Virtual Private Cloud

API Reference

Issue	01
Date	2025-10-30

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1 Before You Start

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

VPC supports Representational State Transfer (REST) APIs, allowing you to call APIs using HTTPS.

For details about API calling, see **Calling APIs**.

Additionally, VPCs offer software development kits (SDKs) for multiple programming languages. For details about how to use SDKs, log in at **Huawei Cloud SDKs**.

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**.

You need to select an endpoint based on your service requirements.

Concepts

- Account

  An account is created upon successful signing up. The account has full access permissions for all of its cloud services and resources. It can be used to reset user passwords and grant user permissions. The account is a payment entity, which should not be used directly to perform routine management. For security purposes, create Identity and Access Management (IAM) users and grant them permissions for routine management.
- User

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An IAM user is created by an account in IAM to use cloud services. Each IAM user has its own identity credentials (password and access keys).

API authentication requires information such as the account name, username, and password.

- Region

  Regions are divided based on geographical location and network latency. Public services, such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP (EIP), and Image Management Service (IMS), are shared within the same region. Regions are classified into universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides specific services for specific tenants.

  For details, see **Region and AZ**.

- AZ

  An AZ comprises of one or more physical data centers equipped with independent ventilation, fire, water, and electricity facilities. Computing, network, storage, and other resources in an AZ are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to allow you to build cross-AZ high-availability systems.

- Project

  A project corresponds to a region. Default projects are defined. Users can be granted permissions in a default project to access all resources under their accounts in the region associated with the project. If you need more refined access control, create subprojects under a default project and create resources in subprojects. Then you can assign users the permissions required to access only the resources in the specific subprojects.

- Enterprise Project

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

  For details about enterprise projects and about how to obtain enterprise project IDs, see ***Enterprise Management User Guide***.

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)**

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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.

VPC APIs

Table 2-1 API description

Type	Description
Virtual Private Cloud	APIs for creating, querying, updating, and deleting VPCs
Subnet	APIs for creating, querying, updating, and deleting subnets
Quota	API for querying quota values
Private IP Address	APIs for assigning, querying, and releasing private IP addresses
Security Group	• APIs for creating, querying, and deleting security groups • APIs for creating, querying, and deleting security group rules
Port	APIs for creating, querying, updating, and deleting ports
VPC Peering Connection	• APIs for creating, querying, updating, and deleting VPC peering connections • APIs for accepting and rejecting VPC peering connection requests
VPC Route	APIs for creating, querying, and deleting VPC routes
VPC Tag Management	• APIs for adding tags to VPCs, as well as querying and deleting VPC tags • APIs for adding tags to subnets as well as querying and deleting subnet tags

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3 Calling APIs

3.1 Making an API Request

This section describes the structure of a REST API request, and uses the IAM API for **creating an IAM user** as an example to demonstrate how to call an API.

Request URI

A request URI is in the following format:

{URI-scheme}://{Endpoint}/{resource-path}?{query-string}

Although a request URI is included in the request header, most programming languages or frameworks require the request URI to be transmitted separately.

Table 3-1 URI parameter description

Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from "Regions and Endpoints". For example, the endpoint of IAM in region **Dublin** is **iam.myhuaweicloud.eu**.
resource-path	Access path of an API for performing a specified operation. Obtain the path from the URI of an API. For example, the **resource-path** of the API used to obtain a user token is **/v3/auth/tokens**.
query-string	Query parameter, which is optional. Ensure that a question mark (?) is included before each query parameter that is in the format of *Parameter name*=*Parameter value*. For example, **?limit=10** indicates that a maximum of 10 data records will be displayed.

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IAM is a global service. You can create an IAM user using the endpoint of IAM in any region. For example, to create an IAM user in the **EU-Dublin** region, obtain the endpoint of IAM (**iam.myhuaweicloud.eu**) for this region and the **resource-path** (**/v3.0/OS-USER/users**) in the URI of the API for **creating an IAM user**. Then construct the URI as follows:

```
https://iam.myhuaweicloud.eu/v3.0/OS-USER/users
```

NOTE

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

Request Methods

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

Table 3-2 HTTP methods

Method	Description
GET	Requests the server to return specified resources.
PUT	Requests the server to update specified resources.
POST	Requests the server to add resources or perform special operations.
DELETE	Requests the server to delete specified resources, for example, an object.
HEAD	Same as GET except that the server must return only the response header.
PATCH	Requests the server to update partial content of a specified resource. If the resource does not exist, a new resource will be created.

For example, in the case of the API for **creating an IAM user**, the request method is **POST**. An example request is as follows:

```
POST https://iam.myhuaweicloud.eu/v3.0/OS-USER/users
```

Request Header

You can also add additional header fields to a request, such as the fields required by a specified URI or HTTP method. For example, to request for the authentication information, add **Content-Type**, which specifies the request body type.

Common request header fields are as follows.

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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 *Hostname:Port number*. If the port number is not specified, the default port is used. The default port number for **https** is **443**.	No This field is mandatory for AK/SK authentication.	code.test.com or code.test.com:443
Content-Type	Specifies the type (or format) of the message body. The default value **application/json** is recommended. Other values of this field will be provided for specific APIs if any.	Yes	application/json
Content-Length	Specifies the length of the request body. The unit is byte.	No	3495
X-Project-Id	Specifies the project ID. Obtain the project ID by following the instructions in **Obtaining a Project ID**.	No This field is mandatory for requests that use AK/SK authentication in the Dedicated Cloud (DeC) scenario or multi-project scenario.	e9993fc787d94b6c886cbaa340f9c0f4

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

NOTE

In addition to supporting authentication using tokens, APIs support authentication using AK/SK, which uses SDKs to sign a request. During the signature, the **Authorization** (signature authentication) and **X-Sdk-Date** (time when a request is sent) headers are automatically added in the request.

For more details, see "Authentication Using AK/SK" in **Authentication**.

The following shows an example request of the API for **creating an IAM user** when AK/SK authentication is used:

```
POST https://iam.myhuaweicloud.eu/v3.0/OS-USER/users
Content-Type: application/json
X-Sdk-Date: 20240416T095341Z
Authorization: SDK-HMAC-SHA256 Access=**********, SignedHeaders=content-type;host;x-sdk-date,
Signature=**********
```

(Optional) Request Body

This part is optional. A request body is generally sent in a structured format (for example, JSON or XML), which is specified by **Content-Type** in the request header. It is used to transfer content other than the request header. If the request body contains full-width characters, these characters must be coded in UTF-8.

The request body varies depending on APIs. Certain APIs do not require the request body, such as the APIs requested using the GET and DELETE methods.

