b>ACTIVE</b></li> <li><b>DOWN</b></li> </ul> </li> </ul>
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 <b>Network ID</b> value.
tenant_id	String	Specifies the project ID.



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

## 5.4.2 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 5-48](#) describes the parameters.

**Table 5-48** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 5-49** Response parameter

Name	Type	Description
privateip	<b>privateip</b> object	Specifies the private IP address objects. For details, see <a href="#">Table 5-50</a> .

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

Name	Type	Description
status	String	<ul style="list-style-type: none"> <li>Specifies the status of the private IP address.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>ACTIVE</b></li> <li><b>DOWN</b></li> </ul> </li> </ul>
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 <b>Network ID</b> value.
tenant_id	String	Specifies the project ID.

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

## 5.4.3 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 5-51](#) describes the parameters.

**Table 5-51** 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 <a href="#">Obtaining a Project ID</a> .
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 <b>Network ID</b> value.

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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2<sup>31</sup>-1). The default value is 2000.</p> <p><b>limit</b> can be used together with <b>marker</b>. For details, see the parameter description of <b>marker</b>.</p>

## Request Parameters

None

## Example Request

GET https://{Endpoint}/v1/{project\_id}/subnets/{subnet\_id}/privateips

## Response Parameters

**Table 5-52** Request parameter

Name	Type	Description
privateips	Array of <b>privateip</b> objects	Specifies the private IP address objects. For details, see <a href="#">Table 5-53</a> .

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

Name	Type	Description
status	String	<ul style="list-style-type: none"> <li>Specifies the status of the private IP address.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>ACTIVE</b></li> <li><b>DOWN</b></li> </ul> </li> </ul>
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 <b>Network ID</b> value.</p>
tenant_id	String	Specifies the project ID.

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

## 5.4.4 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 5-54](#) describes the parameters.

**Table 5-54** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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](#).

# 5.5 Security Group

## 5.5.1 Creating a Security Group

### Function

This API is used to create a security group.

### URI

POST /v1/{project\_id}/security-groups

[Table 5-55](#) describes the parameters.

**Table 5-55** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

### Request Parameters

**Table 5-56** Request parameter

Name	Mandatory	Type	Description
security_group	Yes	<a href="#">security_group</a> object	Specifies the security group objects. For details, see <a href="#">Table 5-57</a> .

**Table 5-57** Description of [security\\_group](#) fields

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

Name	Mandatory	Type	Description
vpc_id	No	String	Specifies the ID of the VPC that the security group is associated with. <b>NOTE</b> 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 5-58** Response parameter

Name	Type	Description
security_group	<a href="#">security_group</a> object	Specifies the security group objects. For details, see <a href="#">Table 5-59</a> .

**Table 5-59** 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. <b>NOTE</b> 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 <a href="#">security_group_rule</a> objects	Specifies the default security group rules, which ensure that resources in the security group can communicate with one another.

**Table 5-60 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"> <li>Provides supplementary information about the security group rule.</li> <li>The value can contain no more than 255 characters, including letters and digits.</li> </ul>
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"> <li>Specifies the direction of access control.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>egress</b></li> <li><b>ingress</b></li> </ul> </li> </ul>
ethertype	String	<ul style="list-style-type: none"> <li>Specifies the IP protocol version.</li> <li>The value can be <b>IPv4</b> or <b>IPv6</b>.</li> </ul>

Name	Type	Description
protocol	String	<ul style="list-style-type: none"> <li>Specifies the protocol type.</li> <li>The value can be <b>icmp</b>, <b>tcp</b>, <b>udp</b>, <b>icmpv6</b>, or an IP protocol number (0 to 255, for example, 47 for GRE)</li> <li>If the parameter is left blank, all protocols are supported.</li> </ul>
port_range_min	Integer	<ul style="list-style-type: none"> <li>Specifies the start port number.</li> <li>The value ranges from 1 to 65535.</li> <li>The value cannot be greater than the <b>port_range_max</b> value. An empty value indicates all ports. If the protocol is <b>icmp</b>, the value range is shown in <a href="#">ICMP-Port Range Relationship Table</a>.</li> </ul>
port_range_max	Integer	<ul style="list-style-type: none"> <li>Specifies the end port number.</li> <li>The value ranges from 1 to 65535.</li> <li>If the protocol is not <b>icmp</b>, the value cannot be smaller than the <b>port_range_min</b> value. An empty value indicates all ports. If the protocol is <b>icmp</b>, the value range is shown in <a href="#">ICMP-Port Range Relationship Table</a>.</li> </ul>
remote_ip_prefix	String	<ul style="list-style-type: none"> <li>Specifies the remote IP address. If the access control direction is set to <b>egress</b>, the parameter specifies the source IP address. If the access control direction is set to <b>ingress</b>, the parameter specifies the destination IP address.</li> <li>The value can be in the CIDR format or IP addresses.</li> <li>The parameter is mutually exclusive with parameter <b>remote_group_id</b>.</li> </ul>

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

## 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,
        "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,
        "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,
        "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,  
    "port_range_max": null,  
    "port_range_min": null  
  }  
]  
}
```

## Status Codes

See [Status Codes](#).

## Error Codes

See [Error Codes](#).

## 5.5.2 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 5-61](#) describes the parameters.

**Table 5-61** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 5-62** Response parameter

Name	Type	Description
security_group	<a href="#">security_group</a> object	Specifies the security group object.

**Table 5-63** 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. <b>NOTE</b> 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 <a href="#">security_group_rule</a> objects	Specifies the default security group rules, which ensure that resources in the security group can communicate with one another.

**Table 5-64** **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"> <li>Provides supplementary information about the security group rule.</li> <li>The value can contain no more than 255 characters, including letters and digits.</li> </ul>
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"> <li>Specifies the direction of access control.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>egress</b></li> <li><b>ingress</b></li> </ul> </li> </ul>
ethertype	String	<ul style="list-style-type: none"> <li>Specifies the IP protocol version.</li> <li>The value can be <b>IPv4</b> or <b>IPv6</b>.</li> </ul>
protocol	String	<ul style="list-style-type: none"> <li>Specifies the protocol type.</li> <li>The value can be <b>icmp</b>, <b>tcp</b>, <b>udp</b>, <b>icmpv6</b>, or an IP protocol number (0 to 255, for example, 47 for GRE)</li> <li>If the parameter is left blank, all protocols are supported.</li> </ul>
port_range_min	Integer	<ul style="list-style-type: none"> <li>Specifies the start port number.</li> <li>The value ranges from 1 to 65535.</li> <li>The value cannot be greater than the <b>port_range_max</b> value. An empty value indicates all ports. If the protocol is <b>icmp</b>, the value range is shown in <a href="#">ICMP-Port Range Relationship Table</a>.</li> </ul>

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

## 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,
    "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,
    "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,
    "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,
    "port_range_max": null,
    "port_range_min": null
  }
]
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.5.3 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 5-65](#) describes the parameters.

**Table 5-65** 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> .

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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>

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 <sup>31</sup> -1). The default value is 2000.  <b>limit</b> can be used together with <b>marker</b> . For details, see the parameter description of <b>marker</b> .
vpc_id	No	String	Specifies that the VPC ID is used as the filtering condition.

## Request Parameters

None

## Example Request

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

## Response Parameters

**Table 5-66** Response parameter

Name	Type	Description
security_groups	Array of <a href="#">security_group</a> objects	Specifies the security group objects. For details, see <a href="#">Table 5-67</a> .

**Table 5-67** 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 resource ID of the VPC to which the security group belongs. <b>NOTE</b> 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 <a href="#">security_group_rule</a> objects	Specifies the default security group rules, which ensure that resources in the security group can communicate with one another.

**Table 5-68 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"><li>Provides supplementary information about the security group rule.</li><li>The value can contain no more than 255 characters, including letters and digits.</li></ul>
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"><li>Specifies the direction of access control.</li><li>Possible values are as follows:<ul style="list-style-type: none"><li><b>egress</b></li><li><b>ingress</b></li></ul></li></ul>
ethertype	String	<ul style="list-style-type: none"><li>Specifies the IP protocol version.</li><li>The value can be <b>IPv4</b> or <b>IPv6</b>.</li></ul>

Name	Type	Description
protocol	String	<ul style="list-style-type: none"> <li>Specifies the protocol type.</li> <li>The value can be <b>icmp</b>, <b>tcp</b>, <b>udp</b>, <b>icmpv6</b>, or an IP protocol number (0 to 255, for example, 47 for GRE)</li> <li>If the parameter is left blank, all protocols are supported.</li> </ul>
port_range_min	Integer	<ul style="list-style-type: none"> <li>Specifies the start port number.</li> <li>The value ranges from 1 to 65535.</li> <li>The value cannot be greater than the <b>port_range_max</b> value. An empty value indicates all ports. If the protocol is <b>icmp</b>, the value range is shown in <a href="#">ICMP-Port Range Relationship Table</a>.</li> </ul>
port_range_max	Integer	<ul style="list-style-type: none"> <li>Specifies the end port number.</li> <li>The value ranges from 1 to 65535.</li> <li>If the protocol is not <b>icmp</b>, the value cannot be smaller than the <b>port_range_min</b> value. An empty value indicates all ports. If the protocol is <b>icmp</b>, the value range is shown in <a href="#">ICMP-Port Range Relationship Table</a>.</li> </ul>
remote_ip_prefix	String	<ul style="list-style-type: none"> <li>Specifies the remote IP address. If the access control direction is set to <b>egress</b>, the parameter specifies the source IP address. If the access control direction is set to <b>ingress</b>, the parameter specifies the destination IP address.</li> <li>The value can be in the CIDR format or IP addresses.</li> <li>The parameter is mutually exclusive with parameter <b>remote_group_id</b>.</li> </ul>



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

## 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,
          "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,
          "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,
          "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,
    "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](#).

## 5.5.4 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 5-69](#) describes the parameters.

**Table 5-69** 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 <a href="#">Obtaining a Project ID</a> .

## 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](#).

## 5.5.5 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 5-70** Request parameter

Name	Mandatory	Type	Description
security_group_rule	Yes	<a href="#">security_group_rule</a> object	Specifies the security group rule objects. For details, see <a href="#">Table 5-71</a> .

**Table 5-71** 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"> <li>Provides supplementary information about the security group rule.</li> <li>The value can contain no more than 255 characters, including letters and digits.</li> </ul>
direction	Yes	String	<ul style="list-style-type: none"> <li>Access control direction specified in a security group rule.</li> <li>The value can be:                             <ul style="list-style-type: none"> <li><b>egress</b></li> <li><b>ingress</b></li> </ul> </li> </ul>
ethertype	No	String	<ul style="list-style-type: none"> <li>Specifies the IP protocol version.</li> <li>The value can be <b>IPv4</b> or <b>IPv6</b>.</li> <li>If you do not set this parameter, <b>IPv4</b> is used by default.</li> </ul>

Name	Mandatory	Type	Description
protocol	No	String	<ul style="list-style-type: none"> <li>Specifies the protocol type.</li> <li>The value can be <b>icmp</b>, <b>tcp</b>, <b>udp</b>, <b>icmpv6</b>, or an IP protocol number (0 to 255, for example, 47 for GRE)</li> <li>If the parameter is left blank, all protocols are supported. When the protocol is <b>icmpv6</b>, IP protocol version should be <b>IPv6</b>. When the protocol is <b>icmp</b>, IP protocol version should be <b>IPv4</b>.</li> </ul>
port_range_min	No	Integer	<ul style="list-style-type: none"> <li>Specifies the start port number.</li> <li>The value ranges from 1 to 65535.</li> <li>The value cannot be greater than the <b>port_range_max</b> value. An empty value indicates all ports. If the protocol is <b>icmp</b>, the value range is shown in <a href="#">ICMP-Port Range Relationship Table</a>.</li> </ul>
port_range_max	No	Integer	<ul style="list-style-type: none"> <li>Specifies the end port number.</li> <li>The value ranges from 1 to 65535.</li> <li>If the protocol is not <b>icmp</b>, the value cannot be smaller than the <b>port_range_min</b> value. An empty value indicates all ports. If the protocol is <b>icmp</b>, the value range is shown in <a href="#">ICMP-Port Range Relationship Table</a>.</li> </ul>

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

## 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 5-72** Response parameter

Name	Type	Description
security_group_rule	<a href="#">security_group_rule</a> object	Specifies the security group rule objects. For details, see <a href="#">Table 5-73</a> .

**Table 5-73** 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"> <li>Provides supplementary information about the security group rule.</li> <li>The value can contain no more than 255 characters, including letters and digits.</li> </ul>
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"> <li>Specifies the direction of access control.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>egress</b></li> <li><b>ingress</b></li> </ul> </li> </ul>
ethertype	String	<ul style="list-style-type: none"> <li>Specifies the IP protocol version.</li> <li>The value can be <b>IPv4</b> or <b>IPv6</b>.</li> </ul>
protocol	String	<ul style="list-style-type: none"> <li>Specifies the protocol type.</li> <li>The value can be <b>icmp</b>, <b>tcp</b>, <b>udp</b>, <b>icmpv6</b>, or an IP protocol number (0 to 255, for example, 47 for GRE)</li> <li>If the parameter is left blank, all protocols are supported.</li> </ul>

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



## 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"
  }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.5.6 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 5-74](#) describes the parameters.

**Table 5-74** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 5-75** Response parameter

Name	Type	Description
security_group_rule	<a href="#">security_group_rule</a> object	Specifies the security group rule objects. For details, see <a href="#">Table 5-76</a> .

**Table 5-76** [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"> <li>Provides supplementary information about the security group rule.</li> <li>The value can contain no more than 255 characters, including letters and digits.</li> </ul>
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"> <li>Specifies the direction of access control.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>egress</b></li> <li><b>ingress</b></li> </ul> </li> </ul>
ethertype	String	<ul style="list-style-type: none"> <li>Specifies the IP protocol version.</li> <li>The value can be <b>IPv4</b> or <b>IPv6</b>.</li> </ul>
protocol	String	<ul style="list-style-type: none"> <li>Specifies the protocol type.</li> <li>The value can be <b>icmp</b>, <b>tcp</b>, <b>udp</b>, <b>icmpv6</b>, or an IP protocol number (0 to 255, for example, 47 for GRE)</li> <li>If the parameter is left blank, all protocols are supported.</li> </ul>

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

## 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"
  }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.5.7 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 5-77](#) describes the parameters.

**Table 5-77** 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> .

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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>

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 <sup>31</sup> -1). The default value is 2000.  <b>limit</b> can be used together with <b>marker</b> . For details, see the parameter description of <b>marker</b> .
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 <a href="#">security_group_rule</a> objects	Specifies the security group rule objects. For details, see <a href="#">Table 5-78</a> .

**Table 5-78 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"> <li>Provides supplementary information about the security group rule.</li> <li>The value can contain no more than 255 characters, including letters and digits.</li> </ul>

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"> <li>Specifies the direction of access control.</li> <li>Possible values are as follows: <ul style="list-style-type: none"> <li><b>egress</b></li> <li><b>ingress</b></li> </ul> </li> </ul>
ethertype	String	<ul style="list-style-type: none"> <li>Specifies the IP protocol version.</li> <li>The value can be <b>IPv4</b> or <b>IPv6</b>.</li> </ul>
protocol	String	<ul style="list-style-type: none"> <li>Specifies the protocol type.</li> <li>The value can be <b>icmp</b>, <b>tcp</b>, <b>udp</b>, <b>icmpv6</b>, or an IP protocol number (0 to 255, for example, 47 for GRE)</li> <li>If the parameter is left blank, all protocols are supported.</li> </ul>
port_range_min	Integer	<ul style="list-style-type: none"> <li>Specifies the start port number.</li> <li>The value ranges from 1 to 65535.</li> <li>The value cannot be greater than the <b>port_range_max</b> value. An empty value indicates all ports. If the protocol is <b>icmp</b>, the value range is shown in <a href="#">ICMP-Port Range Relationship Table</a>.</li> </ul>
port_range_max	Integer	<ul style="list-style-type: none"> <li>Specifies the end port number.</li> <li>The value ranges from 1 to 65535.</li> <li>If the protocol is not <b>icmp</b>, the value cannot be smaller than the <b>port_range_min</b> value. An empty value indicates all ports. If the protocol is <b>icmp</b>, the value range is shown in <a href="#">ICMP-Port Range Relationship Table</a>.</li> </ul>

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

## 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"
    },
    {
      "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"
    },
    {
      "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"
  },
  {
    "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"
  }
]
}

```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.5.8 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 5-79](#) describes the parameters.

**Table 5-79** 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 <a href="#">Obtaining a Project ID</a> .

## 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](#).

# 5.6 Port

## 5.6.1 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 5-80](#) describes the parameters.

**Table 5-80** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

## Request Parameters

**Table 5-81** Request parameter

Name	Mandatory	Type	Description
port	Yes	<a href="#">port</a> object	Specifies the port objects. For details, see <a href="#">Table 5-82</a> .

**Table 5-82** Description of the [port](#) field

Name	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none"> <li>Specifies the port name.</li> <li>The value can contain up to 255 characters. This parameter is left blank by default.</li> </ul>
network_id	Yes	String	<ul style="list-style-type: none"> <li>Specifies the ID of the network to which the port belongs.</li> <li>The network ID must exist.</li> </ul>
admin_state_up	No	Boolean	<ul style="list-style-type: none"> <li>Specifies the administrative state of the port.</li> <li>The default value is <b>true</b>.</li> </ul>
device_owner	No	String	<ul style="list-style-type: none"> <li>Specifies the device to which the port belongs.</li> <li>Currently, only "" and <b>neutron:VIP_PORT</b> are supported. <b>neutron:VIP_PORT</b> indicates the port of a virtual IP address.</li> </ul>
fixed_ips	No	Array of <a href="#">fixed_ip</a> objects	<ul style="list-style-type: none"> <li>Specifies the port IP address. For example, the value is <b>"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]</b>. For details, see <a href="#">Table 5-83</a>.</li> <li>A port supports only one fixed IP address that cannot be changed.</li> </ul>

Name	Mandatory	Type	Description
tenant_id	No	String	Specifies the project ID.
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.
allowed_address_pairs	No	Array of <a href="#">allowed_addresses_pairs</a> objects	<ul style="list-style-type: none"> <li>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 <b>allowed_address_pair</b> in <a href="#">Table 5-84</a>.</li> <li>The IP address cannot be <b>0.0.0.0/0</b>.</li> <li>Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> <li>If the value of <b>allowed_address_pairs</b> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> <li>If the virtual IP address is bound to a cloud server: <ul style="list-style-type: none"> <li>The value of <b>mac_address</b> can be left blank or set to the MAC address of the NIC bound to the cloud server.</li> <li>Set <b>allowed_address_pairs</b> of the cloud server to <b>1.1.1.1/0</b>.</li> </ul> </li> </ul>
extra_dhcp_opts	No	Array of <a href="#">extra_dhcp_opt</a> objects	Specifies the extended option (extended attribute) of DHCP. For details, see <a href="#">Table 5-85</a> .

Table 5-83 fixed\_ip objects

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

Table 5-84 allowed\_address\_pairs objects

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

**Table 5-85** 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 <b>opt_name</b> is <b>51</b> , the value format of <b>opt_value</b> is <i>Xh</i> , indicating that the DHCP lease time is <i>X</i> hours.  The value of <i>X</i> is <b>-1</b> or from <b>1</b> to <b>30000</b> . If the value is <b>-1</b> , 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 5-86** Response parameter

Name	Type	Description
port	<a href="#">port</a> object	Specifies the port objects. For details, see <a href="#">Table 5-87</a> .

**Table 5-87** 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"> <li>Specifies the port name.</li> <li>The value can contain up to 255 characters. This parameter is left blank by default.</li> </ul>
network_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the network to which the port belongs.</li> <li>The network ID must exist.</li> </ul>
admin_state_up	Boolean	<ul style="list-style-type: none"> <li>Specifies the administrative state of the port.</li> <li>The default value is <b>true</b>.</li> </ul>
mac_address	String	<ul style="list-style-type: none"> <li>Specifies the MAC address of the port.</li> <li>The MAC address is assigned by the system not specified by users.</li> </ul>
fixed_ips	Array of <b>fixed_ip</b> objects	<ul style="list-style-type: none"> <li>Specifies the port IP address. For example, the value is "<b>fixed_ips</b>": [{"<b>subnet_id</b>": "4dc70db6-cb7f-4200-9790-a6a910776bba", "<b>ip_address</b>": "192.169.25.79"}]. For details, see <a href="#">Table 5-88</a>.</li> <li>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.</li> </ul>
device_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the device to which the port belongs.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>

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



Name	Type	Description
allowed_address_pairs	Array of <b>allowed_address_pairs</b> objects	<ul style="list-style-type: none"> <li>• Specifies the IP address and MAC address pair. An address pair consists of an IP address and a MAC address. For details, see <a href="#">Table 5-89</a>.</li> <li>• The IP address cannot be <b>0.0.0.0/0</b>.</li> <li>• Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> <li>• If the value of <b>allowed_address_pairs</b> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> <li>• Set <b>allowed_address_pairs</b> of the cloud server to <b>1.1.1.1/0</b>.</li> </ul>
extra_dhcp_opts	Array of <b>extra_dhcp_opt</b> objects	Specifies the extended option (extended attribute) of DHCP. For details, see <a href="#">Table 5-90</a> .
binding:vif_details	<b>binding:vif_details</b> object	For details, see <a href="#">Table 5-91</a> .

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"> <li>• The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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></li> <li>• The <b>disable_security_groups</b> field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: <code>{"disable_security_groups": true }</code> Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> </ul>
binding:vnic_type	String	<ul style="list-style-type: none"> <li>• Specifies the type of the bound vNIC.</li> <li>• The value can be <b>normal</b> or <b>direct</b>.</li> <li>• <b>normal</b> indicates software switching. <b>direct</b> indicates SR-IOV PCIe passthrough, which is not supported.</li> </ul>

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

**Table 5-88 fixed\_ip** object

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

**Table 5-89 allowed\_address\_pairs** objects

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

**Table 5-90 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 <b>opt_name</b> is <b>51</b>, the value format of <b>opt_value</b> is <math>Xh</math>, indicating that the DHCP lease time is <math>X</math> hours.</p> <p>The value of <math>X</math> is <b>-1</b> or from <b>1</b> to <b>30000</b>. If the value is <b>-1</b>, the DHCP lease time is infinite.</p>

**Table 5-91 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](#).

## 5.6.2 Querying a Port

### Function

This API is used to query a single port.

### URI

GET /v1/{project\_id}/ports/{port\_id}

[Table 5-92](#) describes the parameters.

**Table 5-92** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

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 5-93** Response parameter

Name	Type	Description
port	<a href="#">port</a> object	Specifies the port objects. For details, see <a href="#">Table 5-94</a> .

**Table 5-94** 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"> <li>Specifies the port name.</li> <li>The value can contain up to 255 characters. This parameter is left blank by default.</li> </ul>
network_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the network that the port belongs to.</li> <li>The network ID must exist.</li> </ul>
admin_state_up	Boolean	<ul style="list-style-type: none"> <li>Specifies the administrative state of the port.</li> <li>The default value is <b>true</b>.</li> </ul>
mac_address	String	<ul style="list-style-type: none"> <li>Specifies the port MAC address.</li> <li>The MAC address is assigned by the system not specified by users.</li> </ul>

Parameter	Type	Description
fixed_ips	Array of <a href="#">fixed_ip</a> objects	<ul style="list-style-type: none"> <li>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 <a href="#">Table 5-95</a>.</li> <li>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.</li> </ul>
device_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the device that the port belongs to.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>
device_owner	String	<ul style="list-style-type: none"> <li>Specifies the owner of the device to which the port belongs, which can be a DHCP server, router, load balancer, or Nova.</li> <li>The value can be <b>network:dhcp</b>, <b>network:router_interface_distributed</b>, <b>compute:xxx</b>, <b>neutron:VIP_PORT</b>, <b>neutron:LOADBALANCERV2</b>, <b>neutron:LOADBALANCERV3</b>, <b>network:endpoint_interface</b>, <b>network:nat_gateway</b>, or <b>network:ucmp</b>. (In value <b>compute:xxx</b>, <b>xxx</b> specifies the AZ name, for example, <b>compute:aa-bb-cc</b> indicates that the private IP address is used by an ECS in the <b>aa-bb-cc</b> AZ).</li> <li>This parameter value cannot be updated. You can only set <b>device_owner</b> to <b>neutron:VIP_PORT</b> 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 <b>neutron:VIP_PORT</b>.</li> </ul>
tenant_id	String	Specifies the project ID.