The following shows an example request (a request body included) of the API for **creating an IAM user**. You can learn about request parameters and related description from this example. The bold parameters need to be replaced for a real request.

- **accountid**: account ID of an IAM user
- **username**: name of an IAM user
- **email**: email of an IAM user
- **password**: login password of an IAM user

```
POST https://iam.myhuaweicloud.eu/v3.0/OS-USER/users
Content-Type: application/json
```

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```
X-Sdk-Date: 20240416T095341Z
Authorization: SDK-HMAC-SHA256 Access=**********, SignedHeaders=content-type;host;x-sdk-date,
Signature=**********

{
    "user": {
        "domain_id": "accountid",
        "name": "username",
        "password": "**********",
        "email": "email",
        "description": "IAM User Description"
    }
}
```

If all data required for the API request is available, you can send the request to call the API through **curl**, **Postman**, or coding.

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 a 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": "xxxxxxxx"    // Project name
         }
```

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```
    }
  }
}
```

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:

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

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.
- The AK/SK can either be permanent or temporary. If it is temporary, the **X-Security-Token** field must be included in the request header. The value is the security token of the temporary AK/SK.

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 **create an IAM user**, the request is successful.

Response Header

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

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

NOTE

For security purposes, you are advised to set the token in ciphertext in configuration files or environment variables and decrypt it when using it.

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

```
"X-Frame-Options": "SAMEORIGIN",
"X-IAM-ETag-id": "2562365939-d8f6f12921974cb097338ac11fceac8a",
"Transfer-Encoding": "chunked",
"Strict-Transport-Security": "max-age=31536000; includeSubdomains;",
"Server": "api-gateway",
"X-Request-Id": "af2953f2bcc67a42325a69a19e6c32a2",
"X-Content-Type-Options": "nosniff",
"Connection": "keep-alive",
"X-Download-Options": "noopen",
"X-XSS-Protection": "1; mode=block;",
"X-IAM-Trace-Id": "token_[redacted]_null_af2953f2bcc67a42325a69a19e6c32a2",
"Date": "Tue, 21 May 2024 09:03:40 GMT",
"Content-Type": "application/json; charset=utf8"
```

(Optional) Response Body

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

The following shows part of the response body for the API used to **create an IAM user**.

```
{
    "user": {
        "id": "c131886aec...",
        "name": "IAMUser",
        "description": "IAM User Description",
        "areacode": "",
        "phone": "",
        "email": "***@***.com",
        "status": null,
        "enabled": true,
        "pwd_status": false,
        "access_mode": "default",
        "is_domain_owner": false,
        "xuser_id": "",
        "xuser_type": "",
        "password_expires_at": null,
        "create_time": "2024-05-21T09:03:41.000000",
        "domain_id": "d78cbac1.....",
        "xdomain_id": "30086000.....",
        "xdomain_type": "",
        "default_project_id": null
    }
}
```

If an error occurs during API calling, an error code and a message will be displayed. The following shows an error response body.

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```
{
    "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.

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4 VPC APIs (V1/V2)

4.1 Virtual Private Cloud

4.1.1 Creating a VPC

Function

This API is used to create a VPC.

URI

POST /v1/{project_id}/vpcs

Table 4-1 describes the parameters.

Table 4-1 Parameter description

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

Request Parameters

Table 4-2 Request parameter

Parameter	Mandatory	Type	Description
vpc	Yes	**vpc** object	**Specifies the VPC objects.**

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Table 4-3 VPC objects

Parameter	Mandatory	Type	Description
name	No	String	• Specifies the VPC name. • The value can contain no more than 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). • Each VPC name of a tenant must be unique if the VPC name is not left blank.
description	No	String	• Provides supplementary information about the VPC. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	No	String	• Specifies the available IP address ranges for subnets in the VPC. • Range: – 10.0.0.0/8-24 – 172.16.0.0/12-24 – 192.168.0.0/16-24 • If **cidr** is not specified, the default value is left blank. • The value must be in CIDR format, for example, **192.168.0.0/16**.
enterprise_project_id	No	String	• Specifies the enterprise project ID. When creating a VPC, you can associate an enterprise project ID with the VPC. • The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. **NOTE**

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"
```

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```
  }
}
```

Response Parameters

Table 4-4 Response parameter

Parameter	Type	Description
vpc	**vpc** object	**Specifies the VPC objects.**

Table 4-5 VPC objects

Parameter	Type	Description
id	String	Specifies a resource ID in UUID format.
name	String	• Specifies the VPC name. • The value can contain no more than 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). • Each VPC name of a tenant must be unique if the VPC name is not left blank.
description	String	• Provides supplementary information about the VPC. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	• Specifies the available IP address ranges for subnets in the VPC. • Range: – 10.0.0.0/8-24 – 172.16.0.0/12-24 – 192.168.0.0/16-24 • If **cidr** is not specified, the default value is left blank. • The value must be in CIDR format, for example, **192.168.0.0/16**.
status	String	• Specifies the VPC status. • Range: – **CREATING**: The VPC is being created. – **OK**: The VPC is created successfully.
routes	Array of **route** objects	• Specifies the route information. • For details, see the description of the **route objects**.

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Parameter	Type	Description
enterprise_project_id	String	• Specifies the enterprise project ID. • The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. **NOTE**
tenant_id	String	• Project ID
created_at	String	• Specifies the time (UTC) when the VPC is created. • Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	• Specifies the time (UTC) when the VPC is updated. • Format: *yyyy-MM-ddTHH:mm:ss*

Table 4-6 route objects

Parameter	Type	Description
destination	String	• Specifies the destination CIDR block of a route. • Constraints: The value must be in the CIDR format. IPv4 and IPv6 CIDR formats are supported.
nexthop	String	• Specifies the next hop of a route. • The value must be an IP address from the subnet of the VPC. IPv4 and IPv6 addresses are supported.

Example Response

```
{
 "vpc":
    {
    "id": "99d9d709-8478-4b46-9f3f-2206b1023fd3",
    "name": "vpc",
    "description": "test",
    "cidr": "192.168.0.0/16",
    "status": "CREATING",
    "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2",
    "routes": [],
    "tenant_id": "087679f0aa80d32a2f4ec0172f5e902b",
    "created_at": "2022-12-15T02:25:11",
    "updated_at": "2022-12-15T02:25:11"
    }
}
```


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Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.1.2 Querying VPC Details

Function

This API is used to query details about a VPC.

URI

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

Table 4-7 describes the parameters.

Table 4-7 Parameter description

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

Request Parameters

None

Example Request

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

Response Parameters

Table 4-8 Response parameter

Parameter	Type	Description
vpc	**vpc** object	**Specifies the VPC objects.**

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Table 4-9 VPC objects

Parameter	Type	Description
id	String	Specifies a resource ID in UUID format.
name	String	• Specifies the VPC name. • The value can contain no more than 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). • Each VPC name of a tenant must be unique if the VPC name is not left blank.
description	String	• Provides supplementary information about the VPC. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	• Specifies the available IP address ranges for subnets in the VPC. • Range: – 10.0.0.0/8-24 – 172.16.0.0/12-24 – 192.168.0.0/16-24 • If **cidr** is not specified, the default value is left blank. • The value must be in CIDR format, for example, **192.168.0.0/16**.
status	String	• Specifies the VPC status. • Possible values are as follows: – **CREATING**: The VPC is being created. – **OK**: The VPC is created successfully.
routes	Array of **route** objects	• Specifies the route information. • For details, see the description of the **route objects**.
enterprise_project_id	String	• Enterprise project ID • The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. **NOTE**
tenant_id	String	• Project ID
created_at	String	• Time (UTC) when the VPC is created. • Format: *yyyy-MM-ddTHH:mm:ss*

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Parameter	Type	Description
updated_at	String	• Specifies the time (UTC) when the VPC is updated. • Format: *yyyy-MM-ddTHH:mm:ss*

Table 4-10 route objects

Parameter	Type	Description
destination	String	• Specifies the destination network segment of a route. • Constraints: The value must be in the CIDR format. IPv4 and IPv6 CIDR formats are supported.
nexthop	String	• Specifies the next hop of a route. • The value must be an IP address from the subnet of the VPC. IPv4 and IPv6 addresses are supported.

Example Response

```
{
    "vpc": {
        "id": "99d9d709-8478-4b46-9f3f-2206b1023fd3",
        "name": "vpc",
        "description": "test",
        "cidr": "192.168.0.0/16",
        "status": "OK",
        "enterprise_project_id": "0" ,
        "routes": [],
        "tenant_id": "087679f0aa80d32a2f4ec0172f5e902b",
        "created_at": "2022-12-15T02:25:11",
        "updated_at": "2022-12-15T02:25:11"
}
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.1.3 Querying VPCs

Function

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

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URI

GET /v1/{project_id}/vpcs

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

Table 4-11 describes the parameters.

Table 4-11 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
id	No	String	Specifies the VPC ID that is used as the filtering condition.
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.

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Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.
enterprise_project_id	No	String	• Specifies the enterprise project ID that is used to filter out the VPCs associated with a specified enterprise project. • The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. To obtain the VPCs bound to all enterprise projects of the user, set **all_granted_eps**.

Request Parameters

None

Example Request

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

Response Parameters

Table 4-12 Response parameter

Parameter	Type	Description
vpcs	Array of **vpc** objects	Specifies the **VPC objects**.

Table 4-13 VPC objects

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

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Parameter	Type	Description
name	String	• Specifies the VPC name. • The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). • Each VPC name of a tenant must be unique if the VPC name is not left blank.
description	String	• Provides supplementary information about the VPC. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	• Specifies the available IP address ranges for subnets in the VPC. • Range: – 10.0.0.0/8-24 – 172.16.0.0/12-24 – 192.168.0.0/16-24 • If **cidr** is not specified, the value is left blank by default. • If **cidr** is specified, the value must be in CIDR format, for example, **192.168.0.0/16**.
status	String	• Specifies the VPC status. • Possible values are as follows: – **CREATING**: The VPC is being created. – **OK**: The VPC is created.
enterprise_project_id	String	• Specifies the enterprise project ID. • The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. **NOTE**
routes	Array of **route** objects	• Specifies the route information. • For details, see **Table 4-14**.
tenant_id	String	• Project ID
created_at	String	• Specifies the time (UTC) when the VPC is created. • Format: *yyyy-MM-ddTHH:mm:ss*

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Parameter	Type	Description
updated_at	String	• Specifies the time (UTC) when the VPC is updated. • Format: *yyyy-MM-ddTHH:mm:ss*

Table 4-14 route objects

Parameter	Type	Description
destination	String	• Specifies the destination CIDR block of a route. • Constraints: The value must be in the CIDR format. IPv4 and IPv6 CIDR formats are supported.
nexthop	String	• Specifies the next hop of a route. • The value must be an IP address from the subnet of the VPC. IPv4 and IPv6 addresses are supported.

Example Response


```
{
   "vpcs": [
      {
         "id": "13551d6b-755d-4757-b956-536f674975c0",
         "name": "default",
         "description": "test",
         "cidr": "172.16.0.0/16",
         "status": "OK",
,
         "routes": [],
         "tenant_id": "087679f0aa80d32a2f4ec0172f5e902b",
         "created_at": "2022-12-15T02:11:13",
         "updated_at": "2022-12-15T02:11:13"
      },
      {
         "id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",
         "name": "222",
         "description": "test",
         "cidr": "192.168.0.0/16",
         "status": "OK",
,
         "routes": [],
         "tenant_id": "087679f0aa80d32a2f4ec0172f5e902b",
         "created_at": "2022-12-15T04:01:21",
         "updated_at": "2022-12-15T04:01:21"
      },
      {
         "id": "99d9d709-8478-4b46-9f3f-2206b1023fd3",
         "name": "vpc",
         "description": "test",
         "cidr": "192.168.0.0/16",
         "status": "OK",
         "enterprise_project_id": "0",
         "routes": [],
```


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```
        "tenant_id": "087679f0aa80d32a2f4ec0172f5e902b",
        "created_at": "2022-12-15T05:36:29",
        "updated_at": "2022-12-15T05:36:29"
    }
  ]
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.1.4 Updating a VPC

Function

This API is used to update information about a VPC.

URI

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

Table 4-15 describes the parameters.

Table 4-15 Parameter description

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

Request Parameters

Table 4-16 Request parameter

Parameter	Mandatory	Type	Description
vpc	Yes	**vpc** object	**Specifies the VPC objects.**

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Table 4-17 VPC objects

Parameter	Mandatory	Type	Description
name	No	String	• Specifies the VPC name. • The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). • Each VPC name of a tenant must be unique if the VPC name is not left blank.
description	No	String	• Provides supplementary information about the VPC. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	No	String	• Specifies the available IP address ranges for subnets in the VPC. • Range: – 10.0.0.0/8-24 – 172.16.0.0/12-24 – 192.168.0.0/16-24 • If **cidr** is not specified, the value is left blank by default. • Constraints: – The value must be in CIDR format, for example, **192.168.0.0/16**. – If you want to update the CIDR block of the VPC, the new CIDR block must contain all subnets in the VPC.
routes	No	Array of **route** objects	• Specifies the route list. For details, see **Table 4-18**.