Parameter	Type	Description
status	String	<ul style="list-style-type: none"> <li>Specifies the port status. The status of a HANA SR-IOV VM port is always <b>DOWN</b>.</li> <li>The value can be <b>ACTIVE</b>, <b>BUILD</b>, or <b>DOWN</b>.</li> </ul>
security_groups	Array of strings	Specifies the security group UUID (extended attribute).
allowed_address_pairs	Array of <a href="#">allowed_addresses_pairs</a> objects	<ul style="list-style-type: none"> <li>Specifies the IP address and MAC address pair. An address pair consists of an IP address and a MAC address. For details, see <a href="#">Table 5-96</a>.</li> <li>The IP address cannot be <b>0.0.0.0/0</b>.</li> <li>Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> <li>If the value of <b>allowed_address_pairs</b> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> <li>Set <b>allowed_address_pairs</b> of the cloud server to <b>1.1.1.1/0</b>.</li> </ul>
extra_dhcp_opts	Array of <a href="#">extra_dhcp_options</a> objects	Specifies the extended option (extended attribute) of DHCP. For details, see <a href="#">Table 5-97</a> .
binding:vif_details	<a href="#">binding:vif_details</a> object	For details, see <a href="#">Table 5-98</a> .



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"> <li>The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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></li> <li>The <b>disable_security_groups</b> field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: <code>{"disable_security_groups": true }</code> Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> </ul>
binding:vnic_type	String	<ul style="list-style-type: none"> <li>Specifies the type of the bound vNIC.</li> <li>The value can be <b>normal</b> or <b>direct</b>.</li> <li><b>normal</b> indicates software switching. <b>direct</b> indicates SR-IOV PCIe passthrough, which is not supported.</li> </ul>
instance_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the instance to which the port belongs, for example, RDS instance ID.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>

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

**Table 5-95 fixed\_ip object**

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

**Table 5-96 allowed\_address\_pairs** objects

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

**Table 5-97 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 <b>opt_name</b> is <b>51</b>, the value format of <b>opt_value</b> is <math>Xh</math>, indicating that the DHCP lease time is <math>X</math> hours.</p> <p>The value of <math>X</math> is <b>-1</b> or from <b>1</b> to <b>30000</b>. If the value is <b>-1</b>, the DHCP lease time is infinite.</p>

**Table 5-98 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](#).

## 5.6.3 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 5-99](#) describes the parameters.

**Table 5-99** 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> .
id	No	String	<ul style="list-style-type: none"> <li>Specifies the port ID that is used as the filter.</li> </ul>
name	No	String	<ul style="list-style-type: none"> <li>Specifies the port name that is used as the filter.</li> <li>The value can contain up to 255 characters.</li> </ul>
admin_state_up	No	Boolean	<ul style="list-style-type: none"> <li>Specifies the administrative state that is used as the filter.</li> <li>The value can be <b>true</b> or <b>false</b>.</li> </ul>
network_id	No	String	<ul style="list-style-type: none"> <li>Specifies the network ID that is used as the filter.</li> </ul>
mac_address	No	String	<ul style="list-style-type: none"> <li>Specifies the MAC address that is used as the filter.</li> </ul>
device_id	No	String	<ul style="list-style-type: none"> <li>Specifies the device ID that is used as the filter.</li> </ul>
device_owner	No	String	<ul style="list-style-type: none"> <li>Specifies the device owner that is used as the filter.</li> <li>For details about value range, see parameter <b>device_owner</b> in <a href="#">Table 5-101</a>.</li> </ul>
status	No	String	<ul style="list-style-type: none"> <li>Specifies the status that is used as the filter.</li> <li>The value can be <b>ACTIVE</b>, <b>BUILD</b>, or <b>DOWN</b>.</li> </ul>
security_groups	No	Array of strings	<ul style="list-style-type: none"> <li>Specifies the UUID of the security group that is used as the filter.</li> </ul>

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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (<math>2^{31}-1</math>). The default value is 2000.</p> <p><b>limit</b> can be used together with <b>marker</b>. For details, see the parameter description of <b>marker</b>.</p>

Name	Mandatory	Type	Description
fixed_ips	No	Array of strings	<ul style="list-style-type: none"> <li>Specifies the port IP address or the ID of the subnet that the port belongs to that is used as the filter.</li> <li>The value can be <b>fixed_ips=ip_address={ip_address}</b> or <b>fixed_ips=subnet_id={subnet_id}</b>. 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.</li> </ul>
enable_efi	No	Boolean	<ul style="list-style-type: none"> <li>Whether <b>efi</b> is enabled is used as the filter.</li> <li>The value can be <b>true</b> or <b>false</b>.</li> </ul>

## Request Parameters

None

## Example Request

GET https://{Endpoint}/v1/{project\_id}/ports

## Response Parameters

Table 5-100 Response parameter

Name	Type	Description
ports	Array of <b>port</b> objects	Specifies the port objects. For details, see <a href="#">Table 5-101</a> .

**Table 5-101** 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"> <li>Specifies the port name.</li> <li>The value can contain up to 255 characters. This parameter is left blank by default.</li> </ul>
network_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the network that the port belongs to.</li> <li>The network ID must exist.</li> </ul>
admin_state_up	Boolean	<ul style="list-style-type: none"> <li>Specifies the administrative state of the port.</li> <li>The default value is <b>true</b>.</li> </ul>
mac_address	String	<ul style="list-style-type: none"> <li>Specifies the port MAC address.</li> <li>The MAC address is assigned by the system not specified by users.</li> </ul>
fixed_ips	Array of <a href="#">fixed_ip</a> objects	<ul style="list-style-type: none"> <li>Specifies the port IP address. For example, the value is "<b>fixed_ips</b>": [{"<b>subnet_id</b>": "4dc70db6-cb7f-4200-9790-a6a910776bba", "<b>ip_address</b>": "192.169.25.79"}]. For details, see <a href="#">Table 5-102</a>.</li> <li>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.</li> </ul>
device_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the device that the port belongs to.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>



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

Parameter	Type	Description
allowed_address_pairs	Array of <a href="#">allowed_address_pairs</a> objects	<ul style="list-style-type: none"> <li>Specifies the IP address and MAC address pair. An address pair consists of an IP address and a MAC address. For details, see <a href="#">Table 5-103</a>.</li> <li>The IP address cannot be <b>0.0.0.0/0</b>.</li> <li>Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> <li>If the value of <b>allowed_address_pairs</b> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> <li>Set <b>allowed_address_pairs</b> of the cloud server to <b>1.1.1.1/0</b>.</li> </ul>
extra_dhcp_opts	Array of <a href="#">extra_dhcp_option</a> objects	Specifies the extended option (extended attribute) of DHCP. For details, see <a href="#">Table 5-104</a> .
binding:vif_details	<a href="#">binding:vif_details</a> object	For details, see <a href="#">Table 5-105</a> .

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"> <li>The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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></li> <li>The <b>disable_security_groups</b> field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: <code>{"disable_security_groups": true }</code> Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> </ul>
binding:vnic_type	String	<ul style="list-style-type: none"> <li>Specifies the type of the bound vNIC.</li> <li>The value can be <b>normal</b> or <b>direct</b>. <b>normal</b> indicates software switching. <b>direct</b> indicates SR-IOV PCIe passthrough, which is not supported.</li> </ul>
instance_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the instance to which the port belongs, for example, RDS instance ID.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>

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

**Table 5-102 fixed\_ip object**

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

**Table 5-103 allowed\_address\_pairs** objects

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

**Table 5-104 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 <b>opt_name</b> is <b>51</b>, the value format of <b>opt_value</b> is <math>Xh</math>, indicating that the DHCP lease time is <math>X</math> hours.</p> <p>The value of <math>X</math> is <b>-1</b> or from <b>1</b> to <b>30000</b>. If the value is <b>-1</b>, the DHCP lease time is infinite.</p>

**Table 5-105 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](#).

## 5.6.4 Updating a Port

### Function

This API is used to update a port.

### URI

PUT /v1/{project\_id}/ports/{port\_id}

[Table 5-106](#) describes the parameters.

**Table 5-106** 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 <a href="#">Obtaining a Project ID</a> .

### Request Parameters

Name	Mandatory	Type	Description
port	Yes	<a href="#">port</a> object	Specifies the port objects. For details, see <a href="#">Table 5-107</a> .

**Table 5-107** Description of the [port](#) field

Name	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none"> <li>Specifies the port name.</li> <li>The value can contain up to 255 characters. This parameter is left blank by default.</li> </ul>
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 <a href="#">allowed_address_pairs</a> objects	<ul style="list-style-type: none"><li>Specifies the IP address and MAC address pair. An address pair consists of an IP address and a MAC address. For details, see parameter <b>allow_address_pair</b> in <a href="#">Table 5-108</a>.</li><li>Constraints:<ul style="list-style-type: none"><li>The IP address cannot be <b>0.0.0.0/0</b>.</li><li>Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li><li>If the value of <b>allowed_address_pairs</b> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li><li>To assign a virtual IP address to an ECS, the IP address configured in <b>allowed_address_pairs</b> must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication.</li><li>Set <b>allowed_address_pairs</b> of the cloud server to <b>1.1.1.1/0</b>.</li></ul></li></ul>
extra_dhcp_opts	No	Array of <a href="#">extra_dhcp_opt</a> objects	Specifies the extended option (extended attribute) of DHCP. For details, see <a href="#">Table 5-109</a> .



**Table 5-108 allowed\_address\_pairs objects**

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

**Table 5-109 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 <b>opt_name</b> is <b>51</b>, the value format of <b>opt_value</b> is <i>Xh</i>, indicating that the DHCP lease time is <i>X</i> hours.</p> <p>The value of <i>X</i> is <b>-1</b> or from <b>1</b> to <b>30000</b>. If the value is <b>-1</b>, 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 5-110** Response parameter

Name	Type	Description
port	<a href="#">port</a> object	Specifies the port objects. For details, see <a href="#">Table 5-111</a> .

**Table 5-111** 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"> <li>Specifies the port name.</li> <li>The value can contain up to 255 characters. This parameter is left blank by default.</li> </ul>
network_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the network that the port belongs to.</li> <li>The network ID must exist.</li> </ul>
admin_state_up	Boolean	<ul style="list-style-type: none"> <li>Specifies the administrative state of the port.</li> <li>The default value is <b>true</b>.</li> </ul>
mac_address	String	<ul style="list-style-type: none"> <li>Specifies the port MAC address.</li> <li>The MAC address is assigned by the system not specified by users.</li> </ul>
fixed_ips	Array of <a href="#">fixed_ip</a> objects	<ul style="list-style-type: none"> <li>Specifies the port IP address. For example, the value is <b>"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]</b>. For details, see <a href="#">Table 5-112</a>.</li> <li>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.</li> </ul>

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

Parameter	Type	Description
allowed_address_pairs	Array of <a href="#">allowed_address_pairs</a> objects	<ul style="list-style-type: none"> <li>Specifies the IP address and MAC address pair. An address pair consists of an IP address and a MAC address. For details, see <a href="#">Table 5-113</a>.</li> <li>The IP address cannot be <b>0.0.0.0/0</b>.</li> <li>Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> <li>If the value of <b>allowed_address_pairs</b> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> <li>Set <b>allowed_address_pairs</b> of the cloud server to <b>1.1.1.1/0</b>.</li> </ul>
extra_dhcp_opts	Array of <a href="#">extra_dhcp_option</a> objects	Specifies the extended option (extended attribute) of DHCP. For details, see <a href="#">Table 5-114</a> .
binding:vif_details	<a href="#">binding:vif_details</a> object	For details, see <a href="#">Table 5-115</a> .

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"> <li>The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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></li> <li>The <b>disable_security_groups</b> field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: <code>{"disable_security_groups": true }</code> Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> </ul>
binding:vnic_type	String	<ul style="list-style-type: none"> <li>Specifies the type of the bound vNIC.</li> <li>The value can be <b>normal</b> or <b>direct</b>.</li> <li><b>normal</b> indicates software switching. <b>direct</b> indicates SR-IOV PCIe passthrough, which is not supported.</li> </ul>
instance_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the instance to which the port belongs, for example, RDS instance ID.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>

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

**Table 5-112 fixed\_ip object**

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

**Table 5-113 allowed\_address\_pairs** objects

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

**Table 5-114 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 <b>opt_name</b> is <b>51</b> , the value format of <b>opt_value</b> is $Xh$ , indicating that the DHCP lease time is $X$ hours. The value of $X$ is <b>-1</b> or from <b>1</b> to <b>30000</b> . If the value is <b>-1</b> , the DHCP lease time is infinite.

**Table 5-115 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](#).

## 5.6.5 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 5-116](#) describes the parameters.



**Table 5-116** 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 <a href="#">Obtaining a Project ID</a> .

## 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](#).

# 5.7 VPC Peering Connection

## 5.7.1 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 5-117** describes the parameters.

**Table 5-117** 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"> <li>Specifies that the peering connection name is used as the filter.</li> <li>The value can contain no more than 64 characters.</li> </ul>
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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (<math>2^{31}-1</math>). The default value is 2000.</p> <p><b>limit</b> can be used together with <b>marker</b>. For details, see the parameter description of <b>marker</b>.</p> <p>The default value is <b>2000</b>.</p>

## Request Parameters

None

## Example Request

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

## Response Parameters

**Table 5-118** Response parameter

Parameter	Type	Description
peerings	Array of <b>peering</b> objects	Specifies the VPC peering connection object list. For details, see <a href="#">Table 5-119</a> .
peerings_links	Array of <b>peerings_link</b> objects	Specifies the VPC peering connection object list. For details, see <a href="#">Table 5-121</a> . Only when <b>limit</b> is used for filtering and the number of resources exceeds the value of <b>limit</b> or 2000 (default value of <b>limit</b> ), value <b>next</b> will be returned for <b>rel</b> and a link for <b>href</b> .

**Table 5-119** 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"> <li>● <b>PENDING_ACCEPTANCE</b></li> <li>● <b>REJECTED</b></li> <li>● <b>EXPIRED</b></li> <li>● <b>DELETED</b></li> <li>● <b>ACTIVE</b></li> </ul>
request_vpc_info	<b>vpc_info</b> object	Specifies information about the local VPC. For details, see <a href="#">Table 5-120</a> .

Attribute	Type	Description
accept_vpc_info	<b>vpc_info</b> object	Specifies information about the peer VPC. For details, see <a href="#">Table 5-120</a> .
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 5-120 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 5-121 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](#).

## 5.7.2 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 5-122](#) describes the parameters.

**Table 5-122** Parameter description

Name	Mandatory	Type	Description
peering_id	Yes	String	Specifies the VPC peering connection ID, which uniquely identifies the VPC peering connection. The <b>peering_id</b> 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 5-123** Response parameter

Parameter	Type	Description
peering	<a href="#">peering</a> object	Specifies the VPC peering connection object list. For details, see <a href="#">Table 5-124</a> .

**Table 5-124** 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"> <li>● <b>PENDING_ACCEPTANCE</b></li> <li>● <b>REJECTED</b></li> <li>● <b>EXPIRED</b></li> <li>● <b>DELETED</b></li> <li>● <b>ACTIVE</b></li> </ul>
request_vpc_info	<a href="#">vpc_info</a> object	Specifies information about the local VPC. For details, see <a href="#">Table 5-125</a> .
accept_vpc_info	<a href="#">vpc_info</a> object	Specifies information about the peer VPC. For details, see <a href="#">Table 5-125</a> .
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 5-125 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](#).

## 5.7.3 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 5-126** Request parameter

Parameter	Mandatory	Type	Description
peering	Yes	<a href="#">peering</a> object	Specifies the VPC peering connection. For details, see <a href="#">Table 5-127</a> .

**Table 5-127** 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	<a href="#">vpc_info</a> object	Specifies information about the local VPC. For details, see <a href="#">Table 5-128</a> .
accept_vpc_info	Yes	<a href="#">vpc_info</a> object	Specifies information about the peer VPC. For details, see <a href="#">Table 5-128</a> .

**Table 5-128** 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 5-129** Response parameter

Parameter	Type	Description
peering	<a href="#">peering</a> object	Specifies the VPC peering connection. For details, see <a href="#">Table 5-130</a> .

**Table 5-130** 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"> <li>• <b>PENDING_ACCEPTANCE</b></li> <li>• <b>REJECTED</b></li> <li>• <b>EXPIRED</b></li> <li>• <b>DELETED</b></li> <li>• <b>ACTIVE</b></li> </ul>
request_vpc_info	<b>vpc_info</b> object	Specifies information about the local VPC. For details, see <a href="#">Table 5-131</a> .
accept_vpc_info	<b>vpc_info</b> object	Specifies information about the peer VPC. For details, see <a href="#">Table 5-131</a> .
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 5-131 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](#).

## 5.7.4 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 5-132](#) describes the parameters.

**Table 5-132** 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 5-133** 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"> <li>• <b>PENDING_ACCEPTANCE</b></li> <li>• <b>REJECTED</b></li> <li>• <b>EXPIRED</b></li> <li>• <b>DELETED</b></li> <li>• <b>ACTIVE</b></li> </ul>
request_vpc_info	<b>vpc_info</b> object	Specifies information about the local VPC. For details, see <a href="#">Table 5-134</a> .
accept_vpc_info	<b>vpc_info</b> object	Specifies information about the peer VPC. For details, see <a href="#">Table 5-134</a> .
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 5-134** 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](#).

## 5.7.5 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 5-135](#) describes the parameters.

**Table 5-135** 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 5-136** 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"> <li><b>PENDING_ACCEPTANCE</b></li> <li><b>REJECTED</b></li> <li><b>EXPIRED</b></li> <li><b>DELETED</b></li> <li><b>ACTIVE</b></li> </ul>
request_vpc_info	<b>vpc_info</b> object	Specifies information about the local VPC. For details, see <a href="#">Table 5-137</a> .
accept_vpc_info	<b>vpc_info</b> object	Specifies information about the peer VPC. For details, see <a href="#">Table 5-137</a> .

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 5-137 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](#).



## 5.7.6 Updating a VPC Peering Connection

### Function

Updates a VPC peering connection.

### URI

PUT /v2.0/vpc/peerings/{peering\_id}

[Table 5-138](#) describes the parameters.

**Table 5-138** 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 5-139** Request parameter

Parameter	Mandatory	Type	Description
peering	Yes	<a href="#">peering</a> object	Updates a VPC peering connection. For details, see <a href="#">Table 5-140</a> . 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 5-140** 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 5-141** Response parameter

Parameter	Type	Description
peering	<a href="#">peering</a> object	Specifies the VPC peering connection. For details, see <a href="#">Table 5-142</a> .

**Table 5-142** 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"> <li><b>PENDING_ACCEPTANCE</b></li> <li><b>REJECTED</b></li> <li><b>EXPIRED</b></li> <li><b>DELETED</b></li> <li><b>ACTIVE</b></li> </ul>
request_vpc_info	<a href="#">vpc_info</a> object	Specifies information about the local VPC. For details, see <a href="#">Table 5-143</a> .
accept_vpc_info	<a href="#">vpc_info</a> object	Specifies information about the peer VPC. For details, see <a href="#">Table 5-143</a> .

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 5-143** 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](#).

## 5.7.7 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 5-144](#) describes the parameters.

**Table 5-144** 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](#).

## 5.8 VPC Route

## 5.8.1 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 5-145](#) describes the parameters.

**Table 5-145** 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 <b>peering</b> .

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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (<math>2^{31}-1</math>). The default value is 2000.</p> <p><b>limit</b> can be used together with <b>marker</b>. For details, see the parameter description of <b>marker</b>.</p> <p>The default value is <b>2000</b>.</p>

## Request Parameters

None

## Example Request

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

## Response Parameters

**Table 5-146** Response parameter

Parameter	Type	Description
routes	Array of <a href="#">route</a> objects	Specifies the route object list. For details, see <a href="#">Table 5-147</a> .
routes_links	Array of <a href="#">routes_link</a> objects	Specifies the route object list. For details, see <a href="#">Table 5-148</a> . The value of <b>rel</b> will be <b>next</b> and that of <b>href</b> will be a link only when <b>limit</b> is used for filtering and the number of resources exceeds the value of <b>limit</b> or 2000 (default value of <b>limit</b> ).

**Table 5-147** 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 <b>peering</b> , enter the VPC peering connection ID.
type	String	Specifies the route type. Currently, the value can only be <b>peering</b> .
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 5-148 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](#).

## 5.8.2 Querying a VPC Route

### Function

This API is used to query details about a route.

### URI

GET /v2.0/vpc/routes/{route\_id}

[Table 5-149](#) describes the parameters.

**Table 5-149** 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 5-150** Response parameter

Parameter	Type	Description
route	<a href="#">route object</a>	Specifies the route. For details, see <a href="#">Table 5-151</a> .

**Table 5-151** 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 <b>peering</b> , enter the VPC peering connection ID.
type	String	Specifies the route type. Currently, the value can only be <b>peering</b> .
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](#).

## 5.8.3 Creating a VPC Route

### Function

This API is used to create a route.

### URI

POST /v2.0/vpc/routes

### Request Parameters

Table 5-152 Request parameter

Parameter	Type	Mandatory	Description
route	<a href="#">route object</a>	Yes	Specifies the route. For details, see <a href="#">Table 5-153</a> .

Table 5-153 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 <b>peering</b> , enter the VPC peering connection ID.
type	String	Yes	Specifies the route type. Currently, only the <b>peering</b> 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 5-154 Response parameter

Parameter	Type	Description
route	<a href="#">route object</a>	Specifies the route. For details, see <a href="#">Table 5-155</a> .

Table 5-155 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 <b>peering</b> , enter the VPC peering connection ID.
type	String	Specifies the route type. Currently, the value can only be <b>peering</b> .
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](#).

## 5.8.4 Deleting a VPC Route

### Function

This API is used to delete a route.

### URI

DELETE /v2.0/vpc/routes/{route\_id}

[Table 5-156](#) describes the parameters.

**Table 5-156** 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](#).

# 5.9 VPC Tag Management

## 5.9.1 Adding a Tag to a VPC

### Function

This API is used to add a tag to a VPC.

### URI

POST /v2.0/{project\_id}/vpcs/{vpc\_id}/tags

[Table 5-157](#) describes the parameters.

**Table 5-157** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
vpc_id	Yes	Specifies the VPC ID that uniquely identifies the VPC.

### Request Parameters

**Table 5-158** Request parameter

Parameter	Type	Mandatory	Description
tag	<a href="#">tag</a> object	Yes	Specifies the <a href="#">tag</a> objects. For details, see <a href="#">Table 5-159</a> .

**Table 5-159 tag objects**

Attribute	Type	Mandatory	Description
key	String	Yes	<ul style="list-style-type: none"><li>• Specifies the tag key.</li><li>• Cannot be left blank.</li><li>• Contain up to 128 characters (36 characters on the console).</li><li>• Can contain letters, digits, underscores (_), and hyphens (-).</li><li>• The tag key of a VPC must be unique.</li></ul>
value	String	Yes	<ul style="list-style-type: none"><li>• Specifies the tag value.</li><li>• Contain up to 255 characters (43 characters on the console).</li><li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>

### Example Request

- Create a tag for a VPC. The key is **key1**, and the value is **value1**.