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Table 4-18 route objects

Parameter	Mandatory	Type	Description
destination	No	String	• Specifies the destination CIDR block of a route. • Constraints: The value must be in the CIDR format. IPv4 and IPv6 CIDR formats are supported.
nexthop	No	String	• Specifies the next hop of a route. • The value must be an IP address from the subnet of the VPC. IPv4 and IPv6 addresses are supported.

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 4-19 Response parameter

Parameter	Type	Description
vpc	**vpc** object	**Specifies the VPC objects.**

Table 4-20 VPC objects

Parameter	Type	Description
id	String	Specifies a resource ID in UUID format.
name	String	Specifies the VPC name.
description	String	• Provides supplementary information about the VPC. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
cidr	String	• Specifies the available IP address ranges for subnets in the VPC. • Range: – 10.0.0.0/8-24 – 172.16.0.0/12-24 – 192.168.0.0/16-24 • If **cidr** is not specified, the default value is left blank. • The value must be in CIDR format, for example, **192.168.0.0/16**.
status	String	• Specifies the VPC status. • Possible values are as follows: – **CREATING**: The VPC is being created. – **OK**: The VPC is created successfully.
enterprise_project_id	String	• Specifies the enterprise project ID. • The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. **NOTE**
routes	Array of **route** objects	• Specifies the route information. • For details, see the description of the **route objects**.
tenant_id	String	• Project ID
created_at	String	• Specifies the time (UTC) when the VPC is created. • Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	• Specifies the time (UTC) when the VPC is updated. • Format: *yyyy-MM-ddTHH:mm:ss*

Table 4-21 route objects

Parameter	Type	Description
destination	String	• Specifies the destination CIDR block of a route. • Constraints: The value must be in the CIDR format. IPv4 and IPv6 CIDR formats are supported.

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Parameter	Type	Description
nexthop	String	• Specifies the next hop of a route. • The value must be an IP address from the subnet of the VPC. IPv4 and IPv6 addresses are supported.

Example Response

```
{
    "vpc": {
        "id": "99d9d709-8478-4b46-9f3f-2206b1023fd3",
        "name": "vpc1",
        "description": "test1",
        "cidr": "192.168.0.0/16",
        "status": "OK",
        "enterprise_project_id": "0",
        "routes": [],
        "tenant_id": "087679f0aa80d32a2f4ec0172f5e902b",
        "created_at": "2022-12-15T02:25:11",
        "updated_at": "2022-12-15T06:23:15"
    }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.1.5 Deleting a VPC

Function

This API is used to delete a VPC.

URI

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

Table 4-22 describes the parameters.

Table 4-22 Parameter description

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

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Parameter	Mandatory	Description
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**.

4.2 Subnet

4.2.1 Creating a Subnet

Function

This API is used to create a subnet.

URI

POST /v1/{project_id}/subnets

Table 4-23 describes the parameters.

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Table 4-23 Parameter description

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

Request Parameters

Table 4-24 Request parameter

Parameter	Mandatory	Type	Description
subnet	Yes	**subnet** object	Specifies the **subnet objects**.

Table 4-25 subnet objects

Parameter	Mandatory	Type	Description
name	Yes	String	• Specifies the subnet name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	No	String	• Provides supplementary information about the subnet. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	Yes	String	• Specifies the subnet CIDR block. • The value must be within the VPC CIDR block. • The value must be in CIDR format. The subnet mask cannot be greater than 28.
gateway_ip	Yes	String	• Specifies the gateway of the subnet. • The value must be an IP address in the subnet. • The value must be a valid IP address.

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Parameter	Mandatory	Type	Description
ipv6_enable	No	Boolean	• Specifies whether IPv6 is enabled. • The value can be **true** (enabled) or **false** (disabled). • If this parameter is left blank, the system automatically sets it to **false** by default.
dhcp_enable	No	Boolean	• Specifies whether DHCP is enabled for the subnet. • The value can be **true** (enabled) or **false** (disabled). • If this parameter is left blank, the value is set to **true** by default. If this parameter is set to **false**, newly created ECSs cannot obtain IP addresses, and usernames and passwords cannot be injected using Cloud-init.
primary_dns	No	String	• Specifies the primary IP address of DNS server on the subnet. • The value must be an IP address. If the value is not specified, the default value will be left blank.
secondary_dns	No	String	• Specifies the standby IP address of DNS server on the subnet. • The value must be an IP address. If the value is not specified, the default value will be left blank. If only **secondary_dns** is specified and **primary_dns** is not specified, **primary_dns** will automatically use the value of **secondary_dns**. If there is only one DNS server address, only **primary_dns** is displayed.

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Parameter	Mandatory	Type	Description
dnsList	No	Array of strings	• Specifies the DNS server address list of a subnet. This field is required if you need to use more than two DNS servers. • This parameter value is the superset of both DNS server address 1 and DNS server address 2. If the value is not specified, the default value will be left blank.
availability_zone	No	String	• Identifies the AZ that the subnet belongs to, which can be obtained from endpoints. • The value of this parameter is the AZ specified when the subnet is created and does not limit the usage scope of the subnet. If this parameter is not specified, the value will be left blank.
vpc_id	Yes	String	Specifies the ID of the VPC that the subnet belongs to.
extra_dhcp_opts	No	Array of **extra_dhcp_opt** objects	Specifies the NTP server address or DHCP lease time configured for the subnet. For details, see **Table 4-26**.

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Table 4-26 extra_dhcp_opt object

Parameter	Mandatory	Type	Description
opt_value	No	String	• Specifies the NTP server address domain name, or DHCP lease expiration time configured for the subnet. • Constraints: If **opt_name** is set to **ntp**, the value 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 (,). If **opt_name** is set to **null**, the value indicates that no NTP server is configured for the subnet. The parameter value cannot be an empty string. If **opt_name** is set to **domainname**, the value is the domain name configured for DNS and is used to obtain the IP address from the DNS server. A domain name can contain only letters, digits, and hyphens (-) and cannot start or end with a hyphen (-). Each domain name contains at least two labels separated by periods (.). Max total: 254 characters. Max label: 63 characters. The option **addresstime** for **opt_name** indicates the DHCP lease expiration time of the IPv4 subnet. The value can be **-1**, which indicates unlimited lease time, or *Number***h**. The number ranges from **1** to **175200**. For example, the value can be **5h**. The default value is **87600h**. The option **ipv6_addresstime** for **opt_name** indicates the DHCP lease expiration time of the IPv6 subnet. The value can be **-1**, which indicates unlimited

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Parameter	Mandatory	Type	Description
			lease time, or *Number*h. The number ranges from **1** to **175200**. For example, the value can be **5h**. The default value is **2h**.
opt_name	Yes	String	• Specifies the NTP server address or DHCP lease expiration time configured for the subnet. • Currently, the value can be **ntp**, **domainname**, **addresstime**, or **ipv6_addresstime**.

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",
         {
            "opt_value": "10.100.0.33,10.100.0.34",
            "opt_name": "ntp"
         },
         {
            "opt_value": "24h",
            "opt_name": "addresstime"
         },
         {
            "opt_value": "2h",
            "opt_name": "ipv6_addresstime"
         }
      ]
   }
}
```

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Response Parameters

Table 4-27 Response parameter

Parameter	Type	Description
subnet	**subnet** object	Specifies the **subnet objects**.

Table 4-28 subnet objects

Parameter	Type	Description
id	String	Specifies the resource identifier in the form of UUID.
name	String	• Specifies the subnet name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	• Provides supplementary information about the subnet. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	• Specifies the subnet CIDR block. • The value must be within the VPC CIDR block. • The value must be in CIDR format. The subnet mask cannot be greater than 28.
gateway_ip	String	• Specifies the gateway of the subnet. • The value must be an IP address in the subnet. • The value must be a valid IP address.
ipv6_enable	Boolean	Specifies whether IPv6 is enabled.
cidr_v6	String	Specifies the IPv6 subnet CIDR block. If the subnet is an IPv4 subnet, this parameter is not returned.
gateway_ip_v6	String	Specifies the IPv6 subnet gateway. If the subnet is an IPv4 subnet, this parameter is not returned.

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Parameter	Type	Description
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. • The value must be an IP address. If the value is not specified, the default value will be left blank.
secondary_dns	String	• Specifies the standby IP address of DNS server on the subnet. • The value must be an IP address. If the value is not specified, the default value will be left blank. If only **secondary_dns** is specified and **primary_dns** is not specified, **primary_dns** will automatically use the value of **secondary_dns**. If there is only one DNS server address, only **primary_dns** is displayed.
dnsList	Array of strings	• Specifies the DNS server address list of a subnet. This field is required if you need to use more than two DNS servers. • This parameter value is the superset of both DNS server address 1 and DNS server address 2. If the value is not specified, the default value will be left blank.
availability_zone	String	• Identifies the AZ that the subnet belongs to, which can be obtained from endpoints. • The value of this parameter is the AZ specified when the subnet is created and does not limit the usage scope of the subnet. If this parameter is not specified, the value will be left blank.
vpc_id	String	Specifies the ID of the VPC that the subnet belongs to.

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Parameter	Type	Description
status	String	• Specifies the status of the subnet. • The value can be **ACTIVE**, **UNKNOWN**, or **ERROR**. – **ACTIVE**: indicates that the subnet has been associated with a VPC. – **UNKNOWN**: indicates that the subnet has not been associated with a VPC. – **ERROR**: indicates that the subnet is abnormal. • The system creates a subnet and then associates the subnet with a VPC in the threads. In the concurrent scenario, if the CIDR block of the created subnet is the same as that of an existing subnet, the created subnet fails to associate with a VPC after underlying system verification. As a result, the subnet creation fails. • The value of status is **UNKNOWN** before the subnet is associated with a VPC. After the subnet is associated with a VPC in the threads, the status of the subnet is **ACTIVE**.
neutron_network_id	String	Specifies the ID of the corresponding network (OpenStack Neutron API).
neutron_subnet_id	String	Specifies the ID of the corresponding subnet (OpenStack Neutron API).
neutron_subnet_id_v6	String	Specifies the ID of the IPv6 subnet (OpenStack Neutron API). If the subnet is an IPv4 subnet, this parameter is not returned.
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the NTP server address or DHCP lease time configured for the subnet. For details, see **Table 4-29**.

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Parameter	Type	Description
scope	String	• Specifies where the subnet is used in edge cloud scenario. • Range: – **center**: The subnet is used in a central AZ. – *{publicBorderGroup}*: The subnet is used in a public border group. The public border group limits the usage scope of a subnet but can have multiple edge AZs associated. You can obtain the AZs by the API for Listing AZs.

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Table 4-29 extra_dhcp_opt object

Parameter	Mandatory	Type	Description
opt_value	No	String	• Specifies the NTP server address domain name, or DHCP lease expiration time configured for the subnet. • Constraints: If **opt_name** is set to **ntp**, the value 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 (,). If **opt_name** is set to **null**, the value indicates that no NTP server is configured for the subnet. The parameter value cannot be an empty string. If **opt_name** is set to **domainname**, the value is the domain name configured for DNS and is used to obtain the IP address from the DNS server. A domain name can contain only letters, digits, and hyphens (-) and cannot start or end with a hyphen (-). Each domain name contains at least two labels separated by periods (.). Max total: 254 characters. Max label: 63 characters. The option **addresstime** for **opt_name** indicates the DHCP lease expiration time of the IPv4 subnet. The value can be **-1**, which indicates unlimited lease time, or *Number***h**. The number ranges from **1** to **175200**. For example, the value can be **5h**. The default value is **87600h**. The option **ipv6_addresstime** for **opt_name** indicates the DHCP lease expiration time of the IPv6 subnet. The value can be **-1**, which indicates unlimited

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Parameter	Mandatory	Type	Description
			lease time, or *Number*h. The number ranges from **1** to **175200**. For example, the value can be **5h**. The default value is **2h**.
opt_name	Yes	String	• Specifies the NTP server address or DHCP lease expiration time configured for the subnet. • Currently, the value can be **ntp**, **domainname**, **addresstime**, or **ipv6_addresstime**.