POST https://{Endpoint}/v2.0/{project\_id}/vpcs/{vpc\_id}/tags

```
{
  "tag": {
    "key": "key1",
    "value": "value1"
  }
}
```

### Response Parameters

None

### Example Response

None

### Status Code

See [Status Codes](#).

### Error Code

See [Error Codes](#).

## 5.9.2 Querying VPC Tags

### Function

This API is used to query tags of a specified VPC.

## URI

GET /v2.0/{project\_id}/vpcs/{vpc\_id}/tags

[Table 5-160](#) describes the parameters.

**Table 5-160** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
vpc_id	Yes	Specifies the VPC ID that uniquely identifies the VPC.

## Request Parameters

None

## Example Request

GET https://{Endpoint}/v2.0/{project\_id}/vpcs/{vpc\_id}/tags

## Response Parameters

**Table 5-161** Response parameter

Parameter	Type	Description
tags	Array of <a href="#">tag</a> objects	Specifies the <a href="#">tag</a> object list. For details, see <a href="#">Table 5-162</a> .

**Table 5-162** tag objects

Attribute	Type	Description
key	String	<ul style="list-style-type: none"> <li>Specifies the tag key.</li> <li>Cannot be left blank.</li> <li>Contain up to 128 characters (36 characters on the console).</li> <li>Can contain letters, digits, underscores (_), and hyphens (-).</li> <li>The tag key of a VPC must be unique.</li> </ul>

Attribute	Type	Description
value	String	<ul style="list-style-type: none"> <li>Specifies the tag value.</li> <li>Contain up to 255 characters (43 characters on the console).</li> <li>Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li> </ul>

## Example Response

```
{
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value3"
    }
  ]
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.9.3 Deleting a Tag from a VPC

### Function

This API is used to delete a tag from a VPC.

### URI

DELETE /v2.0/{project\_id}/vpcs/{vpc\_id}/tags/{key}

[Table 5-163](#) describes the parameters.

**Table 5-163** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .



Name	Mandatory	Description
vpc_id	Yes	Specifies the VPC ID, which uniquely identifies the VPC.
key	Yes	Specifies the tag key.

## Request Parameters

None

## Example Request

```
DELETE https://{Endpoint}/v2.0/{project_id}/vpcs/{vpc_id}/tags/{key}
```

## Response Parameters

None

## Example Response

None

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.9.4 Batch Adding or Deleting VPC Tags

### Function

This API is used to add multiple tags to or delete multiple tags from a VPC at a time.

This API is idempotent.

If there are duplicate keys in the request body when you add tags, an error is reported.

During tag creation, duplicate keys are not allowed. If a key already exists in the database, its value will be overwritten by the new duplicate key.

During tag deletion, if some tags do not exist, the operation is considered to be successful by default. The character set of the tags will not be checked. When you delete tags, the tag structure cannot be missing, and the key cannot be left blank or be an empty string.

## URI

POST /v2.0/{project\_id}/vpcs/{vpc\_id}/tags/action

[Table 5-164](#) describes the parameters.

**Table 5-164** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
vpc_id	Yes	Specifies the VPC ID, which uniquely identifies the VPC.

## Request Parameters

**Table 5-165** Request parameter

Parameter	Type	Mandatory	Description
tags	Array of <a href="#">tag</a> objects	Yes	Specifies the <b>tag</b> objects. For details, see <a href="#">Table 5-166</a> .
action	String	Yes	Specifies the operation. Possible values are as follows: <ul style="list-style-type: none"> <li>• <b>create</b></li> <li>• <b>delete</b></li> </ul>

**Table 5-166** tag objects

Attribute	Type	Mandatory	Description
key	String	Yes	<ul style="list-style-type: none"> <li>• Specifies the tag key.</li> <li>• Cannot be left blank.</li> <li>• Contain up to 128 characters (36 characters on the console).</li> <li>• Can contain letters, digits, underscores (_), and hyphens (-).</li> <li>• The tag key of a VPC must be unique.</li> </ul>

Attribute	Type	Mandatory	Description
value	String	Yes	<ul style="list-style-type: none"><li>Specifies the tag value.</li><li>Contain up to 255 characters (43 characters on the console).</li><li>Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>

## Example Request

- Batch create two tags for a VPC.

POST https://{Endpoint}/v2.0/{project\_id}/vpcs/{vpc\_id}/tags/action

```
{
  "action": "create",
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value3"
    }
  ]
}
```

- Batch delete two tags for a VPC.

POST https://{Endpoint}/v2.0/{project\_id}/vpcs/{vpc\_id}/tags/action

```
{
  "action": "delete",
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value3"
    }
  ]
}
```

## Response Parameters

None

## Example Response

None

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.9.5 Querying VPCs by Tag

### Function

This API is used to query VPCs by tag.

### URI

POST /v2.0/{project\_id}/vpcs/resource\_instances/action

[Table 5-167](#) describes the parameters.

**Table 5-167** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

### Request Parameters

**Table 5-168** Request parameter

Parameter	Type	Mandatory	Description
tags	Array of <a href="#">tag</a> objects	No	Specifies the included tags. A maximum of 10 tag keys are allowed for each query operation. Each tag key can have up to 10 tag values. The structure body must be included. The tag key cannot be left blank or set to an empty string. Each tag key must be unique, and each tag value in a tag must be unique.
limit	Integer	No	Sets the page size. This parameter is not available when <b>action</b> is set to <b>count</b> . The default value is <b>1000</b> when <b>action</b> is set to <b>filter</b> . The maximum value is <b>1000</b> , and the minimum value is <b>1</b> . The value cannot be a negative number.

Parameter	Type	Mandatory	Description
offset	Integer	No	Specifies the index position. The query starts from the next piece of data indexed by this parameter. This parameter is not required when you query data on the first page. The value in the response returned for querying data on the previous page will be included in this parameter for querying data on subsequent pages. This parameter is not available when <b>action</b> is set to <b>count</b> . If <b>action</b> is set to <b>filter</b> , the value must be a number, and the default value is <b>0</b> . The value cannot be a negative number.
action	String	Yes	Specifies the operation to perform. The value can only be <b>filter</b> (filtering) or <b>count</b> (querying the total number). The value <b>filter</b> indicates pagination query. The value <b>count</b> indicates that the total number of query results meeting the search criteria will be returned.
matches	Array of <b>match</b> objects	No	Specifies the search criteria. The tag key is the field to match. Currently, only <b>resource_name</b> is supported. The tag value indicates the matched value. This field is a fixed dictionary value.

**Table 5-169** Description of the **tag** field

Name	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. The value can contain a maximum of 128 Unicode characters. The tag key cannot be left blank. (This parameter is not verified during the search process.)

Name	Mandatory	Type	Description
values	Yes	Array of strings	Specifies the tag values. Each value can contain a maximum of 255 Unicode characters. An empty list for <b>values</b> indicates any value.  The values are in the OR relationship.  Resources that match any value can be found. For example, if resource A has a tag value of <b>val1</b> and resource B has a tag value of <b>val2</b> , resources A and B can be found by using <b>values={val1,val2}</b> .

**Table 5-170** Description of the **match** field

Name	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. Currently, the tag key can only be the resource name.
value	Yes	String	Specifies the tag value. Each value can contain a maximum of 255 Unicode characters.

## Example Request

- Filter VPCs by setting **action** to **filter**. The query starts from the first record. A maximum of 100 records can be returned for each query. You can use **matches** and **tags** to filter VPCs.

POST https://{Endpoint}/v2.0/{project\_id}/vpcs/resource\_instances/action

```
{
  "offset": "0",
  "limit": "100",
  "action": "filter",
  "matches": [
    {
      "key": "resource_name",
      "value": "resource1"
    }
  ],
  "tags": [
    {
      "key": "key1",
      "values": [
        "*value1",
```

```

        "value2"
      ]
    }
  ]
}

```

- Count VPCs by setting **action** to **count**. Use **matches** and **tags** to filter and count VPCs.

POST [https://{Endpoint}/v2.0/{project\\_id}/vpcs/resource\\_instances/action](https://{Endpoint}/v2.0/{project_id}/vpcs/resource_instances/action)

```

{
  "action": "count",
  "tags": [
    {
      "key": "key1",
      "values": [
        "value1",
        "value2"
      ]
    },
    {
      "key": "key2",
      "values": [
        "value1",
        "value2"
      ]
    }
  ],
  "matches": [
    {
      "key": "resource_name",
      "value": "resource1"
    }
  ]
}

```

## Response Parameters

**Table 5-171** Response parameter

Name	Type	Description
resources	Array of <b>resource</b> objects	Specifies the <b>resource</b> object list. For details, see <a href="#">Table 5-172</a> .
total_count	Integer	Specifies the total number of query records.

**Table 5-172** resource objects

Name	Type	Description
resource_id	String	Specifies the resource ID.
resource_detail	Object	Specifies the resource details. Resource details are used for extension. This parameter is left blank by default.

Name	Type	Description
tags	Array of <b>tag</b> objects	Specifies the tag list. This parameter is an empty array by default if there is no tag. For details, see <a href="#">Table 5-173</a> .
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name.

**Table 5-173** Description of the **tag** field

Name	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. The value can contain a maximum of 128 Unicode characters. The tag key cannot be left blank. (This parameter is not verified during the search process.)
values	Yes	Array of strings	Specifies the tag value list. Each value can contain a maximum of 255 Unicode characters. An empty list for <b>values</b> indicates any value. The values are in the OR relationship. Resources that match any value can be found. For example, if resource A has a tag value of <b>val1</b> and resource B has a tag value of <b>val2</b> , resources A and B can be found by using <b>values={val1,val2}</b> .

## Example Response

- When **action** is set to **filter**:

```
{
  "resources": [
    {
      "resource_detail": null,
      "resource_id": "cdfs_cefs_wesas_12_dsad",

```



```
"resource_name": "resouece1",  
"tags": [  
  {  
    "key": "key1",  
    "value": "value1"  
  },  
  {  
    "key": "key2",  
    "value": "value1"  
  }  
]  
],  
"total_count": 1000  
}
```

- When **action** is set to **count**:

```
{  
  "total_count": 1000  
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.9.6 Querying VPC Tags in a Specified Project

### Function

This API is used to query all VPC tags of a tenant in a specified region.

### URI

GET /v2.0/{project\_id}/vpcs/tags

[Table 5-174](#) describes the parameters.

**Table 5-174** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

### Request Parameters

None

## Example Request

```
GET https://{Endpoint}/v2.0/{project_id}/vpcs/tags
```

## Response Parameters

**Table 5-175** Response parameter

Parameter	Type	Description
tags	Array of <b>tag</b> objects	Specifies the tag list.

**Table 5-176** Description of the **tag** field

Name	Type	Description
key	String	Specifies the tag key. <ul style="list-style-type: none"> <li>Cannot be left blank.</li> <li>Contain up to 128 characters (36 characters on the console).</li> <li>Can contain letters, digits, underscores (_), and hyphens (-).</li> </ul>
values	Array of strings	Specifies the tag value list. <ul style="list-style-type: none"> <li>Contain up to 255 characters (43 characters on the console).</li> <li>Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li> </ul>

## Example Response

```
{
  "tags": [
    {
      "key": "key1",
      "values": [
        "value1",
        "value2"
      ]
    },
    {
      "key": "key2",
      "values": [
        "value1",
        "value2"
      ]
    }
  ]
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

# 5.10 Subnet Tag Management

## 5.10.1 Adding a Tag to a Subnet

### Function

This API is used to add a tag to a subnet.

### URI

POST /v2.0/{project\_id}/subnets/{subnet\_id}/tags

[Table 5-177](#) describes the parameters.

**Table 5-177** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 <b>Network ID</b> value.

### Request Parameters

**Table 5-178** Request parameter

Parameter	Type	Mandatory	Description
tag	<b>tag</b> object	Yes	Specifies the <b>tag</b> objects. For details, see <a href="#">Table 5-179</a> .

**Table 5-179 tag objects**

Attribute	Type	Mandatory	Description
key	String	Yes	<ul style="list-style-type: none"> <li>Specifies the tag key.</li> <li>Cannot be left blank.</li> <li>Contain up to 128 characters (36 characters on the console).</li> <li>Can contain letters, digits, underscores (_), and hyphens (-).</li> <li>The tag key of a VPC must be unique.</li> </ul>
value	String	Yes	<ul style="list-style-type: none"> <li>Specifies the tag value.</li> <li>Contain up to 255 characters (43 characters on the console).</li> <li>Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li> </ul>

### Example Request

- Create a tag for a subnet. The key is **key1**, and the value is **value1**.

POST https://{Endpoint}/v2.0/{project\_id}/subnets/{subnet\_id}/tags

```
{
  "tag": {
    "key": "key1",
    "value": "value1"
  }
}
```

### Response Parameters

None

### Example Response

None

### Status Code

See [Status Codes](#).

### Error Code

See [Error Codes](#).

## 5.10.2 Querying Subnet Tags

### Function

This API is used to query tags of a specified subnet.

## URI

GET /v2.0/{project\_id}/subnets/{subnet\_id}/tags

[Table 5-180](#) describes the parameters.

**Table 5-180** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 <b>Network ID</b> value.

## Request Parameters

None

## Example Request

GET https://{Endpoint}/v2.0/{project\_id}/subnets/{subnet\_id}/tags

## Response Parameters

**Table 5-181** Response parameter

Parameter	Type	Description
tags	Array of <b>tag</b> objects	Specifies the <b>tag</b> object list. For details, see <a href="#">Table 5-182</a> .

**Table 5-182 tag objects**

Attribute	Type	Description
key	String	<ul style="list-style-type: none"> <li>• Specifies the tag key.</li> <li>• Cannot be left blank.</li> <li>• Contain up to 128 characters (36 characters on the console).</li> <li>• Can contain letters, digits, underscores (_), and hyphens (-).</li> <li>• The tag key of a VPC must be unique.</li> </ul>
value	String	<ul style="list-style-type: none"> <li>• Specifies the tag value.</li> <li>• Contain up to 255 characters (43 characters on the console).</li> <li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li> </ul>

### Example Response

```
{
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value3"
    }
  ]
}
```

### Status Code

See [Status Codes](#).

### Error Code

See [Error Codes](#).

## 5.10.3 Deleting a Tag from a Subnet

### Function

This API is used to delete a tag from subnet.

### URI

DELETE /v2.0/{project\_id}/subnets/{subnet\_id}/tags/{key}

[Table 5-183](#) describes the parameters.

**Table 5-183** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 <b>Network ID</b> value.
key	Yes	Specifies the tag key.

## Request Parameters

None

## Example Request

```
DELETE https://{Endpoint}/v2.0/{project_id}/subnets/{subnet_id}/tags/{key}
```

## Response Parameters

None

## Example Response

None

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.10.4 Batch Adding or Deleting Subnet Tags

### Function

This API is used to add multiple tags to or delete multiple tags from a subnet at a time.

This API is idempotent.

If there are duplicate keys in the request body when you add tags, an error is reported.

During tag creation, duplicate keys are not allowed. If a key already exists in the database, its value will be overwritten by the new duplicate key.

During tag deletion, if some tags do not exist, the deletion is considered to be successful by default. The character set of the tags will not be checked. When you delete tags, the tag structure cannot be missing, and the key cannot be left blank or be an empty string.

## URI

POST /v2.0/{project\_id}/subnets/{subnet\_id}/tags/action

[Table 5-184](#) describes the parameters.

**Table 5-184** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 <b>Network ID</b> value.

## Request Parameters

**Table 5-185** Request parameter

Parameter	Type	Mandatory	Description
tags	Array of <a href="#">tag</a> objects	Yes	Specifies the <b>tag</b> object list. For details, see <a href="#">Table 5-186</a> .



Parameter	Type	Mandatory	Description
action	String	Yes	Specifies the operation. Possible values are as follows: <ul style="list-style-type: none"> <li>create</li> <li>delete</li> </ul>

Table 5-186 tag objects

Attribute	Type	Mandatory	Description
key	String	Yes	<ul style="list-style-type: none"> <li>Specifies the tag key.</li> <li>Cannot be left blank.</li> <li>Contain up to 128 characters (36 characters on the console).</li> <li>Can contain letters, digits, underscores (_), and hyphens (-).</li> <li>The tag key of a VPC must be unique.</li> </ul>
value	String	Yes	<ul style="list-style-type: none"> <li>Specifies the tag value.</li> <li>Contain up to 255 characters (43 characters on the console).</li> <li>Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li> </ul>

## Example Request

- Batch create two tags for a subnet.  
POST https://{Endpoint}/v2.0/{project\_id}/subnets/{subnet\_id}/tags/action

```
{
  "action": "create",
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value3"
    }
  ]
}
```

- Batch delete two tags for a subnet.  
POST https://{Endpoint}/v2.0/{project\_id}/subnets/{subnet\_id}/tags/action

```
{
```

```
"action": "delete",
"tags": [
  {
    "key": "key1",
    "value": "value1"
  },
  {
    "key": "key2",
    "value": "value3"
  }
]
```

## Response Parameters

None

## Example Response

None

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.10.5 Querying Subnets by Tag

### Function

This API is used to query subnets by tag.

### URI

POST /v2.0/{project\_id}/subnets/resource\_instances/action

[Table 5-187](#) describes the parameters.

**Table 5-187** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

## Request Parameters

**Table 5-188** Request parameter

Parameter	Type	Mandatory	Description
tags	Array of <b>tag</b> objects	No	Specifies the included tags. A maximum of 10 tag keys are allowed for each query operation. Each tag key can have up to 10 tag values. The structure body must be included. The tag key cannot be left blank or set to an empty string. Each tag key must be unique, and each tag value in a tag must be unique.
limit	Integer	No	Sets the page size. This parameter is not available when <b>action</b> is set to <b>count</b> . The default value is <b>1000</b> when <b>action</b> is set to <b>filter</b> . The maximum value is <b>1000</b> , and the minimum value is <b>1</b> . The value cannot be a negative number.
offset	Integer	No	Specifies the index position. The query starts from the next piece of data indexed by this parameter. This parameter is not required when you query data on the first page. The value in the response returned for querying data on the previous page will be included in this parameter for querying data on subsequent pages. This parameter is not available when <b>action</b> is set to <b>count</b> . If <b>action</b> is set to <b>filter</b> , the value must be a number, and the default value is <b>0</b> . The value cannot be a negative number.
action	String	Yes	Specifies the operation to perform. The value can only be <b>filter</b> (filtering) or <b>count</b> (querying the total number).  The value <b>filter</b> indicates pagination query. The value <b>count</b> indicates that the total number of query results meeting the search criteria will be returned.
matches	Array of <b>match</b> objects	No	Specifies the search criteria. The tag key is the field to match. Currently, only <b>resource_name</b> is supported. The tag value indicates the matched value. This field is a fixed dictionary value.

**Table 5-189** Description of the **tag** field

Name	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. The value can contain a maximum of 128 Unicode characters. The tag key cannot be left blank. (This parameter is not verified during the search process.)
values	Yes	Array of strings	Specifies the tag value list. Each value can contain a maximum of 255 Unicode characters. An empty list for <b>values</b> indicates any value. The values are in the OR relationship.

**Table 5-190** Description of the **match** field

Name	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. Currently, the tag key can only be the resource name.
value	Yes	String	Specifies the tag value. Each value can contain a maximum of 255 Unicode characters.

## Example Request

- Filter subnets by setting **action** to **filter**. The query starts from the first record. A maximum of 100 records can be returned for each query. You can use **matches** and **tags** to filter subnets.

POST https://{Endpoint}/v2.0/{project\_id}/subnets/resource\_instances/action

```
{
  "offset": "0",
  "limit": "100",
  "action": "filter",
  "matches": [
    {
      "key": "resource_name",
      "value": "resource1"
    }
  ],
  "tags": [
    {
      "key": "key1",
      "values": [
```

```

        "value1",
        "value2"
    ]
}
]
}

```

- Count subnets by setting **action** to **count**. Use **matches** and **tags** to filter and count VPCs.

POST https://{Endpoint}/v2.0/{project\_id}/subnets/resource\_instances/action

```

{
  "action": "count",
  "tags": [
    {
      "key": "key1",
      "values": [
        "value1",
        "value2"
      ]
    },
    {
      "key": "key2",
      "values": [
        "value1",
        "value2"
      ]
    }
  ],
  "matches": [
    {
      "key": "resource_name",
      "value": "resource1"
    }
  ]
}

```

## Response Parameters

**Table 5-191** Response parameter

Name	Type	Description
resources	Array of <b>resource</b> objects	Specifies the <b>resource</b> object list. For details, see <a href="#">Table 5-192</a> .
total_count	Integer	Specifies the total number of query records.

**Table 5-192** resource objects

Name	Type	Description
resource_id	String	Specifies the resource ID.

Name	Type	Description
resource_detail	Object	Specifies the resource details. Resource details are used for extension. This parameter is left blank by default.
tags	Array of <b>tag</b> objects	Specifies the tag list. This parameter is an empty array by default if there is no tag. For details, see <a href="#">Table 5-193</a> .
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name.

**Table 5-193** Description of the **tag** field

Name	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. The value can contain a maximum of 128 Unicode characters. The tag key cannot be left blank. (This parameter is not verified during the search process.)
value	Yes	String	Specifies the tag value list. Each value can contain a maximum of 255 Unicode characters. An empty list for <b>values</b> indicates any value. The values are in the OR relationship.

## Example Response

- When **action** is set to **filter**:

```
{
  "resources": [
    {
      "resource_detail": null,
      "resource_id": "cdf5_cefs_wesas_12_dsad",
      "resource_name": "resouece1",
      "tags": [
        {
          "key": "key1",
```

```
        "value": "value1"
      },
      {
        "key": "key2",
        "value": "value1"
      }
    ]
  },
  ],
  "total_count": 1000
}
```

- When **action** is set to **count**:

```
{
  "total_count": 1000
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 5.10.6 Querying Subnet Tags in a Specified Project

### Function

This API is used to query all subnet tags of a tenant in a specified region.

### URI

GET /v2.0/{project\_id}/subnets/tags

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

**Table 5-194** Parameter description

Name	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

### Request Parameters

None

### Example Request

```
GET https://{Endpoint}/v2.0/{project_id}/subnets/tags
```

## Response Parameters

**Table 5-195** Response parameter

Parameter	Type	Description
tags	Array of <b>tag</b> objects	Specifies the <b>tag</b> object list. For details, see <a href="#">Table 5-196</a> .

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

Name	Type	Description
key	String	Specifies the tag key. <ul style="list-style-type: none"><li>• Cannot be left blank.</li><li>• Contain up to 128 characters (36 characters on the console).</li><li>• Can contain letters, digits, underscores (_), and hyphens (-).</li></ul>
values	Array of strings	Specifies the tag value list. <ul style="list-style-type: none"><li>• Contain up to 255 characters (43 characters on the console).</li><li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>

## Example Response

```
{
  "tags": [
    {
      "key": "key1",
      "values": [
        "value1",
        "value2"
      ]
    },
    {
      "key": "key2",
      "values": [
        "value1",
        "value2"
      ]
    }
  ]
}
```

## Status Code

See [Status Codes](#).



## Error Code

See [Error Codes](#).

# 6 Native OpenStack Neutron APIs (V2.0)

---

## 6.1 API Version Information

### 6.1.1 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 6-1** Response parameter

Parameter	Type	Description
versions	Array of <a href="#">version</a> objects	Specifies the API version list. For details, see <a href="#">Table 6-2</a> .

**Table 6-2 version objects**

Parameter	Type	Description
status	String	Specifies the API version status. Possible values are as follows: <ul style="list-style-type: none"><li>• <b>CURRENT</b></li><li>• <b>STABLE</b></li><li>• <b>DEPRECATED</b></li></ul>
id	String	Specifies the API version.
links	Array of <a href="#">link</a> objects	Specifies the link list. For details, see <a href="#">Table 6-3</a> .

**Table 6-3 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](#).

## 6.1.2 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 6-4** 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 <b>True</b> or <b>False</b> .

### 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 6-5** Response parameter

Parameter	Type	Description
{resources}_links	Array of <b>{resources}_link</b> objects	Specifies the pagination information. For details, see <a href="#">Table 6-6</a> . <b>{resources}</b> indicates the resource name, for example, <b>ports</b> , <b>networks</b> , <b>subnets</b> , <b>routers</b> , <b>firewall_rules</b> , <b>firewall_policies</b> , <b>firewall_groups</b> , <b>security_groups</b> , and <b>security_group_rules</b> .  Only when <b>limit</b> is used for filtering and the number of resources exceeds the value of <b>limit</b> or 2000 (default value of <b>limit</b> ), value <b>next</b> will be returned for <b>rel</b> and a link for <b>href</b> .

**Table 6-6** {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. <b>next</b> : The next page is queried. <b>previous</b> : 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](#).

## 6.2 Port

## 6.2.1 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 6-7** describes the parameters.

**Table 6-7** 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"> <li>Specifies the administrative state of the port that is used as the filter.</li> <li>The value can be <b>true</b> or <b>false</b>.</li> </ul>
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"> <li>Specifies the status of the port that is used as the filter.</li> <li>The value can be <b>ACTIVE</b>, <b>BUILD</b>, or <b>DOWN</b>.</li> </ul>

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 <b>fixed_ips=ip_address={ip_address}</b> or <b>fixed_ips=subnet_id={subnet_id}</b> . 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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>



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 <sup>31</sup> -1). The default value is 2000. <b>limit</b> can be used together with <b>marker</b> . For details, see the parameter description of <b>marker</b> .

## 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 6-8** Response parameter

Parameter	Type	Description
ports	Array of <b>port</b> objects	Specifies the port object list. For details, see <a href="#">Table 6-9</a> .

Parameter	Type	Description
ports_links	Array of <a href="#">ports_link</a> objects	Specifies the pagination information. For details, see <a href="#">Table 6-14</a> . Only when <b>limit</b> is used for filtering and the number of resources exceeds the value of <b>limit</b> or 2000 (default value of <b>limit</b> ), value <b>next</b> will be returned for <b>rel</b> and a link for <b>href</b> .

**Table 6-9** port objects

Attribute	Type	Description
id	String	<ul style="list-style-type: none"> <li>Specifies the port ID. The value can contain a maximum of 255 characters.</li> <li>This parameter is not mandatory when you query ports.</li> </ul>
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"> <li>Specifies the administrative state of the port.</li> <li>The default value is <b>true</b>.</li> </ul>
mac_address	String	<ul style="list-style-type: none"> <li>Specifies the port MAC address, for example, <b>"mac_address": "fa:16:3e:9e:ff:55"</b>.</li> <li>The MAC address can only be dynamically assigned by the system.</li> </ul>
fixed_ips	Array of <a href="#">fixed_ip</a> objects	<ul style="list-style-type: none"> <li>Specifies the port IP address. For details, see <a href="#">Table 6-10</a>. For example, the value is <b>"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]</b>. <b>"fixed_ips": [{"subnet_id": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", "ip_address": "2a07:b980:4030:14::1"}]</b></li> </ul>

Attribute	Type	Description
device_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the device that the port belongs to.</li> <li>This parameter is automatically maintained by the system and cannot be set or updated manually. The port with this field specified cannot be deleted.</li> </ul>
device_owner	String	<ul style="list-style-type: none"> <li>Specifies the belonged device, which can be the DHCP server, router, or Nova.</li> <li>The value can be <b>network:dhcp</b>, <b>network:router_interface_distributed</b>, <b>compute:xxx</b>, <b>neutron:VIP_PORT</b>, <b>neutron:LOADBALANCERV2</b>, <b>neutron:LOADBALANCERV3</b>, <b>network:endpoint_interface</b>, <b>network:nat_gateway</b>, or <b>network:ucmp</b>. (In value <b>compute:xxx</b>, <b>xxx</b> specifies the AZ name, for example, <b>compute:aa-bb-cc</b> indicates that the private IP address is used by an ECS in the <b>aa-bb-cc</b> AZ).</li> <li>Instructions: <ul style="list-style-type: none"> <li>This parameter value cannot be updated. You can only set <b>device_owner</b> to <b>neutron:VIP_PORT</b> 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 <b>neutron:VIP_PORT</b>.</li> <li>The port with this field specified cannot be deleted.</li> </ul> </li> </ul>
tenant_id	String	Specifies the project ID.

Attribute	Type	Description
status	String	<ul style="list-style-type: none"> <li>• Specifies the port status.</li> <li>• The value can be <b>ACTIVE</b>, <b>BUILD</b>, or <b>DOWN</b>.</li> <li>• The status of a HANA SR-IOV VM port is always <b>DOWN</b>.</li> </ul>
security_groups	Array of strings	<ul style="list-style-type: none"> <li>• Specifies the security group UUID, for example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. This is an extended attribute.</li> <li>• This parameter cannot be left blank.</li> </ul>

Attribute	Type	Description
allowed_address_pairs	Array of <a href="#">allowed_address_pairs</a> objects	<ul style="list-style-type: none"> <li>• Specifies the IP address and MAC address pair. This is an extended attribute. For details, see <a href="#">Table 6-11</a>.</li> <li>• Instructions: <ul style="list-style-type: none"> <li>- The IP address cannot be <b>0.0.0.0</b>.</li> <li>- Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> <li>- If the value of <b>allowed_address_pairs</b> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> <li>- In the hardware SDN networking plan, the <b>ip_address</b> attribute value cannot be in CIDR format.</li> <li>- To assign a virtual IP address to an ECS, the IP address configured in <b>allowed_address_pairs</b> must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication.</li> <li>- Set <b>allowed_address_pairs</b> of the cloud server to <b>1.1.1.1/0</b>.</li> </ul> </li> </ul>
extra_dhcp_opts	Array of <a href="#">extra_dhcp_opt</a> objects	Specifies the extended DHCP option. This is an extended attribute. For details, see <a href="#">Table 6-12</a> .
binding:vif_details	<a href="#">binding:vif_details</a> object	For details, see <a href="#">Table 6-13</a> .

Attribute	Type	Description
binding:profile	Object	<ul style="list-style-type: none"> <li>• Specifies the user-defined settings. This is an extended attribute.</li> <li>• Instructions: <ul style="list-style-type: none"> <li>- The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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: {"internal_elb": true}</li> <li>- The <b>disable_security_groups</b> field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: {"disable_security_groups": true } Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> <li>- For Consumer Cloud, the values of <b>udp_srvports</b> and <b>tcp_srvports</b> fields are strings. By default, <b>udp_srvports</b> and <b>tcp_srvports</b> are not</li> </ul> </li> </ul>

Attribute	Type	Description
		<p>specified. You can set <b>udp_srvports</b> and <b>tcp_srvports</b> 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 <b>udp_srvports</b> and <b>tcp_srvports</b> 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"> <li>• Specifies the type of the bound vNIC.</li> <li>• The value can be: <ul style="list-style-type: none"> <li>- <b>normal</b> indicates software switching.</li> </ul> </li> </ul>
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

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

**Table 6-10 fixed\_ip** objects

Attribute	Type	Description
subnet_id	String	<ul style="list-style-type: none"> <li>Specifies the subnet ID.</li> <li>This parameter cannot be updated.</li> </ul>
ip_address	String	<ul style="list-style-type: none"> <li>Specifies the port IP address.</li> <li>This parameter cannot be updated.</li> </ul>

**Table 6-11 allowed\_address\_pairs** objects

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



Name	Mandatory	Type	Description
mac_address	No	String	Specifies the MAC address.

**Table 6-12 extra\_dhcp\_opt** objects

Attribute	Type	Description
opt_name	String	Specifies the option name.
opt_value	String	Specifies the option value.

**Table 6-13 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 6-14 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](#).

## 6.2.2 Querying a Port

### Function

This API is used to query details about a specified port.

### URI

GET /v2.0/ports/{port\_id}

[Table 6-15](#) describes the parameters.

**Table 6-15** 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 6-16** Response parameter

Parameter	Type	Description
port	<a href="#">port</a> object	Specifies the port object list. For details, see <a href="#">Table 6-17</a> .

**Table 6-17 port objects**

Attribute	Type	Description
id	String	<ul style="list-style-type: none"> <li>Specifies the port ID. The value can contain a maximum of 255 characters.</li> <li>This parameter is not mandatory when you query ports.</li> </ul>
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"> <li>Specifies the administrative state of the port.</li> <li>The default value is <b>true</b>.</li> </ul>
mac_address	String	<ul style="list-style-type: none"> <li>Specifies the port MAC address, for example, <b>"mac_address": "fa:16:3e:9e:ff:55"</b>.</li> <li>The MAC address can only be dynamically assigned by the system.</li> </ul>
fixed_ips	Array of <b>fixed_ip</b> objects	<ul style="list-style-type: none"> <li>Specifies the port IP address. For details, see <a href="#">Table 6-18</a>. For example, the value is <b>"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]</b>. <b>"fixed_ips": [{"subnet_id": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", "ip_address": "2a07:b980:4030:14::1"}]</b>.</li> </ul>
device_id	String	<ul style="list-style-type: none"> <li>Specifies the device ID.</li> <li>This parameter is automatically maintained by the system and cannot be set or updated manually. The port with this field specified cannot be deleted.</li> </ul>

Attribute	Type	Description
device_owner	String	<ul style="list-style-type: none"> <li>• Specifies the belonged device, which can be the DHCP server, router, or Nova.</li> <li>• The value can be <b>network:dhcp</b>, <b>network:router_interface_distributed</b>, <b>compute:xxx</b>, <b>neutron:VIP_PORT</b>, <b>neutron:LOADBALANCERV2</b>, <b>neutron:LOADBALANCERV3</b>, <b>network:endpoint_interface</b>, <b>network:nat_gateway</b>, or <b>network:ucmp</b>. (In value <b>compute:xxx</b>, <b>xxx</b> specifies the AZ name, for example, <b>compute:aa-bb-cc</b> indicates that the private IP address is used by an ECS in the <b>aa-bb-cc</b> AZ).</li> <li>• Instructions: <ul style="list-style-type: none"> <li>- This parameter value cannot be updated. You can only set <b>device_owner</b> to <b>neutron:VIP_PORT</b> 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 <b>neutron:VIP_PORT</b>.</li> <li>- The port with this field specified cannot be deleted.</li> </ul> </li> </ul>
tenant_id	String	Specifies the project ID.
status	String	<ul style="list-style-type: none"> <li>• Specifies the port status.</li> <li>• The value can be <b>ACTIVE</b>, <b>BUILD</b>, or <b>DOWN</b>.</li> <li>• The status of a HANA SR-IOV VM port is always <b>DOWN</b>.</li> </ul>



Attribute	Type	Description
security_groups	Array of strings	<ul style="list-style-type: none"> <li>• Specifies the security group UUID, for example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. This is an extended attribute.</li> <li>• This parameter cannot be left blank.</li> </ul>
allowed_address_pairs	Array of <a href="#">allowed_address_pairs</a> objects	<ul style="list-style-type: none"> <li>• Specifies the IP address and MAC address pair. This is an extended attribute. For details, see <a href="#">Table 6-19</a>.</li> <li>• Instructions: <ul style="list-style-type: none"> <li>- The IP address cannot be <b>0.0.0.0</b>.</li> <li>- Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> <li>- If the value of <b>allowed_address_pairs</b> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> <li>- In the hardware SDN networking plan, the <b>ip_address</b> attribute value cannot be in CIDR format.</li> <li>- To assign a virtual IP address to an ECS, the IP address configured in <b>allowed_address_pairs</b> must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication.</li> <li>- Set <b>allowed_address_pairs</b> of the cloud server to <b>1.1.1.1/0</b>.</li> </ul> </li> </ul>

Attribute	Type	Description
extra_dhcp_opts	Array of <a href="#">extra_dhcp_opt</a> objects	Specifies the extended DHCP option. This is an extended attribute. For details, see <a href="#">Table 6-20</a> .
binding:vif_details	<a href="#">binding:vif_details</a> object	For details, see <a href="#">Table 6-21</a> .

Attribute	Type	Description
binding:profile	binding:profile object	<ul style="list-style-type: none"> <li>• Specifies the user-defined settings. This is an extended attribute.</li> <li>• Instructions: <ul style="list-style-type: none"> <li>- The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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: {"internal_elb": true}</li> <li>- The <b>disable_security_groups</b> field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: {"disable_security_groups": true } Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> <li>- For Consumer Cloud, the values of <b>udp_srvports</b> and <b>tcp_srvports</b> fields are strings. By default, <b>udp_srvports</b> and <b>tcp_srvports</b> are not</li> </ul> </li> </ul>

Attribute	Type	Description
		<p>specified. You can set <b>udp_srvports</b> and <b>tcp_srvports</b> 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 <b>udp_srvports</b> and <b>tcp_srvports</b> 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"> <li>• Specifies the type of the bound vNIC.</li> <li>• The value can be: <ul style="list-style-type: none"> <li>- <b>normal</b> indicates software switching.</li> </ul> </li> </ul>
project_id	String	<p>Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a>.</p>

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

**Table 6-18 fixed\_ip** objects

Attribute	Type	Description
subnet_id	String	<ul style="list-style-type: none"> <li>Specifies the subnet ID.</li> <li>This parameter cannot be updated.</li> </ul>
ip_address	String	<ul style="list-style-type: none"> <li>Specifies the port IP address.</li> <li>This parameter cannot be updated.</li> </ul>

**Table 6-19 allowed\_address\_pairs** objects

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

Name	Mandatory	Type	Description
mac_address	No	String	Specifies the MAC address.

**Table 6-20 extra\_dhcp\_opt objects**

Attribute	Type	Description
opt_name	String	Specifies the option name.
opt_value	String	Specifies the option value.

**Table 6-21 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](#).

## 6.2.3 Creating a Port

### Function

This API is used to create a port.

### URI

POST /v2.0/ports

### Request Parameters

Table 6-22 Request parameter

Parameter	Type	Mandatory	Description
port	<a href="#">port</a> object	Yes	Specifies the port object list. For details, see <a href="#">Table 6-23</a> .

Table 6-23 port objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the port name.
network_id	Yes	String	<ul style="list-style-type: none"><li>Specifies the ID of the network to which the port belongs.</li><li>The network ID must exist.</li></ul>
admin_state_up	No	Boolean	Specifies the administrative status. The default value is <b>true</b> .

Attribute	Mandatory	Type	Description
fixed_ips	No	Array of <b>fixed_ip</b> objects	Specifies the port IP address. For details, see <a href="#">Table 6-24</a> . For example, the value is <b>"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]</b> . <b>"fixed_ips": [{"subnet_id": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", "ip_address": "2a07:b980:4030:14::1"}]</b>
security_groups	No	Array of strings	Specifies the UUID of the security group, for example, <b>"security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]</b> . This is an extended attribute. This parameter cannot be left blank.



Attribute	Mandatory	Type	Description
allowed_addresses_pairs	No	Array of <a href="#">allowed_addresses_pairs</a> objects	<p>Specifies the IP address and MAC address pair. This is an extended attribute. For details, see <a href="#">Table 6-25</a>.</p> <p>Instructions:</p> <ul style="list-style-type: none"> <li>• The IP address cannot be <b>0.0.0.0</b>.</li> <li>• Configure a dedicated security group for the port if the parameter <b>allowed_addresses_pairs</b> has a large CIDR block (subnet mask less than 24).</li> <li>• If the value of <b>allowed_addresses_pairs</b> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> <li>• In the hardware SDN networking plan, the <b>ip_address</b> attribute value cannot be in CIDR format.</li> <li>• To assign a virtual IP address to an ECS, the IP address configured in <b>allowed_addresses_pairs</b> must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication.</li> <li>• Set <b>allowed_addresses_pairs</b> of the cloud server to <b>1.1.1.1/0</b>.</li> </ul>
extra_dhcp_options	No	Array of <a href="#">extra_dhcp_options</a> objects	<p>Specifies the extended DHCP option. This is an extended attribute. For details, see <a href="#">Table 6-26</a>.</p>

Attribute	Mandatory	Type	Description
binding:profile	No	Object	<ul style="list-style-type: none"> <li>● Specifies the user-defined settings. This is an extended attribute.</li> <li>● Instructions: <ul style="list-style-type: none"> <li>- The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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></li> <li>- The <b>disable_security_group</b>s field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: <code>{"disable_security_group s": true }</code> Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> <li>- For Consumer Cloud, the values of</li> </ul> </li> </ul>

Attribute	Mandatory	Type	Description
			<p><b>udp_srvports</b> and <b>tcp_srvports</b> fields are strings. By default, <b>udp_srvports</b> and <b>tcp_srvports</b> are not specified. You can set <b>udp_srvports</b> and <b>tcp_srvports</b> 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 <b>udp_srvports</b> and <b>tcp_srvports</b> 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. <b>normal:</b> Softswitch
device_owner	No	String	Specifies the device that the port belongs to. Currently, only "" and <b>neutron:VIP_PORT</b> are supported. <b>neutron:VIP_PORT</b> indicates the port of a virtual IP address.

**Table 6-24** 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 6-25** `allowed_address_pairs` objects

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

**Table 6-26** `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 6-27** Response parameter

Parameter	Type	Description
port	<a href="#">port object</a>	Specifies the port information. For details, see <a href="#">Table 6-28</a> .

**Table 6-28** 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 <b>true</b> .
mac_address	String	Specifies the port MAC address. For example, " <b>mac_address</b> ": " <b>fa:16:3e:9e:ff:55</b> ". This value can only be dynamically assigned by the system.
fixed_ips	Array of <a href="#">fixed_ip</a> objects	Specifies the port IP address. For details, see <a href="#">Table 6-29</a> . For example, the value is " <b>fixed_ips</b> ": [{" <b>subnet_id</b> ": " <b>4dc70db6-cb7f-4200-9790-a6a910776bba</b> ", " <b>ip_address</b> ": " <b>192.169.25.79</b> "}]. " <b>fixed_ips</b> ": [{" <b>subnet_id</b> ": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", " <b>ip_address</b> ": "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 <b>network:dhcp</b> , <b>network:router_interface_distributed</b> , <b>compute:xxx</b> , <b>neutron:VIP_PORT</b> , <b>neutron:LOADBALANCERV2</b> , <b>neutron:LOADBALANCERV3</b> , <b>network:endpoint_interface</b> , <b>network:nat_gateway</b> , or <b>network:ucmp</b> . (In value <b>compute:xxx</b> , <b>xxx</b> specifies the AZ name, for example, <b>compute:aa-bb-cc</b> indicates that the private IP address is used by an ECS in the <b>aa-bb-cc</b> AZ). This parameter value cannot be updated. You can only set <b>device_owner</b> to <b>neutron:VIP_PORT</b> 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 <b>neutron:VIP_PORT</b> . 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 <b>ACTIVE</b> , <b>BUILD</b> , or <b>DOWN</b> . The status of a HANA SR-IOV VM port is always <b>DOWN</b> .

Attribute	Type	Description
security_groups	Array of strings	Specifies the UUID of the security group, for example, " <b>security_groups</b> ": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. This is an extended attribute.  This parameter cannot be left blank.
allowed_address_pairs	Array of <a href="#">allowed_address_pairs</a> objects	Specifies the IP address and MAC address pair. This is an extended attribute. For details, see <a href="#">Table 6-30</a> .  Instructions: <ul style="list-style-type: none"> <li>• The IP address cannot be <b>0.0.0.0</b>.</li> <li>• Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> <li>• If the value of <b>allowed_address_pairs</b> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> <li>• In the hardware SDN networking plan, the <b>ip_address</b> attribute value cannot be in CIDR format.</li> <li>• To assign a virtual IP address to an ECS, the IP address configured in <b>allowed_address_pairs</b> must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication.</li> <li>• Set <b>allowed_address_pairs</b> of the cloud server to <b>1.1.1.1/0</b>.</li> </ul>
extra_dhcp_opts	Array of <a href="#">extra_dhcp_opt</a> objects	Specifies the extended DHCP option. This is an extended attribute. For details, see <a href="#">Table 6-31</a> .
binding:vif_details	<a href="#">binding:vif_details</a> object	For details, see <a href="#">Table 6-32</a> .



Attribute	Type	Description
binding:profile	Object	<ul style="list-style-type: none"> <li>• Specifies the user-defined settings. This is an extended attribute.</li> <li>• Instructions: <ul style="list-style-type: none"> <li>- The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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: {"internal_elb": true}</li> <li>- The <b>disable_security_groups</b> field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: {"disable_security_groups": true } Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> <li>- For Consumer Cloud, the values of <b>udp_srvports</b> and <b>tcp_srvports</b> fields are strings. By default, <b>udp_srvports</b> and <b>tcp_srvports</b> are not</li> </ul> </li> </ul>

Attribute	Type	Description
		<p>specified. You can set <b>udp_srvports</b> and <b>tcp_srvports</b> 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 <b>udp_srvports</b> and <b>tcp_srvports</b> 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><b>normal:</b> Softswitch</p>
project_id	String	<p>Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a>.</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 6-29 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 6-30 allowed\_address\_pairs** objects

Attribute	Type	Description
ip_address	String	Specifies the IP address. This parameter cannot be <b>0.0.0.0</b> .
mac_address	String	Specifies the MAC address.

**Table 6-31 extra\_dhcp\_opt** objects

Attribute	Type	Description
opt_name	String	Specifies the option name.
opt_value	String	Specifies the option value.

**Table 6-32 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](#).

## 6.2.4 Updating a Port

### Function

This API is used to update a port.

### URI

PUT /v2.0/ports/{port\_id}

[Table 6-33](#) describes the parameters.

**Table 6-33** Parameter description

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

## Request Parameters

**Table 6-34** Request parameter

Parameter	Type	Mandatory	Description
port	port object	Yes	Specifies the port object list. For details, see <a href="#">Table 6-35</a> . You must specify at least one attribute when updating a port.

**Table 6-35** 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, " <b>security_groups</b> ": <b>["a0608cbf-d047-4f54-8b28-cd7b59853fff"]</b> . This is an extended attribute. This parameter cannot be left blank.

Attribute	Mandatory	Type	Description
allowed_address_pairs	No	Array of <a href="#">allowed_address_pairs</a> objects	<p>Specifies the IP address and MAC address pair. This is an extended attribute. For details, see <a href="#">Table 6-36</a>.</p> <p>Instructions:</p> <ul style="list-style-type: none"> <li>• The IP address cannot be <b>0.0.0.0</b>.</li> <li>• Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> <li>• If the value of <b>allowed_address_pairs</b> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> <li>• In the hardware SDN networking plan, the <b>ip_address</b> attribute value cannot be in CIDR format.</li> <li>• To assign a virtual IP address to an ECS, the IP address configured in <b>allowed_address_pairs</b> must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication.</li> <li>• Set <b>allowed_address_pairs</b> of the cloud server to <b>1.1.1.1/0</b>.</li> </ul>
extra_dhcp_opts	No	Array of <a href="#">extra_dhcp_opt</a> objects	<p>Specifies the extended DHCP option. This is an extended attribute. For details, see <a href="#">Table 6-37</a>.</p>

Attribute	Mandatory	Type	Description
binding:profile	No	Object	<ul style="list-style-type: none"> <li>• Specifies the user-defined settings. This is an extended attribute.</li> <li>• Instructions: <ul style="list-style-type: none"> <li>- The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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></li> <li>- The <b>disable_security_groups</b> field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: <code>{"disable_security_groups": true }</code> Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> </ul> </li> </ul>

Attribute	Mandatory	Type	Description
			<p>- For Consumer Cloud, the values of <b>udp_srvports</b> and <b>tcp_srvports</b> fields are strings. By default, <b>udp_srvports</b> and <b>tcp_srvports</b> are not specified. You can set <b>udp_srvports</b> and <b>tcp_srvports</b> 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 <b>udp_srvports</b> and <b>tcp_srvports</b> 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. <b>normal:</b> Softswitch

Table 6-36 allowed\_address\_pairs objects

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

Table 6-37 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 6-38** Response parameter

Parameter	Type	Description
port	<a href="#">port</a> object	Specifies the port object list. For details, see <a href="#">Table 6-39</a> .