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",
        "extra_dhcp_opts": [
            {
                "opt_value": "10.100.0.33,10.100.0.34",
                "opt_name": "ntp"
            },
            {
                "opt_value": "24h",
                "opt_name": "addresstime"
            },
            {
                "opt_value": "2h",
                "opt_name": "ipv6_addresstime"
            }
        ]
    }
}
```


Status Code

See **Status Codes**.

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Error Code

See **Error Codes**.

4.2.2 Querying Subnet Details

Function

This API is used to query details about a subnet.

URI

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

Table 4-30 describes the parameters.

Table 4-30 Parameter description

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

Request Parameters

None

Example Request

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

Response Parameters

Table 4-31 Response parameter

Parameter	Type	Description
subnet	**subnet** object	Specifies the **subnet objects**.

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Table 4-32 subnet objects

Parameter	Type	Description
id	String	Specifies a resource ID in UUID format.
name	String	• Specifies the subnet name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	• Provides supplementary information about the subnet. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	Specifies the subnet CIDR block.
gateway_ip	String	Specifies the subnet gateway address.
ipv6_enable	Boolean	Specifies whether IPv6 is enabled.
cidr_v6	String	Specifies the IPv6 subnet CIDR block. If the subnet is an IPv4 subnet, this parameter is not returned.
gateway_ip_v6	String	Specifies the IPv6 subnet gateway. If the subnet is an IPv4 subnet, this parameter is not returned.
dhcp_enable	Boolean	Specifies whether DHCP is enabled for the subnet.
primary_dns	String	Specifies the primary IP address of DNS server on the subnet.
secondary_dns	String	Specifies the standby IP address of DNS server on the subnet.
dnsList	Array of strings	Specifies the IP address list of DNS servers on the subnet.
availability_zone	String	Identifies the AZ that the subnet belongs to. The value of this parameter is the AZ specified when the subnet is created and does not limit the usage scope of the subnet.
vpc_id	String	Specifies the ID of the VPC that the subnet belongs to.

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Parameter	Type	Description
status	String	• Specifies the status of the subnet. • The value can be **ACTIVE**, **UNKNOWN**, or **ERROR**. – **ACTIVE**: indicates that the subnet has been associated with a VPC. – **UNKNOWN**: indicates that the subnet has not been associated with a VPC. – **ERROR**: indicates that the subnet is abnormal.
neutron_network_id	String	Specifies the ID of the corresponding network (OpenStack Neutron API).
neutron_subnet_id	String	Specifies the ID of the corresponding subnet (OpenStack Neutron API).
neutron_subnet_id_v6	String	Specifies the ID of the IPv6 subnet (OpenStack Neutron API). If the subnet is an IPv4 subnet, this parameter is not returned.
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the NTP server address or DHCP lease time configured for the subnet. For details, see **Table 4-33**.
scope	String	• Specifies where the subnet is used in edge cloud scenario. • Range: – **center**: The subnet is used in a central AZ. – *{publicBorderGroup}*: The subnet is used in a public border group. The public border group limits the usage scope of a subnet but can have multiple edge AZs associated. You can obtain the AZs by the API for Listing AZs.

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Table 4-33 extra_dhcp_opt object

Parameter	Mandatory	Type	Description
opt_value	No	String	• Specifies the NTP server address domain name, or DHCP lease expiration time configured for the subnet. • Constraints: If **opt_name** is set to **ntp**, the value 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 (,). If **opt_name** is set to **null**, the value indicates that no NTP server is configured for the subnet. The parameter value cannot be an empty string. If **opt_name** is set to **domainname**, the value is the domain name configured for DNS and is used to obtain the IP address from the DNS server. A domain name can contain only letters, digits, and hyphens (-) and cannot start or end with a hyphen (-). Each domain name contains at least two labels separated by periods (.). Max total: 254 characters. Max label: 63 characters. The option **addresstime** for **opt_name** indicates the DHCP lease expiration time of the IPv4 subnet. The value can be **-1**, which indicates unlimited lease time, or *Number***h**. The number ranges from **1** to **175200**. For example, the value can be **5h**. The default value is **87600h**. The option **ipv6_addresstime** for **opt_name** indicates the DHCP lease expiration time of the IPv6 subnet. The value can be **-1**, which indicates unlimited

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Parameter	Mandatory	Type	Description
			lease time, or *Number*h. The number ranges from **1** to **175200**. For example, the value can be **5h**. The default value is **2h**.
opt_name	Yes	String	• Specifies the NTP server address or DHCP lease expiration time configured for the subnet. • Currently, the value can be **ntp**, **domainname**, **addresstime**, or **ipv6_addresstime**.

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"
,
         {
            "opt_value": "24h",
            "opt_name": "addresstime"
         }
   }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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4.2.3 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 4-34 describes the parameters.

Table 4-34 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.

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Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.
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 4-35 Response parameter

Parameter	Type	Description
subnets	Array of **subnet** objects	Specifies the subnet objects.

Table 4-36 subnet objects

Parameter	Type	Description
id	String	Specifies a resource ID in UUID format.
name	String	• Specifies the subnet name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	• Provides supplementary information about the subnet. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	Specifies the subnet CIDR block.

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Parameter	Type	Description
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.
availability_zone	String	Identifies the AZ that the subnet belongs to. The value of this parameter is the AZ specified when the subnet is created and does not limit the usage scope of the subnet.
vpc_id	String	Specifies the ID of the VPC that the subnet belongs to.
status	String	• Specifies the status of the subnet. • The value can be **ACTIVE**, **UNKNOWN**, or **ERROR**. – **ACTIVE**: indicates that the subnet has been associated with a VPC. – **UNKNOWN**: indicates that the subnet has not been associated with a VPC. – **ERROR**: indicates that the subnet is abnormal.
neutron_network_id	String	Specifies the ID of the network (OpenStack Neutron API).
neutron_subnet_id	String	Specifies the ID of the subnet (OpenStack Neutron API).

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Parameter	Type	Description
neutron_subnet_id_v6	String	Specifies the ID of the IPv6 subnet (OpenStack Neutron API). If the subnet is an IPv4 subnet, this parameter is not returned.
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the NTP server address or DHCP lease time configured for the subnet. For details, see **Table 4-37**.
scope	String	• Specifies where the subnet is used in edge cloud scenario. • The value can be: – **center**: The subnet is used in a central AZ. – *{publicBorderGroup}*: The subnet is used in a public border group. The public border group limits the usage scope of a subnet but can have multiple edge AZs associated. You can obtain the AZs by the API for Listing AZs.

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Table 4-37 extra_dhcp_opt object

Parameter	Mandatory	Type	Description
opt_value	No	String	• Specifies the NTP server address domain name, or DHCP lease expiration time configured for the subnet. • Constraints: If **opt_name** is set to **ntp**, the value 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 (,). If **opt_name** is set to **null**, the value indicates that no NTP server is configured for the subnet. The parameter value cannot be an empty string. If **opt_name** is set to **domainname**, the value is the domain name configured for DNS and is used to obtain the IP address from the DNS server. A domain name can contain only letters, digits, and hyphens (-) and cannot start or end with a hyphen (-). Each domain name contains at least two labels separated by periods (.). Max total: 254 characters. Max label: 63 characters. The option **addresstime** for **opt_name** indicates the DHCP lease expiration time of the IPv4 subnet. The value can be **-1**, which indicates unlimited lease time, or *Number***h**. The number ranges from **1** to **175200**. For example, the value can be **5h**. The default value is **87600h**. The option **ipv6_addresstime** for **opt_name** indicates the DHCP lease expiration time of the IPv6 subnet. The value can be **-1**, which indicates unlimited

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Parameter	Mandatory	Type	Description
			lease time, or *Number***h**. The number ranges from **1** to **175200**. For example, the value can be **5h**. The default value is **2h**.
opt_name	Yes	String	• Specifies the NTP server address or DHCP lease expiration time configured for the subnet. • Currently, the value can be **ntp**, **domainname**, **addresstime**, or **ipv6_addresstime**.

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",
         "extra_dhcp_opts": [
           {
             "opt_value": "10.100.0.33,10.100.0.34",
             "opt_name": "ntp"
           },
           {
             "opt_value": "24h",
             "opt_name": "addresstime"
           },
           {
             "opt_value": "2h",
             "opt_name": "ipv6_addresstime"
           }
         ]
      },
      {
         "id": "531dec0f-3116-411b-a21b-e612e42349fd",
         "name": "Subnet1",
         "description": "",
         "cidr": "192.168.1.0/24",
```