**Table 6-39** 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 <b>true</b> .
mac_address	String	Specifies the port MAC address. For example, " <b>mac_address</b> ": " <b>fa:16:3e:9e:ff:55</b> ". This value can only be dynamically assigned by the system.

Attribute	Type	Description
fixed_ips	Array of <a href="#">fixed_ip</a> objects	Specifies the port IP address. For details, see <a href="#">Table 6-40</a> . For example, the value is <b>"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]</b> . <b>"fixed_ips": [{"subnet_id": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", "ip_address": "2a07:b980:4030:14::1"}]</b>
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 <b>network:dhcp</b> , <b>network:router_interface_distributed</b> , <b>compute:xxx</b> , <b>neutron:VIP_PORT</b> , <b>neutron:LOADBALANCERV2</b> , <b>neutron:LOADBALANCERV3</b> , <b>network:endpoint_interface</b> , <b>network:nat_gateway</b> , or <b>network:ucmp</b> . (In value <b>compute:xxx</b> , <b>xxx</b> specifies the AZ name, for example, <b>compute:aa-bb-cc</b> indicates that the private IP address is used by an ECS in the <b>aa-bb-cc</b> AZ). This parameter value cannot be updated. You can only set <b>device_owner</b> to <b>neutron:VIP_PORT</b> 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 <b>neutron:VIP_PORT</b> . The port with this field specified cannot be deleted.
tenant_id	String	Specifies the project ID.

Attribute	Type	Description
status	String	Specifies the port status. The value can be <b>ACTIVE</b> , <b>BUILD</b> , or <b>DOWN</b> . The status of a HANA SR-IOV VM port is always <b>DOWN</b> .
security_groups	Array of strings	Specifies the UUID of the security group, for example, " <b>security_groups</b> ": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. This is an extended attribute. This parameter cannot be left blank.
allowed_address_pairs	Array of <a href="#">allowed_address_pairs</a> objects	Specifies the IP address and MAC address pair. This is an extended attribute. For details, see <a href="#">Table 6-41</a> . Instructions: <ul style="list-style-type: none"> <li>• The IP address cannot be <b>0.0.0.0</b>.</li> <li>• Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> <li>• If the value of <b>allowed_address_pairs</b> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> <li>• In the hardware SDN networking plan, the <b>ip_address</b> attribute value cannot be in CIDR format.</li> <li>• To assign a virtual IP address to an ECS, the IP address configured in <b>allowed_address_pairs</b> must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication.</li> <li>• Set <b>allowed_address_pairs</b> of the cloud server to <b>1.1.1.1/0</b>.</li> </ul>

Attribute	Type	Description
extra_dhcp_opts	Array of <a href="#">extra_dhcp_opt</a> objects	Specifies the extended DHCP option. This is an extended attribute. For details, see <a href="#">Table 6-42</a> .
binding:vif_details	<a href="#">binding:vif_details</a> object	For details, see <a href="#">Table 6-43</a> .

Attribute	Type	Description
binding:profile	Object	<ul style="list-style-type: none"> <li>• Specifies the user-defined settings. This is an extended attribute.</li> <li>• Instructions: <ul style="list-style-type: none"> <li>- The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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: {"internal_elb": true}</li> <li>- The <b>disable_security_groups</b> field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: {"disable_security_groups": true } Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> <li>- For Consumer Cloud, the values of <b>udp_srvports</b> and <b>tcp_srvports</b> fields are strings. By default, <b>udp_srvports</b> and <b>tcp_srvports</b> are not</li> </ul> </li> </ul>

Attribute	Type	Description
		<p>specified. You can set <b>udp_srvports</b> and <b>tcp_srvports</b> 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 <b>udp_srvports</b> and <b>tcp_srvports</b> 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><b>normal:</b> Softswitch</p>
project_id	String	<p>Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a>.</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 6-40 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 6-41 allowed\_address\_pairs** objects

Attribute	Type	Description
ip_address	String	Specifies the IP address. This parameter cannot be <b>0.0.0.0</b> .
mac_address	String	Specifies the MAC address.

**Table 6-42 extra\_dhcp\_opt** objects

Attribute	Type	Description
opt_name	String	Specifies the option name.
opt_value	String	Specifies the option value.

**Table 6-43 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](#).

## 6.2.5 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 6-44](#) describes the parameters.

**Table 6-44** 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](#).

# 6.3 Network

## 6.3.1 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 6-45** describes the parameters.

**Table 6-45** 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 <b>true</b> or <b>false</b> .
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 <b>true</b> or <b>false</b> .
status	No	String	Specifies that the network status is used as the filtering condition. The value can be <b>ACTIVE</b> , <b>BUILD</b> , or <b>DOWN</b> .
router:external	No	Boolean	Specifies whether the network is an external network is used as the filtering condition. The value can be <b>true</b> or <b>false</b> .
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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (<math>2^{31}-1</math>). The default value is 2000.</p> <p><b>limit</b> can be used together with <b>marker</b>. For details, see the parameter description of <b>marker</b>.</p>

## Request Parameters

None

## Example Request

```
GET https://{Endpoint}/v2.0/networks?limit=1
```

## Response Parameters

**Table 6-46** Response parameter

Parameter	Type	Description
networks	Array of <a href="#">network</a> objects	Specifies the network list. For details, see <a href="#">Table 6-47</a> .
networks_links	Array of <a href="#">networks_link</a> objects	Specifies the pagination information. For details, see <a href="#">Table 6-48</a> . Only when <b>limit</b> is used for filtering and the number of resources exceeds the value of <b>limit</b> or 2000 (default value of <b>limit</b> ), value <b>next</b> will be returned for <b>rel</b> and a link for <b>href</b> .

**Table 6-47** network object

Attribute	Type	Description
status	String	Specifies the network status. The value can be <b>ACTIVE</b> , <b>BUILD</b> , <b>DOWN</b> , or <b>ERROR</b> .
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 <b>admin_external_net</b> value (preset network name and cannot be used).
router:external	Boolean	Specifies whether the network is an external network. The default value is <b>false</b> . This is an extended attribute.
admin_state_up	Boolean	Specifies the administrative status. The value can only be <b>true</b> .
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 <b>geneve</b>. If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as <b>admin_external_net</b>, this parameter is fixed at <b>vlan</b> and cannot be configured.</p> <p>Note:</p> <ul style="list-style-type: none"> <li>• Set this parameter to <b>geneve</b> if you want to create GENEVE networks.</li> <li>• Do not specify this parameter if you want to create VXLAN networks.</li> </ul>
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.
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 6-48 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](#).

## 6.3.2 Querying Network Details

### Function

This API is used to query details about a network.

### URI

GET /v2.0/networks/{network\_id}

[Table 6-49](#) describes the parameters.

**Table 6-49** 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 6-50** Response parameter

Parameter	Type	Description
network	<a href="#">network</a> object	Specifies the network. For details, see <a href="#">Table 6-51</a> .

**Table 6-51** network objects

Attribute	Type	Description
status	String	Specifies the network status. The value can be <b>ACTIVE</b> , <b>BUILD</b> , <b>DOWN</b> , or <b>ERROR</b> .
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 <b>admin_external_net</b> value (preset network name and cannot be used).
router:external	Boolean	Specifies whether the network is an external network. The default value is <b>false</b> . This is an extended attribute.
admin_state_up	Boolean	Specifies the administrative status. The value can only be <b>true</b> .
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 <b>geneve</b> . If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as <b>admin_external_net</b> , this parameter is fixed at <b>vlan</b> and cannot be configured. Note: <ul style="list-style-type: none"> <li>• Set this parameter to <b>geneve</b> if you want to create GENEVE networks.</li> <li>• Do not specify this parameter if you want to create VXLAN networks.</li> </ul>
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 <a href="#">Obtaining a Project ID</a> .
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](#).

## 6.3.3 Creating a Network

### Function

This API is used to create a network.

### URI

POST /v2.0/networks

### Request Parameters

**Table 6-52** Request parameter

Parameter	Type	Mandatory	Description
network	<a href="#">network object</a>	Yes	Specifies the network. For details, see <a href="#">Table 6-53</a> .

**Table 6-53** network objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the network name. The name cannot be the same as the <b>admin_external_net</b> value (preset network name and cannot be used).
admin_state_up	No	Boolean	Specifies the administrative status. The value can only be <b>true</b> .
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 <b>geneve</b>. If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as <b>admin_external_net</b>, this parameter is fixed at <b>vlan</b> and cannot be configured.</p> <p>Note:</p> <ul style="list-style-type: none"> <li>Set this parameter to <b>geneve</b> if you want to create GENEVE networks.</li> <li>Do not specify this parameter if you want to create VXLAN networks.</li> </ul>
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 6-54** Response parameter

Parameter	Type	Description
network	<b>network</b> object	Specifies the network. For details, see <a href="#">Table 6-55</a> .

**Table 6-55 network** objects

Attribute	Type	Description
status	String	Specifies the network status. The value can be <b>ACTIVE</b> , <b>BUILD</b> , <b>DOWN</b> , or <b>ERROR</b> .
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 <b>admin_external_net</b> value (preset network name and cannot be used).
router:external	Boolean	Specifies whether the network is an external network. The default value is <b>false</b> . This is an extended attribute.
admin_state_up	Boolean	Specifies the administrative status. The value can only be <b>true</b> .
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 <b>geneve</b>. If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as <b>admin_external_net</b>, this parameter is fixed at <b>vlan</b> and cannot be configured.</p> <p>Note:</p> <ul style="list-style-type: none"> <li>• Set this parameter to <b>geneve</b> if you want to create GENEVE networks.</li> <li>• Do not specify this parameter if you want to create VXLAN networks.</li> </ul>

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 <a href="#">Obtaining a Project ID</a> .
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](#).

## 6.3.4 Updating a Network

### Function

This API is used to update a network.

### URI

PUT /v2.0/networks/{network\_id}

[Table 6-56](#) describes the parameters.

**Table 6-56** Parameter description

Name	Mandatory	Description
network_id	Yes	Specifies the network ID.

### Request Parameters

**Table 6-57** Request parameter

Parameter	Type	Mandatory	Description
network	<a href="#">network</a> object	Yes	Specifies the network. For details, see <a href="#">Table 6-58</a> . You must specify at least one attribute when updating a network.

**Table 6-58** network objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the network name. The name cannot be the same as the <b>admin_external_net</b> 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 <b>true</b> .
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 6-59** Response parameter

Parameter	Type	Description
network	<b>network</b> object	Specifies the network. For details, see <a href="#">Table 6-60</a> .

**Table 6-60** network objects

Attribute	Type	Description
status	String	Specifies the network status. The value can be <b>ACTIVE</b> , <b>BUILD</b> , <b>DOWN</b> , or <b>ERROR</b> .
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 <b>admin_external_net</b> value (preset network name and cannot be used).
router:external	Boolean	Specifies whether the network is an external network. The default value is <b>false</b> . This is an extended attribute.
admin_state_up	Boolean	Specifies the administrative status. The value can only be <b>true</b> .
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 <b>geneve</b> . If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as <b>admin_external_net</b> , this parameter is fixed at <b>vlan</b> and cannot be configured. Note: <ul style="list-style-type: none"> <li>• Set this parameter to <b>geneve</b> if you want to create GENEVE networks.</li> <li>• Do not specify this parameter if you want to create VXLAN networks.</li> </ul>
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 <a href="#">Obtaining a Project ID</a> .
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](#).

## 6.3.5 Deleting a Network

### Function

This API is used to delete a network.

### URI

DELETE /v2.0/networks/{network\_id}

[Table 6-61](#) describes the parameters.

**Table 6-61** 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](#).

## 6.4 Subnet

### 6.4.1 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 6-62** describes the parameters.

**Table 6-62** 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 <b>true</b> or <b>false</b> .
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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2<sup>31</sup>-1). The default value is 2000.</p> <p><b>limit</b> can be used together with <b>marker</b>. For details, see the parameter description of <b>marker</b>.</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 6-63** Response parameter

Parameter	Type	Description
subnets	Array of <a href="#">subnet</a> objects	Specifies the subnet list. For details, see <a href="#">Table 6-64</a> .
subnets_links	Array of <a href="#">subnets_link</a> objects	Specifies the pagination information. For details, see <a href="#">Table 6-67</a> . Only when <b>limit</b> is used for filtering and the number of resources exceeds the value of <b>limit</b> or 2000 (default value of <b>limit</b> ), value <b>next</b> will be returned for <b>rel</b> and a link for <b>href</b> .

**Table 6-64** 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 <b>4</b> (IPv4) or <b>6</b> (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 <b>allocation_pools</b> . This attribute cannot be modified.

Attribute	Type	Description
allocation_pools	Array of <a href="#">allocation_pool</a> objects	<p>Specifies available IP address pools. For details, see <a href="#">Table 6-65</a>.</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 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> <pre>[{"start": "2001:db8:a583:9::2", "end": "2001:db8:a583:9:ffff:ffff:ffff:fffc"}]</pre> <p>In IPv6 subnet 2001:db8:a583:9::/64, IP addresses 2001:db8:a583:9::1, 2001:db8:a583:9:ffff:ffff:ffff:fffd, 2001:db8:a583:9:ffff:ffff:ffff:fffe, and 2001:db8:a583:9:ffff:ffff:ffff:ffff 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 <b>allocation_pool</b>.</p> <p>When updating an IP address pool, the <b>allocation_pool</b> value can contain neither gateway nor broadcast IP addresses.</p>
dns_nameservers	Array of strings	<p>Specifies the DNS server address.</p> <p>Example: "dns_nameservers": ["8.xx.xx.8", "8.xx.xx.4"]</p>
host_routes	Array of <a href="#">host_route</a> objects	<p>Specifies the static VM routes. For details, see <a href="#">Table 6-66</a>.</p> <p>Static routes are not supported, and entered information will be ignored.</p>
tenant_id	String	Specifies the project ID.

Attribute	Type	Description
enable_dhcp	Boolean	Specifies whether to enable the DHCP function. Value <b>false</b> indicates that the DHCP function is not enabled. The value can only be <b>true</b> .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 6-65** 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 6-66** 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 6-67** subnets\_link object

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

### 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](#).

## 6.4.2 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 6-68** Response parameter

Parameter	Type	Description
subnet	<a href="#">subnet</a> object	Specifies the subnet. For details, see <a href="#">Table 6-69</a> .

**Table 6-69 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 <b>4</b> (IPv4) or <b>6</b> (IPv6).
ipv6_address_mode	String	Specifies the IPv6 addressing mode. Only <b>dhcpv6-stateful</b> is supported.
ipv6_ra_mode	String	Specifies the IPv6 route broadcast mode. Only <b>dhcpv6-stateful</b> is supported.
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 <b>allocation_pools</b> . This attribute cannot be modified.

Attribute	Type	Description
allocation_pools	Array of <a href="#">allocation_pool</a> objects	<p>Specifies the available IP address pool. For details, see <a href="#">Table 6-70</a>.</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 <b>192.168.1.0/24</b>, 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> <pre>[{"start": "2001:db8:a583:9::2", "end": "2001:db8:a583:9:ffff:ffff:ffff:fffc"} ]</pre> <p>In IPv6 subnet 2001:db8:a583:9::/64, IP addresses 2001:db8:a583:9::1, 2001:db8:a583:9:ffff:ffff:ffff:fffd, 2001:db8:a583:9:ffff:ffff:ffff:fffe, and 2001:db8:a583:9:ffff:ffff:ffff:ffff are reserved by the system. By default, the IP addresses reserved by the system are not in the IP address pool specified by <b>allocation_pool</b>.</p> <p>When updating an IP address pool, the <b>allocation_pool</b> value can contain neither gateway nor broadcast IP addresses.</p>
dns_nameservers	Array of strings	<p>Specifies the DNS server address.</p> <p>Example: "dns_nameservers": ["8.xx.xx.8", "8.xx.xx.4"]</p>
host_routes	Array of <a href="#">host_route</a> objects	<p>Specifies the static VM routes. For details, see <a href="#">Table 6-71</a>.</p> <p>Static routes are not supported, and entered information will be ignored.</p>
tenant_id	String	Specifies the project ID.

Attribute	Type	Description
enable_dhcp	Boolean	Specifies whether to enable the DHCP function. Value <b>false</b> indicates that the DHCP function is not enabled. The value can only be <b>true</b> .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 6-70 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 6-71 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](#).

## 6.4.3 Creating a Subnet

### Function

This API is used to create a subnet.

### URI

POST /v2.0/subnets

### Request Parameters

**Table 6-72** Request parameter

Parameter	Type	Mandatory	Description
subnet	<a href="#">subnet</a> object	Yes	Specifies the subnet. For details, see <a href="#">Table 6-73</a> .

**Table 6-73** 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 <b>4</b> (IPv4) or <b>6</b> (IPv6).

Attribute	Mandatory	Type	Description
ipv6_address_mode	No	String	Specifies the IPv6 addressing mode. Only <b>dhcpv6-stateful</b> is supported.
ipv6_ra_mode	No	String	Specifies the IPv6 route broadcast mode. Only <b>dhcpv6-stateful</b> is supported.
network_id	Yes	String	Specifies the ID of the network to which the subnet belongs.
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 <b>allocation_pools</b> . This attribute cannot be modified.

Attribute	Mandatory	Type	Description
allocation_pools	No	Array of <a href="#">allocation_pool</a> objects	<p>Specifies the available IP address pool. For details, see <a href="#">Table 6-74</a>.</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.</p> <p>[{"start": "2001:db8:a583:9::2", "end": "2001:db8:a583:9:ffff:ffff:ffff:fff"}]</p> <p>In IPv6 subnet 2001:db8:a583:9::/64, IP addresses 2001:db8:a583:9::1, 2001:db8:a583:9:ffff:ffff:ffff:fffd, 2001:db8:a583:9:ffff:ffff:ffff:fffe, and 2001:db8:a583:9:ffff:ffff:ffff:ffff 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 <b>allocation_pool</b>.</p> <p>When updating an IP address pool, the <b>allocation_pool</b> 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>



Attribute	Mandatory	Type	Description
host_routes	No	Array of <a href="#">host_route</a> objects	Specifies the static VM routes. For details, see <a href="#">Table 6-75</a> . Static routes are not supported, and entered information will be ignored.
enable_dhcp	No	Boolean	Specifies whether to enable the DHCP function. Value <b>false</b> indicates that the DHCP function is not enabled. The value can only be <b>true</b> .

**Table 6-74** 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 6-75** 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 6-76** Response parameter

Parameter	Type	Description
subnet	subnet object	Specifies the subnet. For details, see <a href="#">Table 6-77</a> .

**Table 6-77** 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 <b>4</b> (IPv4) or <b>6</b> (IPv6).
ipv6_address_mode	String	Specifies the IPv6 addressing mode. Only <b>dhcpv6-stateful</b> is supported.
ipv6_ra_mode	String	Specifies the IPv6 route broadcast mode. Only <b>dhcpv6-stateful</b> is supported.
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 <b>allocation_pools</b> . This attribute cannot be modified.
allocation_pools	Array of <b>allocation_pool</b> objects	Specifies the available IP address pool. For details, see the <b>allocation_pool</b> objects. <b>Table 6-78</b> 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 <b>192.168.1.0/24</b> , 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 <b>allocation_pool</b> . [{"start": "2001:db8:a583:9::2", "end": "2001:db8:a583:9:ffff:ffff:ffff:fffc"} ] In IPv6 subnet 2001:db8:a583:9::/64, IP addresses 2001:db8:a583:9::1, 2001:db8:a583:9:ffff:ffff:ffff:fffd, 2001:db8:a583:9:ffff:ffff:ffff:fffe, and 2001:db8:a583:9:ffff:ffff:ffff:ffff are reserved by the system. When updating an IP address pool, the <b>allocation_pool</b> 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"]

Attribute	Type	Description
host_routes	Array of <a href="#">host_route</a> objects	Specifies the static VM routes. For details, see <a href="#">Table 6-79</a> . 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 <b>false</b> indicates that the DHCP function is not enabled. The value can only be <b>true</b> .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 6-78 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 6-79 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](#).

## 6.4.4 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 6-80** Request parameter

Parameter	Type	Mandatory	Description
subnet	<a href="#">subnet</a> object	Yes	Specifies the subnet. For details, see <a href="#">Table 6-81</a> . You must specify at least one attribute when updating a subnet.

**Table 6-81** subnet objects

Attribute	Mandatory	Type	Description
name	No	String	Specifies the subnet name.

Attribute	Mandatory	Type	Description
allocation_pools	No	Array of <a href="#">allocation_pool</a> objects	<p>Specifies the available IP address pool. For details about the <b>allocation_pool</b> objects, see <a href="#">Table 6-82</a>.</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 <b>192.168.1.0/24</b>, 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 <b>allocation_pool</b>.</p> <p>[{"start": "2001:db8:a583:9::2", "end": "2001:db8:a583:9:ffff:ffff:ffff:fff"}]</p> <p>In IPv6 subnet 2001:db8:a583:9::/64, IP addresses 2001:db8:a583:9::1, 2001:db8:a583:9:ffff:ffff:ffff:fffd, 2001:db8:a583:9:ffff:ffff:ffff:fffe, and 2001:db8:a583:9:ffff:ffff:ffff:ffff are reserved by the system.</p> <p>When updating an IP address pool, the <b>allocation_pool</b> 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>

Attribute	Mandatory	Type	Description
host_routes	No	Array of <a href="#">host_route</a> objects	Specifies the static VM routes. For details, see <a href="#">Table 6-83</a> . Static routes are not supported, and entered information will be ignored.
enable_dhcp	No	Boolean	Specifies whether to enable the DHCP function. Value <b>false</b> indicates that the DHCP function is not enabled. The value can only be <b>true</b> .

**Table 6-82** 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 6-83** 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 6-84** Response parameter

Parameter	Type	Description
subnet	<a href="#">subnet</a> object	Specifies the subnet. For details, see <a href="#">Table 6-85</a> .

**Table 6-85** 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 <b>4</b> (IPv4) or <b>6</b> (IPv6).
ipv6_address_mode	String	Specifies the IPv6 addressing mode. Only <b>dhcpv6-stateful</b> is supported.
ipv6_ra_mode	String	Specifies the IPv6 route broadcast mode. Only <b>dhcpv6-stateful</b> is supported.
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 <b>allocation_pools</b> . This attribute cannot be modified.

Attribute	Type	Description
allocation_pools	Array of <a href="#">allocation_pool</a> objects	<p>Specifies the available IP address pool. For details, see the <a href="#">allocation_pool</a> objects.</p> <p><b>Table 6-86</b></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 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>[{"start": "2001:db8:a583:9::2", "end": "2001:db8:a583:9:ffff:ffff:ffff:ffff"} ]</p> <p>In IPv6 subnet 2001:db8:a583:9::/64, IP addresses 2001:db8:a583:9::1, 2001:db8:a583:9:ffff:ffff:ffff:ffff, 2001:db8:a583:9:ffff:ffff:ffff:fffe, and 2001:db8:a583:9:ffff:ffff:ffff:ffff 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 <a href="#">allocation_pool</a>.</p> <p>When updating an IP address pool, the <a href="#">allocation_pool</a> value can contain neither gateway nor broadcast IP addresses.</p>
dns_nameservers	Array of strings	<p>Specifies the DNS server address.</p> <p>Example: "dns_nameservers": ["8.xx.xx.8", "8.xx.xx.4"]</p>
host_routes	Array of <a href="#">host_route</a> objects	<p>Specifies the static VM routes. For details, see <a href="#">Table 6-87</a>.</p> <p>Static routes are not supported, and entered information will be ignored.</p>
tenant_id	String	Specifies the project ID.

Attribute	Type	Description
enable_dhcp	Boolean	Specifies whether to enable the DHCP function. Value <b>false</b> indicates that the DHCP function is not enabled. The value can only be <b>true</b> .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 6-86 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 6-87 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": "2018-09-20T02:03:03"
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 6.4.5 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](#).

# 6.5 Router

## 6.5.1 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 6-88](#) describes the parameters.

**Table 6-88** 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 <b>true</b> or <b>false</b> .
status	No	String	Specifies that the router status is used as the filtering condition. The value can be <b>ACTIVE</b> , <b>DOWN</b> , or <b>ERROE</b> .
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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (<math>2^{31}-1</math>). The default value is 2000.</p> <p><b>limit</b> can be used together with <b>marker</b>. For details, see the parameter description of <b>marker</b>.</p>

## Request Parameters

None

## Example Request

```
GET https://{Endpoint}/v2.0/routers?limit=1
```

## Response Parameters

**Table 6-89** Response parameter

Parameter	Type	Description
routers	Array of <b>router</b> objects	Specifies the router list. For details, see <a href="#">Table 6-90</a> .
routers_links	Array of <b>routers_link</b> objects	Specifies the pagination information. For details, see <a href="#">Table 6-93</a> . Only when <b>limit</b> is used for filtering and the number of resources exceeds the value of <b>limit</b> or 2000 (default value of <b>limit</b> ), value <b>next</b> will be returned for <b>rel</b> and a link for <b>href</b> .

**Table 6-90** 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 <b>true</b> .
status	String	Specifies the router status. The value can be <b>ACTIVE</b> , <b>DOWN</b> , or <b>ERROR</b> .
tenant_id	String	Specifies the project ID.
external_gateway_info	<b>external_gateway_info</b> object	Specifies the external gateway. This is an extended attribute. For details, see the <b>external_gateway_info</b> objects.
routes	Array of <b>route</b> objects	Specifies a route list. This is an extended attribute. For details, see <a href="#">Table 6-92</a> .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

Attribute	Type	Description
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 6-91 external\_gateway\_info** objects

Attribute	Type	Description
network_id	String	Specifies the UUID of the external network.  You can use <b>GET /v2.0/networks?router:external=True</b> or run the <b>neutron net-external-list</b> command to query information about the external network.
enable_snat	Boolean	Specifies whether the SNAT function is enabled.  The default value is <b>false</b> .

**Table 6-92 route** objects

Attribute	Type	Description
destination	String	Specifies the IP address range.
nexthop	String	Specifies the next hop IP address. The IP address can only be one in the subnet associated with the router.

**Table 6-93 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](#).

## 6.5.2 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 6-94** Response parameter

Parameter	Type	Description
router	<a href="#">router</a> object	Specifies the router. For details, see <a href="#">Table 6-95</a> .

**Table 6-95** 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 <b>true</b> .
status	String	Specifies the router status. The value can be <b>ACTIVE</b> , <b>DOWN</b> , or <b>ERROR</b> .
tenant_id	String	Specifies the project ID.
external_gateway_info	<a href="#">external_gateway_info</a> object	Specifies the external gateway. This is an extended attribute. For details, see the <a href="#">external_gateway_info</a> objects.
routes	Array of <a href="#">route</a> objects	Specifies a route list. This is an extended attribute. For details, see <a href="#">Table 6-97</a> .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 6-96 external\_gateway\_info** objects

Attribute	Type	Description
network_id	String	Specifies the UUID of the external network.  You can use <b>GET /v2.0/networks?router:external=True</b> or run the <b>neutron net-external-list</b> command to query information about the external network.
enable_snat	Boolean	Specifies whether the SNAT function is enabled.  The default value is <b>false</b> .

**Table 6-97 route** objects

Attribute	Type	Description
destination	String	Specifies the IP address range.
nexthop	String	Specifies the next hop IP address. The IP address can only be one in the subnet associated with the router.

## 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](#).

## 6.5.3 Creating a Router

### Function

This API is used to create a router.

### URI

POST /v2.0/routers

### Request Parameters

**Table 6-98** Request parameter

Parameter	Type	Mandatory	Description
router	<a href="#">router</a> object	Yes	Specifies the router. For details, see <a href="#">Table 6-99</a> .

**Table 6-99** 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 <b>true</b> .
external_gateway_info	No	<a href="#">external_gateway_info</a> object	Specifies the external gateway. This is an extended attribute. For details, see the <a href="#">external_gateway_info</a> objects.

**Table 6-100 external\_gateway\_info** objects

Attribute	Mandatory	Type	Description
network_id	No	String	Specifies the UUID of the external network. You can use <b>GET /v2.0/networks?router:external=True</b> or run the <b>neutron net-external-list</b> 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 6-101** Response parameter

Parameter	Type	Description
router	<b>router</b> object	Specifies the router. For details, see <a href="#">Table 6-102</a> .

**Table 6-102** 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 <b>true</b> .

Attribute	Type	Description
status	String	Specifies the router status. The value can be <b>ACTIVE</b> , <b>DOWN</b> , or <b>ERROR</b> .
tenant_id	String	Specifies the project ID.
external_gateway_info	<a href="#">external_gateway_info</a> object	Specifies the external gateway. This is an extended attribute. For details, see the <b>external_gateway_info</b> objects.
routes	Array of <a href="#">route</a> objects	Specifies a route list. This is an extended attribute. For details, see <a href="#">Table 6-104</a> .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 6-103 external\_gateway\_info** objects

Attribute	Type	Description
network_id	String	Specifies the UUID of the external network.  You can use <b>GET /v2.0/networks?router:external=True</b> or run the <b>neutron net-external-list</b> command to query information about the external network.

**Table 6-104 route** objects

Attribute	Type	Description
destination	String	Specifies the IP address range.
nexthop	String	Specifies the next hop IP address. The IP address can only be one in the subnet associated with the router.

## 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](#).

## 6.5.4 Updating a Router

### Function

This API is used to update a router.

### URI

PUT /v2.0/routers/{router\_id}

### Request Parameters

Table 6-105 Request parameter

Parameter	Mandatory	Type	Description
router	Yes	router object	Specifies the router. For details, see <a href="#">Table 6-106</a> . You must specify at least one attribute when updating a router.

**Table 6-106 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 <b>true</b> .
external_gateway_info	No	<a href="#">external_gateway_info</a> object	Specifies the external gateway. This is an extended attribute. For details, see the <a href="#">external_gateway_info</a> objects.
routes	No	Array of <a href="#">route</a> objects	Specifies a route list. This is an extended attribute. For details, see <a href="#">Table 6-108</a> .

**Table 6-107 external\_gateway\_info** objects

Attribute	Mandatory	Type	Description
network_id	No	String	Specifies the UUID of the external network. You can use <b>GET /v2.0/networks?router:external=True</b> or run the <b>neutron net-external-list</b> command to query information about the external network.

**Table 6-108 route** objects

Attribute	Mandatory	Type	Description
destination	No	String	Specifies the IP address range. Instructions: The prefix cannot be the same as that of a direct route.
nexthop	No	String	Specifies the next hop IP address. The IP address can only be one in the subnet associated with the router.



## 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 6-109** Response parameter

Parameter	Type	Description
router	<a href="#">router object</a>	Specifies the router. For details, see <a href="#">Table 6-110</a> .

**Table 6-110** 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 <b>true</b> .
status	String	Specifies the router status. The value can be <b>ACTIVE</b> , <b>DOWN</b> , or <b>ERROR</b> .
tenant_id	String	Specifies the project ID.
external_gateway_info	<a href="#">external_gateway_info object</a>	Specifies the external gateway. This is an extended attribute. For details, see the <a href="#">external_gateway_info</a> objects.
routes	Array of <a href="#">route</a> objects	Specifies a route list. This is an extended attribute. For details, see <a href="#">Table 6-112</a> .

Attribute	Type	Description
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 6-111 external\_gateway\_info** objects

Attribute	Type	Description
network_id	String	Specifies the UUID of the external network.  You can use <b>GET /v2.0/networks?router:external=True</b> or run the <b>neutron net-external-list</b> command to query information about the external network.
enable_snat	Boolean	Specifies whether the SNAT function is enabled.  The default value is <b>false</b> .

**Table 6-112 route** objects

Attribute	Type	Description
destination	String	Specifies the IP address range.
nexthop	String	Specifies the next hop IP address. The IP address can only be one in the subnet associated with the router.

## 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](#).

## 6.5.5 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](#).

## 6.5.6 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 6-113 Request parameter

Parameter	Type	Mandatory	Description
subnet_id	String	No	Specifies the subnet ID. Either <b>subnet_id</b> or <b>port_id</b> is used. Use the gateway IP address of the subnet to create a router interface.
port_id	String	No	Specifies the port ID. Either <b>subnet_id</b> or <b>port_id</b> 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 6-114** 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": "6fbe9263116a4b68818cf1edce16bc4f",
  "project_id": "6fbe9263116a4b68818cf1edce16bc4f",
  "port_id": "40e86635-b2a3-45de-a7c8-3cced5b7e755",
  "id": "5b8e885c-1347-4ac2-baf9-2249c8ed1270"
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 6.5.7 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 6-115** Request parameter

Parameter	Type	Mandatory	Description
subnet_id	String	No	Specifies the subnet ID. Either <b>subnet_id</b> or <b>port_id</b> 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 <b>subnet_id</b> or <b>port_id</b> 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 6-116** 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": "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](#).

## 6.6 Network ACL

### 6.6.1 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 6-117](#) describes the parameters.

**Table 6-117** 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 <b>4</b> (IPv4) or <b>6</b> (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 <b>allow</b> or <b>deny</b> .
enabled	No	Boolean	Specifies that the network ACL rule is enabled is used as the filtering condition. The value can be <b>true</b> or <b>false</b> .
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 <b>limit</b> . <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2 <sup>31</sup> -1). The default value is 2000. <b>limit</b> can be used together with <b>marker</b> . For details, see the parameter description of <b>marker</b> .



## Request Parameters

None

## Example Request

GET https://{Endpoint}/v2.0/fwaas/firewall\_rules

## Response Parameters

**Table 6-118** Response parameter

Parameter	Type	Description
firewall_rules	Array of <b>Firewall Rule</b> objects	Specifies the firewall rule list. For details, see <a href="#">Table 6-120</a> .
firewall_rules_links	Array of <b>firewall_rules_links</b> Object	Specifies the pagination information. For details, see <a href="#">Table 6-119</a> . Only when <b>limit</b> is used for filtering and the number of resources exceeds the value of <b>limit</b> or 2000 (default value of <b>limit</b> ), value <b>next</b> will be returned for <b>rel</b> and a link for <b>href</b> .

**Table 6-119** 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 6-120** 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 <a href="#">Obtaining a Project ID</a> .

## 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](#).

## 6.6.2 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 6-121](#) describes the parameters.

**Table 6-121** 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 <b>firewall_rule_id</b> 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 6-122** Response parameter

Parameter	Type	Description
firewall_rule	<a href="#">firewall_rule</a> object	Specifies the firewall rule objects. For details, see <a href="#">Table 6-123</a> .

**Table 6-123** 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 <a href="#">Obtaining a Project ID</a> .

## 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](#).

## 6.6.3 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 6-124** Request parameter

Parameter	Mandatory	Type	Description
firewall_rule	Yes	<a href="#">firewall_rule</a> object	Specifies the firewall rule objects. For details, see <a href="#">Table 6-125</a> .

**Table 6-125 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 <b>TCP, UDP, or ICMP</b> .	Specifies the IP protocol. The value can be <b>TCP, UDP, or ICMP</b> .
source_port	No	String	The value can be an integer from 1 to 65535 or a port number range in the format of <b>a.b</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 <b>a.b</b> .
destination_port	No	String	The value can be an integer from 1 to 65535 or a port number range in the format of <b>a.b</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 <b>a.b</b> .
ip_version	No	Integer	4/6	Specifies the IP protocol version. The value can be <b>4</b> and <b>6</b> , 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 <b>deny</b> or <b>allow</b> .
enabled	No	Boolean	The value can be <b>true</b> or <b>false</b> .	Specifies whether the network ACL rule is enabled. The value can be <b>true</b> or <b>false</b> .

## 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 6-126** Response parameter

Parameter	Type	Description
firewall_rule	<a href="#">firewall_rule</a> object	Specifies the firewall rule objects. For details, see <a href="#">Table 6-127</a> .

**Table 6-127** 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.

## 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](#).

## 6.6.4 Updating a Network ACL 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 6-128** Request parameter

Parameter	Type	Mandatory	Description
firewall_rule	<a href="#">firewall_rule</a> object	Yes	Specifies the firewall rule objects. For details, see <a href="#">Table 6-129</a> .

**Table 6-129** 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 <b>TCP</b> , <b>UDP</b> , <b>ICMP</b> , 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 <b>4</b> and <b>6</b> , 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 <b>deny</b> or <b>allow</b> .
enabled	No	Boolean	Specifies whether the network ACL rule is enabled. The value can be <b>true</b> or <b>false</b> .

## 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 6-130** Response parameter

Parameter	Type	Description
firewall_rule	<a href="#">firewall_rule</a> object	Specifies the firewall rule objects. For details, see <a href="#">Table 6-131</a> .

**Table 6-131** 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 <a href="#">Obtaining a Project ID</a> .

## 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](#).

## 6.6.5 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 6-132](#) describes the parameters.

**Table 6-132** 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](#).

## 6.6.6 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 6-133](#) describes the parameters.

**Table 6-133** 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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>

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 <sup>31</sup> -1). The default value is 2000.  <b>limit</b> can be used together with <b>marker</b> . For details, see the parameter description of <b>marker</b> .

## Request Parameters

None

## Example Request

GET https://{Endpoint}/v2.0/fwaas/firewall\_policies

## Response Parameters

**Table 6-134** Response parameter

Parameter	Type	Description
firewall_policies	Array of <b>firewall Policy</b> object	Specifies the firewall policies. For details, see <a href="#">Table 6-135</a> .
firewall_policies_links	Array of <b>firewall policies_link</b> object	<b>firewall_policies_link</b> object For details, see <a href="#">Table 6-136</a> . Only when <b>limit</b> is used for filtering and the number of resources exceeds the value of <b>limit</b> or 2000 (default value of <b>limit</b> ), value <b>next</b> will be returned for <b>rel</b> and a link for <b>href</b> .

**Table 6-135** 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 <a href="#">Obtaining a Project ID</a> .

**Table 6-136** 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](#).

## 6.6.7 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 6-137](#) describes the parameters.

**Table 6-137** 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 <b>firewall_policy_id</b> 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 6-138** Response parameter

Parameter	Type	Description
firewall_policy	<a href="#">firewall_policy</a> object	Specifies the firewall policy. For details, see <a href="#">Table 6-139</a> .

**Table 6-139** 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 <a href="#">Obtaining a Project ID</a> .

## 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](#).

## 6.6.8 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 6-140** Request parameter

Parameter	Type	Mandatory	Description
firewall_policy	<a href="#">firewall_policy</a> object	Yes	Specifies the firewall policy. For details, see <a href="#">Table 6-141</a> .

**Table 6-141** 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 <b>true</b> or <b>false</b> .

## 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 6-142** Response parameter

Parameter	Type	Description
firewall_policy	<a href="#">firewall_policy</a> object	Specifies the firewall policy. For details, see <a href="#">Table 6-143</a> .

**Table 6-143** 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 <a href="#">Obtaining a Project ID</a> .

## 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](#).

## 6.6.9 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 6-144** Request parameter

Parameter	Type	Mandatory	Description
firewall_polic y	<a href="#">firewall_poli cy</a> object	Yes	Specifies the firewall policy objects. For details, see <a href="#">Table 6-145</a> .

**Table 6-145 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 <b>true</b> or <b>false</b> .

## 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 6-146** Response parameter

Parameter	Type	Description
firewall_policy	<a href="#">firewall_policy</a> object	Specifies the firewall policy objects. For details, see <a href="#">Table 6-147</a> .

**Table 6-147 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 <a href="#">Obtaining a Project ID</a> .

## 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](#).

## 6.6.10 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 6-148](#) describes the parameters.

**Table 6-148** 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](#).

## 6.6.11 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 6-149](#) describes the parameters.

**Table 6-149** 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 6-150** 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 <b>insert_after</b> 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 <b>insert_after</b> and <b>insert_before</b> parameters are specified, the <b>insert_after</b> parameter will be ignored.
insert_before	String	No	The <b>insert_before</b> 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 <b>insert_after</b> and <b>insert_before</b> parameters are specified, the <b>insert_after</b> 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 6-151** 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 <b>False</b> .
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 <b>true</b> , 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](#).

## 6.6.12 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 6-152** 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 6-153** 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 <b>False</b> .
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 <b>true</b> , 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](#).

## 6.6.13 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 6-154** describes the parameters.

**Table 6-154** 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 <b>true</b> or <b>false</b> .
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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2<sup>31</sup>-1). The default value is 2000.</p> <p><b>limit</b> can be used together with <b>marker</b>. For details, see the parameter description of <b>marker</b>.</p>

## Request Parameters

None

## Example Request

GET https://{Endpoint}/v2.0/fwaas/firewall\_groups

## Response Parameters

**Table 6-155** Response parameter

Parameter	Type	Description
firewall_groups	Array of <b>Firewall Group</b> objects	Specifies the firewall group list. For details, see <a href="#">Table 6-156</a> .
firewall_groups_links	Array of <b>firewall_groups_link</b> objects	Specifies the <b>firewall_groups_link</b> object list. For details, see <a href="#">Table 6-157</a> . Only when <b>limit</b> is used for filtering and the number of resources exceeds the value of <b>limit</b> or 2000 (default value of <b>limit</b> ), value <b>next</b> will be returned for <b>rel</b> and a link for <b>href</b> .

**Table 6-156** 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 <a href="#">Obtaining a Project ID</a> .
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 6-157** 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](#).

## 6.6.14 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 6-158](#) describes the parameters.

**Table 6-158** 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 <b>fire_group_id</b> 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 6-159** Response parameter

Parameter	Type	Description
firewall_group	<a href="#">firewall_group</a> object	Specifies the firewall group. For details, see <a href="#">Table 6-160</a> .

**Table 6-160** 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 <a href="#">Obtaining a Project ID</a> .
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](#).

## 6.6.15 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 6-161** Request parameter

Parameter	Type	Mandatory	Description
firewall_group	<a href="#">firewall_group</a> object	Yes	Specifies the firewall group. For details, see <a href="#">Table 6-162</a> .

**Table 6-162 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. <b>NOTE</b> The port is the one whose <b>device_owner</b> is <b>network:router_interface_distributed</b> . <ul style="list-style-type: none"> <li>Call the VPC API for querying the port ID. The filtering criteria are the specified <b>network_id</b> and <b>device_owner</b>. The <b>network_id</b> is the network ID of the subnet associated with the network ACL. Example: GET https://{Endpoint}/v1/{project_id}/ports?network_id={network_id}&amp;device_owner=network%3Arouter_interface_distributed</li> </ul>
admin_state_up	No	Boolean	Specifies the administrative status of the network ACL. The value can be <b>true</b> or <b>false</b> .

## 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 6-163** Response parameter

Parameter	Type	Description
firewall_group	<a href="#">firewall_group</a> object	Specifies the firewall group. For details, see <a href="#">Table 6-164</a> .

**Table 6-164** 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 <a href="#">Obtaining a Project ID</a> .
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](#).

## 6.6.16 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 6-165** Request parameter

Parameter	Type	Mandatory	Description
firewall_group	<a href="#">firewall_group</a> object	Yes	Specifies the firewall group. For details, see <a href="#">Table 6-166</a> .

**Table 6-166** 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. <b>NOTE</b> The port is the one whose <b>device_owner</b> is <b>network:router_interface_distributed</b> . <ul style="list-style-type: none"> <li>Call the VPC API for querying the port ID. The filtering criteria are the specified <b>network_id</b> and <b>device_owner</b>. The <b>network_id</b> is the network ID of the subnet associated with the network ACL. Example: GET https://{Endpoint}/v1/{project_id}/ports?network_id={network_id}&amp;device_owner=network%3Arouter_interface_distributed</li> </ul>
admin_state_up	No	Boolean	Specifies the administrative status of the network ACL. The value can be <b>true</b> or <b>false</b> .

## 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/fwaas/firewall_groups/2fb0e81f-9f63-44b2-9894-c13a3284594a
```

```
{
  "firewall_group": {
    "egress_firewall_policy_id": "53f36c32-db25-4856-a0ba-e605fd88c5e9"
  }
}
```

## Response Parameters

**Table 6-167** Response parameter

Parameter	Type	Description
firewall_group	<b>firewall_group</b> object	Specifies the firewall group. For details, see <a href="#">Table 6-168</a> .



**Table 6-168 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 <a href="#">Obtaining a Project ID</a> .
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](#).

## 6.6.17 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 6-169](#) describes the parameters.

**Table 6-169** 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](#).

# 6.7 Security Group

## 6.7.1 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 6-170](#) describes the parameters.

**Table 6-170** 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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (<math>2^{31}-1</math>). The default value is 2000. <b>limit</b> can be used together with <b>marker</b>. For details, see the parameter description of <b>marker</b>.</p>

## Request Parameters

None

## Example Request

GET <https://{Endpoint}/v2.0/security-groups?limit=1>

## Response Parameters

**Table 6-171** Response parameter

Parameter	Type	Description
security_groups	Array of <b>Security Group</b> objects	Specifies the security group list. For details, see <a href="#">Table 6-172</a> .
security_groups_links	Array of <b>SecurityGroupsLink</b> objects	Shows pagination information about security groups. Only when <b>limit</b> is used for filtering and the number of resources exceeds the value of <b>limit</b> or 2000 (default value of <b>limit</b> ), value <b>next</b> will be returned for <b>rel</b> and a link for <b>href</b> .

**Table 6-172** 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 <b>Security Group Rule</b> objects	Specifies the security group rule list. For details, see <a href="#">Table 6-173</a> .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 6-173 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 <b>port_range_max</b> and <b>port_range_min</b> must be specified, and the <b>port_range_max</b> value must be greater than the <b>port_range_min</b> value. When the ICMP protocol is used, if you specify the ICMP code ( <b>port_range_max</b> ), you must also specify the ICMP type ( <b>port_range_min</b> ).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .

Attribute	Type	Description
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 6-174 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"
        },
        {
          "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"
        }
      ]
    },
    {
      "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](#).

## 6.7.2 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 6-175** Response parameter

Parameter	Type	Description
security_group	<a href="#">security_group</a> object	Specifies the security group. For details, see <a href="#">Table 6-176</a> .



**Table 6-176 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 <a href="#">Security Group Rule</a> objects	Specifies the security group rule list. For details, see <a href="#">Table 6-177</a> .
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 6-177 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 <b>port_range_max</b> and <b>port_range_min</b> must be specified, and the <b>port_range_max</b> value must be greater than the <b>port_range_min</b> value. When the ICMP protocol is used, if you specify the ICMP code ( <b>port_range_max</b> ), you must also specify the ICMP type ( <b>port_range_min</b> ).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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"
  },
  {
    "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"
  }
],
"created_at": "2018-09-12T08:24:14",
"updated_at": "2018-09-12T08:24:14"
}

```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 6.7.3 Creating a Security Group

### Function

This API is used to create a security group.