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```
        "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",
        "extra_dhcp_opts": [
          {
            "opt_value": "10.100.0.33,10.100.0.34",
            "opt_name": "ntp"
          },
          {
            "opt_value": "24h",
            "opt_name": "addresstime"
          }
        ]
      }
    ]
}
```


Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.2.4 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 4-38 describes the parameters.

Table 4-38 Parameter description

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

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

Request Parameters

Table 4-39 Request parameter

Parameter	Mandatory	Type	Description
subnet	Yes	**subnet** object	Specifies the **subnet objects**.

Table 4-40 subnet objects

Parameter	Mandatory	Type	Description
name	Yes	String	• Specifies the subnet name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	No	String	• Provides supplementary information about the subnet. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
ipv6_enable	No	Boolean	• Specifies whether IPv6 is enabled. • The value can be **true** (enabled) or **false** (disabled).

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Parameter	Mandatory	Type	Description
dhcp_enable	No	Boolean	• Specifies whether DHCP is enabled for the subnet. • The value can be **true** (enabled) or **false** (disabled). • If this parameter is left blank, the system automatically sets it to **true** by default. If this parameter is set to **false**, newly created ECSs cannot obtain IP addresses, and usernames and passwords cannot be injected using Cloud-init.
primary_dns	No	String	• Specifies the primary IP address of DNS server on the subnet. • The value must be a valid IP address.
secondary_dns	No	String	• Specifies the standby IP address of DNS server on the subnet. • The value must be a valid IP address. The value of **secondary_dns** must be different from that of **primary_dns**. If there is only one DNS server address, only **primary_dns** is displayed.
dnsList	No	Array of strings	• Specifies the DNS server address list of a subnet. This field is required if you need to use more than two DNS servers. • This parameter value is the superset of both DNS server address 1 and DNS server address 2.
extra_dhcp_opts	No	Array of **extra_dhcp_opt** objects	Specifies the NTP server address or DHCP lease time configured for the subnet. For details, see **Table 4-41**.

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Table 4-41 extra_dhcp_opt object

Parameter	Mandatory	Type	Description
opt_value	No	String	• Specifies the NTP server address domain name, or DHCP lease expiration time configured for the subnet. • Constraints: If **opt_name** is set to **ntp**, the value 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 (,). If **opt_name** is set to **null**, the value indicates that no NTP server is configured for the subnet. The parameter value cannot be an empty string. If **opt_name** is set to **domainname**, the value is the domain name configured for DNS and is used to obtain the IP address from the DNS server. A domain name can contain only letters, digits, and hyphens (-) and cannot start or end with a hyphen (-). Each domain name contains at least two labels separated by periods (.). Max total: 254 characters. Max label: 63 characters. The option **addresstime** for **opt_name** indicates the DHCP lease expiration time of the IPv4 subnet. The value can be **-1**, which indicates unlimited lease time, or *Number***h**. The number ranges from **1** to **175200**. For example, the value can be **5h**. The default value is **87600h**. The option **ipv6_addresstime** for **opt_name** indicates the DHCP lease expiration time of the IPv6 subnet. The value can be **-1**, which indicates unlimited

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Parameter	Mandatory	Type	Description
			lease time, or *Number***h*. The number ranges from **1** to **175200**. For example, the value can be **5h**. The default value is **2h**.
opt_name	Yes	String	• Specifies the NTP server address or DHCP lease expiration time configured for the subnet. • Currently, the value can be **ntp**, **domainname**, **addresstime**, or **ipv6_addresstime**.

Example Request

- Change the name of the subnet whose ID is 4779ab1c-7c1a-44b1-a02e-93dfc361b32d to **subnet02**, and also change its DNS and DHCP configurations.

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

{
   "subnet": {
      "name": "subnet02",
      "ipv6_enable": true,
      "dhcp_enable": false,
      "primary_dns": "114.xx.xx.115",
      "secondary_dns": "114.xx.xx.116",
      "extra_dhcp_opts": [
         {
            "opt_value": "10.100.0.33,10.100.0.34",
            "opt_name": "ntp"
         },
         {
            "opt_value": "24h",
            "opt_name": "addresstime"
         },
         {
            "opt_value": "2h",
            "opt_name": "ipv6_addresstime"
         }
      ]
   }
}
```

Response Parameters

Table 4-42 Response parameter

Parameter	Type	Description
subnet	**subnet** object	Specifies the **subnet** objects.

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Table 4-43 subnet objects

Parameter	Type	Description
id	String	Specifies a resource ID in UUID format.
status	String	• Specifies the status of the subnet. • The value can be **ACTIVE**, **UNKNOWN**, or **ERROR**. – **ACTIVE**: indicates that the subnet has been associated with a VPC. – **UNKNOWN**: indicates that the subnet has not been associated with a VPC. – **ERROR**: indicates that the subnet is abnormal.

Example Response

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

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.2.5 Deleting a Subnet

Function

This API is used to delete a subnet.

URI

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

Table 4-44 describes the parameters.

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Table 4-44 Parameter description

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

Request Parameters

None

Example Request

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

Response Parameters

None

Example Response

None

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.3 Quota

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4.3.1 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, VPNs, and EIPs.