### URI

POST /v2.0/security-groups

### Request Parameters

**Table 6-178** Request parameter

Parameter	Mandatory	Type	Description
security_group	Yes	<a href="#">security_group</a> object	Specifies the security group. For details, see <a href="#">Table 6-179</a> .

**Table 6-179 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 6-180** Response parameter

Parameter	Type	Description
security_group	<a href="#">security_group</a> object	Specifies the security group. For details, see <a href="#">Table 6-181</a> .

**Table 6-181 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 <a href="#">Security Group Rule</a> objects	Specifies the security group rule list. For details, see <a href="#">Table 6-182</a> .

Attribute	Type	Description
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 6-182 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 <b>port_range_max</b> and <b>port_range_min</b> must be specified, and the <b>port_range_max</b> value must be greater than the <b>port_range_min</b> value. When the ICMP protocol is used, if you specify the ICMP code ( <b>port_range_max</b> ), you must also specify the ICMP type ( <b>port_range_min</b> ).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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"
      }
    ]
  }
}
```

```
{
  "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"
},
"created_at": "2018-09-20T02:15:34",
"updated_at": "2018-09-20T02:15:34"
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 6.7.4 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 6-183** Request parameter

Parameter	Type	Mandatory	Description
security_group	security_group object	Yes	Specifies the security group. For details, see <a href="#">Table 6-184</a> . You must specify at least one attribute when updating a security group.

**Table 6-184 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 6-185** Response parameter

Parameter	Type	Description
security_group	<a href="#">security_group</a> object	Specifies the security group objects. For details, see <a href="#">Table 6-186</a> .

**Table 6-186 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 <a href="#">Security Group Rule</a> objects	Specifies the security group rule list. For details, see <a href="#">Table 6-187</a> .



Attribute	Type	Description
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 6-187 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.
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 <b>port_range_max</b> and <b>port_range_min</b> must be specified, and the <b>port_range_max</b> value must be greater than the <b>port_range_min</b> value. When the ICMP protocol is used, if you specify the ICMP code ( <b>port_range_max</b> ), you must also specify the ICMP type ( <b>port_range_min</b> ).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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"
      }
    ]
  }
}
```

```
{
  "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"
},
"created_at": "2018-09-20T02:15:34",
"updated_at": "2018-09-20T02:16:31"
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 6.7.5 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](#).

## 6.7.6 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 6-188](#) describes the parameters.

**Table 6-188** Parameter description

Name	Mandato ry	Type	Description
id	No	String	Specifies that the security group rule ID is used as the filtering condition.
description	No	String	Specifies that the description is used as the filtering condition.
remote_group_i d	No	String	Specifies the ID of the remote security group associated with the security group rule is used as the filtering condition.
security_group_i d	No	String	Specifies the ID of the corresponding security group is used as the filtering condition.

Name	Mandatory	Type	Description
direction	No	String	Specifies the security group rule direction is used as the filtering condition. The value can be <b>ingress</b> or <b>egress</b> .
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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (<math>2^{31}-1</math>). The default value is 2000.</p> <p><b>limit</b> can be used together with <b>marker</b>. For details, see the parameter description of <b>marker</b>.</p>

## Request Parameters

None

## Example Request

GET https://{Endpoint}/v2.0/security-group-rules

## Response Parameters

**Table 6-189** Response parameter

Parameter	Type	Description
security_group_rules	Array of <b>Security Group Rule</b> objects	Specifies the security group rule list. For details, see <a href="#">Table 6-190</a> .
security_group_rules_links	Array of <b>SecurityGroupRulesLink</b> objects	Shows pagination information about security group rules. Only when <b>limit</b> is used for filtering and the number of resources exceeds the value of <b>limit</b> or 2000 (default value of <b>limit</b> ), value <b>next</b> will be returned for <b>rel</b> and a link for <b>href</b> .

**Table 6-190** 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 <b>port_range_max</b> and <b>port_range_min</b> must be specified, and the <b>port_range_max</b> value must be greater than the <b>port_range_min</b> value.  When the ICMP protocol is used, if you specify the ICMP code ( <b>port_range_max</b> ), you must also specify the ICMP type ( <b>port_range_min</b> ).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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 6-191 SecurityGroupRulesLink** 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_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_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_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"
}
],
"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](#).

## 6.7.7 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 6-192 Response parameter

Parameter	Type	Description
security_group_rule	<a href="#">security_group_rule</a> object	Specifies the security group rule. For details, see <a href="#">Table 6-193</a> .

Table 6-193 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 <b>port_range_max</b> and <b>port_range_min</b> must be specified, and the <b>port_range_max</b> value must be greater than the <b>port_range_min</b> value. When the ICMP protocol is used, if you specify the ICMP code ( <b>port_range_max</b> ), you must also specify the ICMP type ( <b>port_range_min</b> ).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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": 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"
  }
}

```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 6.7.8 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 6-194** Request parameter

Parameter	Type	Mandatory	Description
security_group_rule	<a href="#">security_group_rule</a> object	Yes	Specifies the security group rule. For details, see <a href="#">Table 6-195</a> .

**Table 6-195** 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 <b>remote_ip_prefix</b> .

Attribute	Mandatory	Type	Description
direction	Yes	String	Specifies the direction of the traffic for which the security group rule takes effect. The value can be <b>ingress</b> or <b>egress</b> .
remote_ip_prefix	No	String	Specifies the peer IP address segment. This parameter is mutually exclusive with <b>remote_group_id</b> .
protocol	No	String	Specifies the protocol type or the IP protocol number. The value can be <b>tcp</b> , <b>udp</b> , <b>icmp</b> or an IP protocol number
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 <b>port_range_max</b> and <b>port_range_min</b> must be specified, and the <b>port_range_max</b> value must be greater than the <b>port_range_min</b> value. When the ICMP protocol is used, if you specify the ICMP code ( <b>port_range_max</b> ), you must also specify the ICMP type ( <b>port_range_min</b> ). 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 <b>IPv4</b> or <b>IPv6</b> .

## 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 6-196** Response parameter

Parameter	Type	Description
security_group_rule	<a href="#">security_group_rule</a> object	Specifies the security group rule. For details, see <a href="#">Table 6-197</a> .

**Table 6-197** 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.
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 <b>port_range_max</b> and <b>port_range_min</b> must be specified, and the <b>port_range_max</b> value must be greater than the <b>port_range_min</b> value.  When the ICMP protocol is used, if you specify the ICMP code ( <b>port_range_max</b> ), you must also specify the ICMP type ( <b>port_range_min</b> ).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .
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": "6f9e9263116a4b68818cf1edce16bc4f",
    "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": "6f9e9263116a4b68818cf1edce16bc4f",
    "created_at": "2018-09-20T02:15:34",
    "updated_at": "2018-09-20T02:15:34"
  }
}
```

```
}  
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 6.7.9 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](#).



# 7 Permissions Policies and Supported Actions

## 7.1 VPC

Permission	API	Action	IAM Project	Enterprise 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 VPCs.	GET /v1/{project_id}/vpcs	vpc:vpcs:list	√	√
Updates a VPC.	PUT /v1/{project_id}/vpcs/{vpc_id}	vpc:vpcs:update	√	√
Deletes a VPC.	DELETE /v1/{project_id}/vpcs/{vpc_id}	vpc:vpcs:delete	√	√

## 7.2 Subnet

Permission	API	Action	IAM Project	Enterprise 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	√	√

Permission	API	Action	IAM Project	Enterprise Project
Queries subnets.	GET /v1/{project_id}/subnets	vpc:subnets:get	√	√
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	√	√

## 7.3 Port

Permission	API	Action	IAM Project	Enterprise 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	√	√

## 7.4 VPC Peering Connection

Permission	API	Action	IAM Project	Enterprise Project
Querying VPC peering connections	GET /v2.0/vpc/peerings	vpc:peerings:get	√	×

Permission	API	Action	IAM Project	Enterprise 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	√	×

## 7.5 Quota

Per mission	API	Action	IAM Project	Enterprise Project
Quer ies quotas.	GET /v1/{project_id}/quotas	vpc:quotas:lis t	√	×

## 7.6 Private IP Address

Permis sion	API	Action	IAM Project	Enterprise Project
Assign s a private IP address.	POST /v1/{project_id}/privateips	vpc:privateips:cre ate	√	×
Querie s a private IP address.	GET /v1/{project_id}/privateips/{privateip_id}	vpc:privateips:ge t	√	×
Querie s private IP addresses.	GET /v1/{project_id}/subnets/{subnet_id}/privateips	vpc:privateips:list	√	×
Delete s a private IP address.	DELETE /v1/{project_id}/privateips/{privateip_id}	vpc:privateips:del ete	√	×

## 7.7 Security Group

Permission	API	Action	IAM Project	Enterprise Project
Creates a security group.	POST /v1/{project_id}/security-groups	vpc:securityGroups:create	√	√
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	√	√

## 7.8 Security Group Rule

Permission	API	Action	IAM Project	Enterprise 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_group_id}	vpc:securityGroupRules:get	√	√
Queries security group rules.	GET /v1/{project_id}/security-group-rules	vpc:securityGroupRules:get	√	√

Permission	API	Action	IAM Project	Enterprise Project
Delete a security group rule.	DELETE /v1/{project_id}/security-group-rules/{rules_security_groups_id}	vpc:securityGroupRules:delete	√	√
Update a security group rule.	-	vpc:securityGroupRules:update	√	√

## 7.9 VPC Tags

Permission	API	Action	IAM Project	Enterprise Project
Creating a Tag for a VPC	POST /v2.0/{project_id}/vpcs/{vpc_id}/tags	vpc:vpcTags:create	√	×
Querying VPC Tags	GET /v2.0/{project_id}/vpcs/{vpc_id}/tags	vpc:vpcTags:get	√	×
Deleting a VPC Tag	DELETE /v2.0/{project_id}/vpcs/{vpc_id}/tags/{key}	vpc:vpcTags:delete	√	×
Batch Creating or Deleting VPC Tags	POST /v2.0/{project_id}/vpcs/{vpc_id}/tags/action	vpc:vpcTags:create vpc:vpcTags:delete	√	×
Querying VPCs by Tag	POST /v2.0/{project_id}/vpcs/resource_instances/action	vpc:vpcTags:get	√	×
Querying VPC Tags in a Specified Project	GET /v2.0/{project_id}/vpcs/tags	vpc:vpcTags:get	√	×

## 7.10 Subnet Tags

Permission	API	Action	IAM Project	Enterprise Project
Creating a Tag for a Subnet	POST /v2.0/{project_id}/subnets/{subnet_id}/tags	vpc:subnetTags:create	√	×
Querying Subnet Tags	GET /v2.0/{project_id}/subnets/{subnet_id}/tags	vpc:subnetTags:get	√	×
Deleting a Subnet Tag	DELETE /v2.0/{project_id}/subnets/{subnet_id}/tags/{key}	vpc:subnetTags:delete	√	×
Batch Creating or Deleting Subnet Tags	POST /v2.0/{project_id}/subnets/{subnet_id}/tags/action	vpc:subnetTags:create vpc:subnetTags:delete	√	×
Querying Subnets by Tag	POST /v2.0/{project_id}/subnets/resource_instances/action	vpc:subnetTags:get	√	×
Querying Subnet Tags in a Specified Project	GET /v2.0/{project_id}/subnets/tags	vpc:subnetTags:get	√	×

## 7.11 Port (OpenStack Neutron API)

Permission	API	Action	IAM Project	Enterprise Project
Queries ports.	GET /v2.0/ports	vpc:ports:get	√	×

Permission	API	Action	IAM Project	Enterprise Project
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	√	×

## 7.12 Network (OpenStack Neutron API)

Permission	API	Action	IAM Project	Enterprise 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	√	×



## 7.13 Subnet (OpenStack Neutron API)

Permission	API	Action	IAM Project	Enterprise 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	√	×

## 7.14 Router (OpenStack Neutron API)

Permission	API	Action	IAM Project	Enterprise 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"> <li>vpc:routers:addinterface</li> <li>vpc:routers:get</li> </ul>	√	×

Permission	API	Action	IAM Project	Enterprise Project
Removes an interface from a router.	PUT /v2.0/routers/{router_id}/remove_router_interface	<ul style="list-style-type: none"> <li>vpc:routers:removeInterface</li> <li>vpc:routers:get</li> </ul>	√	×

## 7.15 Network ACL (OpenStack Neutron API)

Permission	API	Action	IAM Project	Enterprise 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	√	×
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	√	×

Permission	API	Action	IAM Project	Enterprise Project
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"> <li>vpc:firewallPolicies:addRule</li> <li>vpc:firewallPolicies:get</li> </ul>	√	×
Removes a network ACL rule.	PUT /v2.0/fwaas/firewall_policies/{firewall_policy_id}/remove_rule	<ul style="list-style-type: none"> <li>vpc:firewallPolicies:removeRule</li> <li>vpc:firewallPolicies:get</li> </ul>	√	×
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	√	×

## 7.16 Security Group (OpenStack Neutron API)

Permission	API	Action	IAM Project	Enterprise 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	√	×

Permission	API	Action	IAM Project	Enterprise Project
Queries details about a security group rule.	GET /v2.0/security-group-rules/{rules_security_group_s_id}	vpc:securityGroup Rules:get	√	×
Creates a security group rule.	POST /v2.0/security-group-rules	vpc:securityGroup Rules:create	√	×
Deletes a security group rule.	DELETE /v2.0/security-group-rules/{rules_security_group_s_id}	vpc:securityGroup Rules:delete	√	×

## 7.17 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.

# 8 Out-of-Date APIs

---

## 8.1 Port (Discarded)

### 8.1.1 Creating a Port (Discarded)

#### Function

This API is used to create a port.

#### URI

POST /v1/ports

#### Request Message

- Request parameter

**Table 8-1** Request parameter

Name	Mandatory	Type	Description
port	Yes	<a href="#">port</a> object	Specifies the port objects. For details, see <a href="#">Table 8-2</a> .

**Table 8-2** Description of the **port** field

Name	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none"> <li>Specifies the port name.</li> <li>The value can contain no more than 255 characters. This parameter is left blank by default.</li> </ul>
network_id	Yes	String	<ul style="list-style-type: none"> <li>Specifies the ID of the network to which the port belongs.</li> <li>The network ID must be a real one in the network environment.</li> </ul>
admin_state_up	No	Boolean	<ul style="list-style-type: none"> <li>Specifies the administrative state of the port.</li> <li>The value can only be <b>true</b>, and the default value is <b>true</b>.</li> </ul>
fixed_ips	No	Array of <b>fixed_ip</b> objects	<ul style="list-style-type: none"> <li>Specifies the port IP address. For details, see <a href="#">Table 8-3</a>. For example, the value is <b>"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]</b>.</li> <li>A port supports only one fixed IP address that cannot be changed.</li> </ul>
tenant_id	No	String	Specifies the project ID.
security_groups	No	Array of strings	Specifies the UUID of the security group, for example, <b>"security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]</b> . This is an extended attribute.

Name	Mandatory	Type	Description
allowed_address_pairs	No	Array of <a href="#">allowed_address_pair</a> objects	<ul style="list-style-type: none"> <li>Specifies a set of zero or more allowed address pairs. An address pair consists of an IP address and MAC address. This attribute is extended. For details, see parameter <a href="#">allowed_address_pair</a> in <a href="#">Table 8-4</a>.</li> <li>The IP address cannot be <b>0.0.0.0</b>.</li> <li>Configure a dedicated security group for the port if the parameter <a href="#">allowed_address_pairs</a> has a large CIDR block (subnet mask less than 24).</li> <li>If the value of <a href="#">allowed_address_pairs</a> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> </ul>
extra_dhcp_opts	No	Array of <a href="#">extra_dhcp_opt</a> objects	Specifies the extended option (extended attribute) of DHCP.
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 do not take effect. The default value is <b>true</b> .

**Table 8-3** fixed\_ip object

Name	Mandatory	Type	Description
subnet_id	No	String	<ul style="list-style-type: none"> <li>Specifies the subnet ID.</li> <li>You cannot change the parameter value.</li> </ul>



Name	Mandatory	Type	Description
ip_address	No	String	<ul style="list-style-type: none"> <li>Specifies the port IP address.</li> <li>You cannot change the parameter value.</li> </ul>

**Table 8-4 allow\_address\_pair** object

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

**Table 8-5 extra\_dhcp\_opt** object

Name	Mandatory	Type	Description
opt_name	No	String	Specifies the option name.
opt_value	No	String	Specifies the option value.

- Example request

POST https://{Endpoint}/v1/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 Message

- Response parameter

**Table 8-6** Response parameter

Name	Type	Description
port	<a href="#">port</a> object	Specifies the port objects. For details, see <a href="#">Table 8-7</a> .

**Table 8-7** Description of the **port** field

Name	Type	Description
id	String	Specifies the port ID, which uniquely identifies the port.
name	String	<ul style="list-style-type: none"> <li>• Specifies the port name.</li> <li>• The value can contain no more than 255 characters. This parameter is left blank by default.</li> </ul>
network_id	String	<ul style="list-style-type: none"> <li>• Specifies the ID of the network to which the port belongs.</li> <li>• The network ID must be a real one in the network environment.</li> </ul>
admin_state_up	Boolean	<ul style="list-style-type: none"> <li>• Specifies the administrative state of the port.</li> <li>• The value can only be <b>true</b>, and the default value is <b>true</b>.</li> </ul>
mac_address	String	<ul style="list-style-type: none"> <li>• Specifies the port MAC address.</li> <li>• The system automatically sets this parameter, and you are not allowed to configure the parameter value.</li> </ul>
fixed_ips	Array of <a href="#">fixed_ip</a> objects	<ul style="list-style-type: none"> <li>• Specifies the port IP address. For example, the value is <b>"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]</b>.</li> <li>• A port supports only one fixed IP address that cannot be changed.</li> </ul>

Name	Type	Description
device_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the device to which the port belongs.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>
device_owner	String	<ul style="list-style-type: none"> <li>Specifies the belonged device, which can be the DHCP server, router, load balancer, or Nova.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>
tenant_id	String	Specifies the project ID.
status	String	<ul style="list-style-type: none"> <li>Specifies the port status. The status of a HANA SR-IOV VM port is always <b>DOWN</b>.</li> <li>The value can be <b>ACTIVE</b>, <b>BUILD</b>, or <b>DOWN</b>.</li> </ul>
security_groups	Array of strings	Specifies the security group UUID (extended attribute).
allowed_address_pairs	Array of <a href="#">allow_address_pairs</a> objects	<ul style="list-style-type: none"> <li>Specifies a set of zero or more allowed address pairs. An address pair consists of an IP address and MAC address. This attribute is extended. For details, see parameter <a href="#">allow_address_pair</a> in <a href="#">Table 8-9</a>.</li> <li>The IP address cannot be <b>0.0.0.0</b>.</li> <li>Configure a dedicated security group for the port if the parameter <a href="#">allowed_address_pairs</a> has a large CIDR block (subnet mask less than 24).</li> <li>If the value of <a href="#">allowed_address_pairs</a> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> </ul>

Name	Type	Description
extra_dhcp_opts	Array of <a href="#">extra_dhcp_opt</a> objects	Specifies the extended option (extended attribute) of DHCP. For details, see <a href="#">Table 8-10</a> .
binding:vif_details	Object	Specifies the VIF details. Parameter <b>ovs_hybrid_plug</b> specifies whether the OVS/bridge hybrid mode is used.
binding:profile	Object	<p>Specifies the user-defined settings. This is an extended attribute.</p> <p>Instructions:</p> <ul style="list-style-type: none"> <li>• The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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></li> <li>• The <b>disable_security_groups</b> field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: <code>{"disable_security_groups": true },</code> Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> </ul>

Name	Type	Description
binding:vnic_type	String	<ul style="list-style-type: none"> <li>Specifies the type of the bound vNIC.</li> <li>The value can be <b>normal</b> or <b>direct</b>. Parameter <b>normal</b> indicates software switching. Parameter <b>direct</b> indicates SR-IOV PCIe passthrough, which is not supported.</li> </ul>
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 do not take effect. The default value is <b>true</b> .

**Table 8-8 fixed\_ip** object

Name	Type	Description
subnet_id	String	<ul style="list-style-type: none"> <li>Specifies the subnet ID.</li> <li>You cannot change the parameter value.</li> </ul>
ip_address	String	Specifies the port IP address.

**Table 8-9 allow\_address\_pair** object

Name	Type	Description
ip_address	String	<ul style="list-style-type: none"> <li>Specifies the IP address.</li> <li>You cannot set it to <b>0.0.0.0</b>.</li> <li>Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> </ul>
mac_address	String	Specifies the MAC address.

**Table 8-10 extra\_dhcp\_opt** object

Name	Type	Description
opt_name	String	Specifies the option name.

Name	Type	Description
opt_value	String	Specifies the option value.

- 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",
    "binding:vif_details": {},
    "binding:profile": {},
    "port_security_enabled": true
  }
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 8.1.2 Querying a Port (Discarded)

### Function

This API is used to query a single port.

### URI

GET /v1/ports/{port\_id}

[Table 8-11](#) describes the parameters.

**Table 8-11** Parameter description

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

## Request Message

- Request parameter  
None
- Example request  
GET https://{Endpoint}/v1/ports/d00f9c13-412f-4855-8af3-de5d8c24cd60

## Response Message

- Response parameter

**Table 8-12** Response parameter

Name	Type	Description
port	<b>port</b> object	Specifies the port objects. For details, see <a href="#">Table 8-13</a> .

**Table 8-13** Description of the **port** field

Name	Type	Description
id	String	Specifies the port ID, which uniquely identifies the port.
name	String	<ul style="list-style-type: none"> <li>Specifies the port name.</li> <li>The value can contain no more than 255 characters. This parameter is left blank by default.</li> </ul>
network_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the network to which the port belongs.</li> <li>The network ID must be a real one in the network environment.</li> </ul>
admin_state_up	Boolean	<ul style="list-style-type: none"> <li>Specifies the administrative state of the port.</li> <li>The value can only be <b>true</b>, and the default value is <b>true</b>.</li> </ul>

Name	Type	Description
mac_address	String	<ul style="list-style-type: none"> <li>Specifies the port MAC address.</li> <li>The system automatically sets this parameter, and you are not allowed to configure the parameter value.</li> </ul>
fixed_ips	Array of <a href="#">fixed_ip</a> objects	<ul style="list-style-type: none"> <li>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 <a href="#">Table 8-14</a>.</li> <li>A port supports only one fixed IP address that cannot be changed.</li> </ul>
device_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the device to which the port belongs.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>
device_owner	String	<ul style="list-style-type: none"> <li>Specifies the belonged device, which can be the DHCP server, router, load balancer, or Nova.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>
tenant_id	String	Specifies the project ID.
status	String	<ul style="list-style-type: none"> <li>Specifies the port status. The status of a HANA SR-IOV VM port is always DOWN.</li> <li>The value can be <b>ACTIVE</b>, <b>BUILD</b>, or <b>DOWN</b>.</li> </ul>
security_groups	Array of strings	Specifies the security group UUID (extended attribute).



Name	Type	Description
allowed_address_pairs	Array of <b>allow_address_pair</b> objects	<ul style="list-style-type: none"> <li>• Specifies a set of zero or more allowed address pairs. An address pair consists of an IP address and MAC address. This attribute is extended. For details, see parameter <b>allow_address_pair</b> in <a href="#">Table 8-15</a>.</li> <li>• The IP address cannot be <b>0.0.0.0</b>.</li> <li>• Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> <li>• If the value of <b>allowed_address_pairs</b> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> </ul>
extra_dhcp_opts	Array of <b>extra_dhcp_opt</b> objects	Specifies the extended option (extended attribute) of DHCP. For details, see <a href="#">Table 8-16</a> .
binding:vif_details	Object	Specifies the VIF details. Parameter <b>ovs_hybrid_plug</b> specifies whether the OVS/bridge hybrid mode is used.

Name	Type	Description
binding:profile	Object	<p>Specifies the user-defined settings. This is an extended attribute.</p> <p>Instructions:</p> <ul style="list-style-type: none"> <li>• The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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></li> <li>• The <b>disable_security_groups</b> field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: <code>{"disable_security_groups": true },</code> Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> </ul>
binding:vnic_type	String	<ul style="list-style-type: none"> <li>• Specifies the type of the bound vNIC.</li> <li>• The value can be <b>normal</b> or <b>direct</b>. Parameter <b>normal</b> indicates software switching. Parameter <b>direct</b> indicates SR-IOV PCIe passthrough, which is not supported.</li> </ul>

Name	Type	Description
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 do not take effect. The default value is <b>true</b> .

**Table 8-14 fixed\_ip** object

Name	Type	Description
subnet_id	String	<ul style="list-style-type: none"> <li>Specifies the subnet ID.</li> <li>You cannot change the parameter value.</li> </ul>
ip_address	String	Specifies the port IP address.

**Table 8-15 allow\_address\_pair** object

Name	Type	Description
ip_address	String	<ul style="list-style-type: none"> <li>Specifies the IP address.</li> <li>You cannot set it to <b>0.0.0.0</b>.</li> <li>Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> </ul>
mac_address	String	Specifies the MAC address.

**Table 8-16 extra\_dhcp\_opt** object

Name	Type	Description
opt_name	String	Specifies the option name.
opt_value	String	Specifies the option value.

- 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",  
  "binding:vif_details": {},  
  "binding:profile": {},  
  "port_security_enabled": true  
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 8.1.3 Querying Ports (Discarded)

### Function

This API is used to query ports and to display the ports in a list.

### URI

GET /v1/ports

Example:

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

id={port\_id}&name={port\_name}&admin\_state\_up={is\_admin\_status\_up}&network\_id={network\_id}&mac\_address={port\_mac}&device\_id={port\_device\_id}&device\_owner={device\_owner}&status={port\_status}&fixed\_ips={ip\_address}&fixed\_ips=subnet\_id={subnet\_id}

[Table 8-17](#) describes the parameters.

**Table 8-17** Parameter description

Name	Mandatory	Type	Description
id	No	String	Specifies that the port ID is used as the filter.

Name	Mandatory	Type	Description
name	No	String	<ul style="list-style-type: none"> <li>Specifies that the port name is used as the filter.</li> <li>The value can contain no more than 255 characters.</li> </ul>
admin_state_up	No	Boolean	Specifies that the administrative state is used as the filter.
network_id	No	String	Specifies that the network ID is used as the filter.
mac_address	No	String	Specifies that the MAC address is used as the filter.
device_id	No	String	Specifies that the device ID is used as the filter.
device_owner	No	String	Specifies that the device owner is used as the filter.
status	No	String	<ul style="list-style-type: none"> <li>Specifies that the status is used as the filter.</li> <li>The value can be <b>ACTIVE</b>, <b>BUILD</b>, or <b>DOWN</b>.</li> </ul>

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 <b>limit</b>.</p> <ul style="list-style-type: none"> <li>• If parameters <b>marker</b> and <b>limit</b> are not passed, resource records on the first page will be returned.</li> <li>• If the parameter <b>marker</b> is not passed and the value of parameter <b>limit</b> is set to <b>10</b>, the first 10 resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the value of parameter <b>limit</b> is set to <b>10</b>, the 11th to 20th resource records will be returned.</li> <li>• If the value of the parameter <b>marker</b> is set to the resource ID of the 10th record and the parameter <b>limit</b> is not passed, resource records starting from the 11th records (including 11th) will be returned.</li> </ul>
limit	No	Integer	<p>Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2<sup>31</sup>-1). The default value is 2000.</p> <p><b>limit</b> can be used together with <b>marker</b>. For details, see the parameter description of <b>marker</b>.</p>

Name	Mandatory	Type	Description
fixed_ips	No	String	You can use <b>fixed_ips=ip_address</b> or <b>fixed_ips=subnet_id</b> for filtering.

## Request Message

- Request parameter  
None
- Example request  
GET https://{Endpoint}/v1/ports

## Response Message

- Response parameter

**Table 8-18** Response parameter

Name	Type	Description
ports	Array of <b>port</b> objects	Specifies the port objects. For details, see <a href="#">Table 8-19</a> .

**Table 8-19** Description of the **port** field

Name	Type	Description
id	String	Specifies the port ID, which uniquely identifies the port.
name	String	<ul style="list-style-type: none"> <li>Specifies the port name.</li> <li>The value can contain no more than 255 characters. This parameter is left blank by default.</li> </ul>
network_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the network to which the port belongs.</li> <li>The network ID must be a real one in the network environment.</li> </ul>
admin_state_up	Boolean	<ul style="list-style-type: none"> <li>Specifies the administrative state of the port.</li> <li>The value can only be <b>true</b>, and the default value is <b>true</b>.</li> </ul>

Name	Type	Description
mac_address	String	<ul style="list-style-type: none"> <li>Specifies the port MAC address.</li> <li>The system automatically sets this parameter, and you are not allowed to configure the parameter value.</li> </ul>
fixed_ips	Array of <a href="#">fixed_ip</a> objects	<ul style="list-style-type: none"> <li>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 <a href="#">Table 8-20</a>.</li> <li>A port supports only one fixed IP address that cannot be changed.</li> </ul>
device_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the device to which the port belongs.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>
device_owner	String	<ul style="list-style-type: none"> <li>Specifies the belonged device, which can be the DHCP server, router, load balancer, or Nova.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>
tenant_id	String	Specifies the project ID.
status	String	<ul style="list-style-type: none"> <li>Specifies the port status. The status of a HANA SR-IOV VM port is always DOWN.</li> <li>The value can be <b>ACTIVE</b>, <b>BUILD</b>, or <b>DOWN</b>.</li> </ul>
security_groups	Array of strings	Specifies the security group UUID (extended attribute).



Name	Type	Description
allowed_address_pairs	Array of <a href="#">allow_address_pair</a> objects	<ul style="list-style-type: none"> <li>• Specifies a set of zero or more allowed address pairs. An address pair consists of an IP address and MAC address. This attribute is extended. For details, see parameter <a href="#">allow_address_pair</a> in <a href="#">Table 8-21</a>.</li> <li>• The IP address cannot be <b>0.0.0.0</b>.</li> <li>• Configure a dedicated security group for the port if the parameter <a href="#">allowed_address_pairs</a> has a large CIDR block (subnet mask less than 24).</li> <li>• If the value of <a href="#">allowed_address_pairs</a> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> </ul>
extra_dhcp_opts	Array of <a href="#">extra_dhcp_opt</a> objects	Specifies the extended option (extended attribute) of DHCP. For details, see <a href="#">Table 8-22</a> .
binding:vif_details	Object	Specifies the VIF details. Parameter <a href="#">ovs_hybrid_plug</a> specifies whether the OVS/bridge hybrid mode is used.

Name	Type	Description
binding:profile	Object	<p>Specifies the user-defined settings. This is an extended attribute.</p> <p>Instructions:</p> <ul style="list-style-type: none"> <li>• The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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></li> <li>• The <b>disable_security_groups</b> field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: <code>{"disable_security_groups": true },</code> Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> </ul>
binding:vnic_type	String	<ul style="list-style-type: none"> <li>• Specifies the type of the bound vNIC.</li> <li>• The value can be <b>normal</b> or <b>direct</b>. Parameter <b>normal</b> indicates software switching. Parameter <b>direct</b> indicates SR-IOV PCIe passthrough, which is not supported.</li> </ul>

Name	Type	Description
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 do not take effect. The default value is <b>true</b> .

**Table 8-20 fixed\_ip object**

Name	Type	Description
subnet_id	String	<ul style="list-style-type: none"> <li>Specifies the subnet ID.</li> <li>You cannot change the parameter value.</li> </ul>
ip_address	String	Specifies the port IP address.

**Table 8-21 allow\_address\_pair object**

Name	Type	Description
ip_address	String	<ul style="list-style-type: none"> <li>Specifies the IP address.</li> <li>You cannot set it to <b>0.0.0.0</b>.</li> <li>Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> </ul>
mac_address	String	Specifies the MAC address.

**Table 8-22 extra\_dhcp\_opt object**

Name	Type	Description
opt_name	String	Specifies the option name.
opt_value	String	Specifies the option value.

- 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",
"binding:vif_details": {},
"binding:profile": {},
"port_security_enabled": true
},
{
  "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",
  "binding:vif_details": {},
  "binding:profile": {},
  "port_security_enabled": true
}
]
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 8.1.4 Updating a Port (Discarded)

### Function

This API is used to update a port.

## URI

PUT /v1/ports/{port\_id}

[Table 8-23](#) describes the parameters.

**Table 8-23** Parameter description

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

## Request Message

- Request parameter

**Table 8-24** Request parameter

Name	Mandatory	Type	Description
port	Yes	<a href="#">port</a> object	Specifies the port objects. For details, see <a href="#">Table 8-25</a> .

**Table 8-25** Description of the [port](#) field

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

Name	Mandatory	Type	Description
allowed_address_pairs	No	Array of <a href="#">allowed_address_pairs</a> objects	<ul style="list-style-type: none"> <li>• Specifies a set of zero or more allowed address pairs. An address pair consists of an IP address and MAC address. For details, see parameter <a href="#">allowed_address_pair</a> in <a href="#">Table 8-26</a>.</li> <li>• Constraints:               <ul style="list-style-type: none"> <li>- The IP address cannot be <b>0.0.0.0</b>.</li> <li>- Configure a dedicated security group for the port if the parameter <a href="#">allowed_address_pairs</a> has a large CIDR block (subnet mask less than 24).</li> <li>- If the value of <a href="#">allowed_address_pairs</a> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> <li>- To assign a virtual IP address to an ECS, the IP address configured in <a href="#">allowed_address_pairs</a> must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication.</li> </ul> </li> </ul>
extra_dhcp_opts	No	Array of <a href="#">extra_dhcp_opts</a> objects	Specifies the extended option (extended attribute) of DHCP. For details, see <a href="#">Table 8-27</a> .

**Table 8-26** allow\_address\_pair object

Name	Type	Description
ip_address	String	<ul style="list-style-type: none"> <li>Specifies the IP address.</li> <li>You cannot set it to <b>0.0.0.0</b>.</li> <li>Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li> </ul>
mac_address	String	Specifies the MAC address.

**Table 8-27** extra\_dhcp\_opt object

Name	Mandatory	Type	Description
opt_name	No	String	Specifies the option name.
opt_value	No	String	Specifies the option value.

- Example request

```
{
  "port": {
    "name": "adc"
  }
}
```

## Response Message

- Response parameter

**Table 8-28** Response parameter

Name	Type	Description
port	<b>port</b> object	Specifies the port objects. For details, see <a href="#">Table 8-29</a> .

**Table 8-29** Description of the port field

Name	Type	Description
id	String	Specifies the port ID, which uniquely identifies the port.

Name	Type	Description
name	String	<ul style="list-style-type: none"> <li>Specifies the port name.</li> <li>The value can contain no more than 255 characters. This parameter is left blank by default.</li> </ul>
network_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the network to which the port belongs.</li> <li>The network ID must be a real one in the network environment.</li> </ul>
admin_state_up	Boolean	<ul style="list-style-type: none"> <li>Specifies the administrative state of the port.</li> <li>The value can only be <b>true</b>, and the default value is <b>true</b>.</li> </ul>
mac_address	String	<ul style="list-style-type: none"> <li>Specifies the port MAC address.</li> <li>The system automatically sets this parameter, and you are not allowed to configure the parameter value.</li> </ul>
fixed_ips	Array of <a href="#">fixed_ip</a> objects	<ul style="list-style-type: none"> <li>Specifies the port IP address. For example, the value is <b>"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]</b>.</li> <li>A port supports only one fixed IP address that cannot be changed.</li> </ul>
device_id	String	<ul style="list-style-type: none"> <li>Specifies the ID of the device to which the port belongs.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>
device_owner	String	<ul style="list-style-type: none"> <li>Specifies the belonged device, which can be the DHCP server, router, load balancer, or Nova.</li> <li>The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.</li> </ul>
tenant_id	String	Specifies the project ID.



Name	Type	Description
status	String	<ul style="list-style-type: none"> <li>Specifies the port status. The status of a HANA SR-IOV VM port is always <b>DOWN</b>.</li> <li>The value can be <b>ACTIVE</b>, <b>BUILD</b>, or <b>DOWN</b>.</li> </ul>
security_groups	Array of strings	Specifies the security group UUID (extended attribute).
allowed_address_pairs	Array of <a href="#">allow_address_pairs</a> objects	<ul style="list-style-type: none"> <li>Specifies a set of zero or more allowed address pairs. An address pair consists of an IP address and MAC address. This attribute is extended. For details, see parameter <a href="#">allow_address_pair</a> in <a href="#">Table 8-9</a>.</li> <li>The IP address cannot be <b>0.0.0.0</b>.</li> <li>Configure a dedicated security group for the port if the parameter <a href="#">allowed_address_pairs</a> has a large CIDR block (subnet mask less than 24).</li> <li>If the value of <a href="#">allowed_address_pairs</a> is <b>1.1.1.1/0</b>, the source/destination check is disabled.</li> </ul>
extra_dhcp_opts	Array of <a href="#">extra_dhcp_opt</a> objects	Specifies the extended option (extended attribute) of DHCP. For details, see <a href="#">Table 8-10</a> .
binding:vif_details	Object	Specifies the VIF details. Parameter <a href="#">ovs_hybrid_plug</a> specifies whether the OVS/bridge hybrid mode is used.

Name	Type	Description
binding:profile	Object	<p>Specifies the user-defined settings. This is an extended attribute.</p> <p>Instructions:</p> <ul style="list-style-type: none"> <li>• The <b>internal_elb</b> field is in boolean type and is available to common tenants. Set the value of this parameter to <b>true</b> 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></li> <li>• The <b>disable_security_groups</b> field is in boolean type and is available to common tenants. The default value is <b>false</b>. In high-performance communication scenarios, you can set the parameter value to <b>true</b>, 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 <b>true</b>. Example: <code>{"disable_security_groups": true },</code> Currently, the value can only be set to <b>true</b>. When the value is set to <b>true</b>, the FWaaS function does not take effect.</li> </ul>
binding:vnic_type	String	<ul style="list-style-type: none"> <li>• Specifies the type of the bound vNIC.</li> <li>• The value can be <b>normal</b> or <b>direct</b>. Parameter <b>normal</b> indicates software switching. Parameter <b>direct</b> indicates SR-IOV PCIe passthrough, which is not supported.</li> </ul>

Name	Type	Description
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 do not take effect. The default value is <b>true</b> .

**Table 8-30 fixed\_ip** object

Name	Type	Description
subnet_id	String	<ul style="list-style-type: none"><li>Specifies the subnet ID.</li><li>You cannot change the parameter value.</li></ul>
ip_address	String	Specifies the port IP address.

**Table 8-31 allow\_address\_pair** object

Name	Type	Description
ip_address	String	<ul style="list-style-type: none"><li>Specifies the IP address.</li><li>You cannot set it to <b>0.0.0.0</b>.</li><li>Configure a dedicated security group for the port if the parameter <b>allowed_address_pairs</b> has a large CIDR block (subnet mask less than 24).</li></ul>
mac_address	String	Specifies the MAC address.

**Table 8-32 extra\_dhcp\_opt** object

Name	Type	Description
opt_name	String	Specifies the option name.
opt_value	String	Specifies the option value.

- 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": "caa6cf4337ea47fb823b15709e8e8591",
"device_id": "",
"device_owner": "",
"security_groups": [
    "59b39002-e79b-4bac-8e27-aa884ab1beb6"
],
"extra_dhcp_opts": [],
"allowed_address_pairs": [],
"binding:vnic_type": "normal",
"binding:vif_details": {},
"binding:profile": {},
"port_security_enabled": true
}
```

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

## 8.1.5 Deleting a Port (Discarded)

### Function

This API is used to delete a port.

Restrictions

You are not allowed to delete the port if **device\_owner** is specified.

### URI

DELETE /v1/ports/{port\_id}

[Table 8-33](#) describes the parameters.

**Table 8-33** Parameter description

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

### Request Message

- Request parameter  
None

- Example request  
None

## Response Message

- Response parameter  
None
- Example response  
None

## Status Code

See [Status Codes](#).

## Error Code

See [Error Codes](#).

# 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 (Previously called "Upstream Bandwidth") Unit: bit/s	$\geq 0$ bit/s	Bandwidth or EIP	1 minute
downstream_bandwidth	Inbound Bandwidth	Network rate of inbound traffic (Previously called "Downstream Bandwidth") Unit: bit/s	$\geq 0$ bit/s	Bandwidth or EIP	1 minute

ID	Name	Description	Value Range	Monitored Object	Monitoring Interval (Raw Data)
upstream_bandwidth_usage	Outbound Bandwidth Usage	Usage of outbound bandwidth in the unit of percent. Outbound bandwidth usage = Outbound bandwidth/ Purchased bandwidth	0% to 100%	Bandwidth or EIP	1 minute
up_stream	Outbound Traffic	Network traffic going out of the cloud platform in a minute (Previously called "Upstream Traffic") Unit: byte	≥ 0 bytes	Bandwidth or EIP	1 minute
down_stream	Inbound Traffic	Network traffic going into the cloud platform in a minute (Previously called "Downstream Traffic") 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.
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.
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.

Returned Value	Description
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 <b>availability_zone</b> 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.

Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
	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.

Module	Status Code	Error Code	Message	Description	Handling Measure
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 vpcId 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.
	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.

Module	Status Code	Error Code	Message	Description	Handling Measure
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.
	500	VPC.0102	Delete router fail.	The interface fails to obtain the routing resources.	Contact technical support.

Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
	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.

Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
Deleting a VPC	409	VPC.0109	Router is used not allow deleted.	Failed to delete the VPC because one or more VPNs have been created for it.	Delete VPNs of the tenant.
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.

Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
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.



Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
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.

Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
	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.

Module	Status Code	Error Code	Message	Description	Handling Measure
Deleting a subnet	500	VPC.0206	Subnet has been used by VPN, please remove the subnet from the VPN and try again.	The subnet cannot be deleted because it is being used by the VPN.	Delete the subnet that is used by the VPN.
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.
	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.
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.

Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
	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 privateIps 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.

Module	Status Code	Error Code	Message	Description	Handling Measure
	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	privatelp is in use.	The private IP address is in use.	Check whether the private IP address is being used by other resource.
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.

Module	Status Code	Error Code	Message	Description	Handling Measure
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.
	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.

Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
Creating a security group rule	409	VPC.0602	<p>1.Security group rule already exists.</p> <p>2.Quota exceeded for resources: ['security_group_rule'].</p> <p>3.Failed to create the security group rule concurrently. The rule already exists.</p>	<p>The security group rule already exists.</p> <p>Insufficient security group rule quota.</p> <p>Failed to create the security group rule concurrently. The rule already exists.</p>	<p>Change the request body for creating a security group rule.</p> <p>Delete the security group rule that is no longer required or apply for increasing the quota.</p> <p>Check whether the security group rules created concurrently are different from each other.</p>
Resource tags	400	VPC.1801	resource id is invalid.	Incorrect resource ID.	Use a correct resource ID.
	400	VPC.1801	action is invalid.	Invalid action value.	Ensure that the value of <b>action</b> is <b>create</b> or <b>delete</b> .
	400	VPC.1801	Tag length is invalid. The key length must be in range [1,36] and value in range [0,43]	Invalid key length. The key can contain 1 to 36 characters.	Use a valid key value.

Module	Status Code	Error Code	Message	Description	Handling Measure
	400	VPC.1801	Tag length is invalid. The key length must be in range [1,36] and value in range [0,43]	Invalid value length. The value can contain 0 to 43 characters.	Use a value of valid length.
	400	VPC.1801	Resource_type xxx is invalid.	Incorrect resource type.	Ensure that the value of <b>resource_type</b> is <b>vpcs</b> .
	400	VPC.1801	Tag can not be null.	The tag list contains value null.	Use valid tags.
	400	VPC.1801	The list of matches contains null.	The matches list contains value null.	Use valid matches.
	400	VPC.1801	Tag value can not be null.	The tags exist, but their values are null.	Use valid tags.
	400	VPC.1801	The value of Matches in resourceInstances Req is null.	The matches exist, and the value is null.	Use valid matches.
	400	VPC.1801	number of tags exceeds max num of 10.	The tag list contains more than 10 keys.	Use valid tags.
	400	VPC.1801	Tag key is repeated.	The tag list contains duplicate keys.	Use valid tags.
	400	VPC.1801	Value of tags in resourceInstances Req is duplicate.	There are duplicate tag values in the tag list.	Use valid tags.



Module	Status Code	Error Code	Message	Description	Handling Measure
	400	VPC.1801	number of tags exceeds max num of 10.	The tag in the tag list has more than 10 tag values.	Use valid tags.
	400	VPC.1801	The key of matches is invalid.	The key in <b>matches</b> is not the resource name.	Use valid matches.
	400	VPC.1801	Limit in resourceInstances Req is invalid. Offset in resourceInstances Req is invalid.	Invalid <b>limit</b> or <b>offset</b> value.	Use valid <b>limit</b> and <b>offset</b> values.
	400	VPC.1801	ResourceInstances Req is null or invalid.	The tags dictionary structure is missing.	Use a valid tags dictionary structure.
	400	VPC.1801	Tag length is invalid. The key length must be in range [1,36] and value in range [0,43]	The key in tags exceeds the maximum length or is left blank.	Use valid keys in tags.
	400	VPC.1801	Tag length is invalid. The key length must be in range [1,36] and value in range [0,43]	A value in tags exceeds the maximum length.	Use valid values in tags.
	400	VPC.1801	ResourceInstances Req is null or invalid.	The matches dictionary structure is missing.	Use a valid matches dictionary structure.
	400	VPC.1801	The number of Matches in resourceInstances Req is 0.	The matches are an empty list.	Use a valid matches list.

Module	Status Code	Error Code	Message	Description	Handling Measure
	400	VPC.1801	The value's length of Matches in resourceInstancesReq is more than 255.	The matches list contains tag values that contain more than 255 Unicode characters.	Use a valid matches list.
	500	VPC.1801	InvalidInput	Incorrect request body format.	Use the correct request body format.
	404	VPC.2204	Query subnet by id fail.	The resource does not exist or the permission is insufficient.	Use an existing resource or obtain required permission.
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.
	404	VPC.3002	Port/Network/Vpc xxx could not be found.	The resource does not exist.	Check whether the resource exists.

Module	Status Code	Error Code	Message	Description	Handling Measure
	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
2022-06-07	<p>This release incorporates the following changes:</p> <p>Added description about IPv6.</p> <ul style="list-style-type: none"><li>• Added descriptions about parameters <b>ipv6_enable</b>, <b>cidr_v6</b>, <b>gateway_ip_v6</b> and <b>neutron_subnet_id_v6</b> in sections <a href="#">Creating a Subnet</a> to <a href="#">Updating Subnet Information</a>.</li><li>• Modified description about the <b>protocol</b> parameter in sections <a href="#">Creating a Security Group</a> and <a href="#">Creating a Security Group Rule</a>.</li><li>• Added descriptions about parameters <b>ipv6_address_mode</b> and <b>ipv6_ra_mode</b> in sections <a href="#">Querying a Subnet</a> to <a href="#">Updating a Subnet</a>.</li></ul>
2022-04-12	<p>This issue is the first official release.</p>