URI

GET /v1/{project_id}/quotas

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

Table 4-45 describes the parameters.

Table 4-45 Parameter description

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

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Parameter	Mandatory	Type	Description
type	No	String	• Specifies the resource type. • Values: – **vpc**: VPC – **subnet**: Subnet – **securityGroup**: Security group – **securityGroupRule**: Security group rule – **publicIp**: EIP – **vpn**: VPN – **vpngw**: VPN gateway – **vpcPeer**: VPC peering connection – **loadbalancer**: Load balancer – **listener**: Load balancer listener – **physicalConnect**: Direct Connect connection – **virtualInterface**: Virtual interface – **firewall**: Firewall – **shareBandwidthIP**: IP address added to a shared bandwidth – **shareBandwidth**: Shared bandwidth – **address_group**: IP address group – **flow_log**: VPC flow log – **vpcContainRoutetable**: Number of route tables associated with a VPC – **routetableContainRoutes**: Number of routes in a route table

Request Parameters

None

Example Request

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

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Response Parameters

Table 4-46 Response parameter

Parameter	Type	Description
quotas	**quotas** object	Specifies the quota object. For details, see **Table 4-47**.

Table 4-47 Description of the **quotas** field

Parameter	Type	Description
resources	Array of **resource** objects	Specifies the resource objects. For details, see **Table 4-48**.

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Table 4-48 Description of the **resource** field

Parameter	Type	Description
type	String	• Specifies the resource type. • Values: – **vpc**: VPC – **subnet**: Subnet – **securityGroup**: Security group – **securityGroupRule**: Security group rule – **publicIp**: EIP – **vpn**: VPN – **vpngw**: VPN gateway – **vpcPeer**: VPC peering connection – **loadbalancer**: Load balancer – **listener**: Load balancer listener – **physicalConnect**: Direct Connect connection – **virtualInterface**: Virtual interface – **firewall**: Firewall – **shareBandwidthIP**: IP address added to a shared bandwidth – **shareBandwidth**: Shared bandwidth – **address_group**: IP address group – **flow_log**: VPC flow log – **vpcContainRoutetable**: Number of route tables associated with a VPC – **routetableContainRoutes**: Number of routes in a route table
used	Integer	• Specifies the number of created network resources. • The value ranges from **0** to the value of **quota**.
quota	Integer	• Specifies the maximum quota values for the resources. • The value ranges from the default quota value to the maximum quota value.
min	Integer	Specifies the minimum quota value allowed.

NOTE

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

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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
```


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```
        },
        {
            "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": "flow_log",
            "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**.

4.4 Private IP Address

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4.4.1 Assigning a Private IP Address

Function

This API is used to assign a private IP address.

URI

POST /v1/{project_id}/privateips

Table 4-49 describes the parameters.

Table 4-49 Parameter description

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

Request Parameters

Table 4-50 Request parameter

Parameter	Mandatory	Type	Description
privateips	Yes	Array of **privateip** objects	Specifies the private IP address objects. For details, see **Table 4-51**.

Table 4-51 Description of the **privateip** field

Parameter	Mandatory	Type	Description
subnet_id	Yes	String	Specifies the ID of the subnet from which IP addresses are assigned. If you use the management console, the value of this parameter is the **Network ID** value.
ip_address	No	String	• Specifies the target IP address. • The value can be an available IP address in the subnet. If it is not specified, the system automatically assigns an IP address.

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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 4-52 Response parameter

Parameter	Type	Description
privateips	Array of **privateip** objects	Specifies the private IP address objects. For details, see **Table 4-53**.

Table 4-53 Description of the **privateip** field

Parameter	Type	Description
status	String	• Specifies the status of the private IP address. • Possible values are as follows: – **ACTIVE** – **DOWN**
id	String	Specifies the ID of the private IP address, which uniquely identifies the private IP address.
subnet_id	String	Specifies the ID of the subnet from which IP addresses are assigned. If you use the management console, the value of this parameter is the **Network ID** value.
tenant_id	String	Specifies the project ID.

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Parameter	Type	Description
device_owner	String	• Specifies the resource using the private IP address. The parameter is left blank if it is not used. • The value can be: **network:dhcp**: DHCP service IP address **network:router_interface_distributed**: Gateway IP address **compute:*xxx*** (*xxx* indicates the AZ name. For example, **compute:aa-bb-cc** indicates that the IP address is used by an ECS in the AZ aa-bb-cc.): IP address of an ECS NIC **neutron:VIP_PORT**: Virtual IP address **neutron:LOADBALANCERV2**: IP address of a shared load balancer **neutron:LOADBALANCERV3**: IP address of a dedicated load balancer **network:endpoint_interface**: IP address of a VPC endpoint **network:nat_gateway**: IP address used by a NAT gateway • The value range specifies only the type of private IP addresses supported by the current service.
ip_address	String	Specifies the assigned private IP address.

Example Response

```
{
   "privateips": [
      {
         "status": "DOWN",
         "id": "c60c2ce1-1e73-44bd-bf48-fd688448ff7b",
         "subnet_id": "531dec0f-3116-411b-a21b-e612e42349fd",
         "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
         "device_owner": "",
         "ip_address": "192.168.1.10"
      },
      {
         "status": "DOWN",
         "id": "4b123c18-ae92-4dfa-92cd-d44002359aa1",
         "subnet_id": "531dec0f-3116-411b-a21b-e612e42349fd",
         "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
         "device_owner": "",
         "ip_address": "192.168.1.17"
      }
```

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```
  ]
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.4.2 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 4-54 describes the parameters.

Table 4-54 Parameter description

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

Request Parameters

None

Example Request

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


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Response Parameters

Table 4-55 Response parameter

Parameter	Type	Description
privateip	**privateip** object	Specifies the private IP address objects. For details, see **Table 4-56**.

Table 4-56 Description of the **privateip** field

Parameter	Type	Description
status	String	• Specifies the status of the private IP address. • Possible values are as follows: – **ACTIVE** – **DOWN**
id	String	Specifies the ID of the private IP address, which uniquely identifies the private IP address.
subnet_id	String	Specifies the ID of the subnet from which IP addresses are assigned. If you use the management console, the value of this parameter is the **Network ID** value.
tenant_id	String	Specifies the project ID.

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Parameter	Type	Description
device_owner	String	• Specifies the resource using the private IP address. The parameter is left blank if it is not used. • The value can be: **network:dhcp**: DHCP service IP address **network:router_interface_distributed**: Gateway IP address **compute:***xxx* (*xxx* indicates the AZ name. For example, **compute:aa-bb-cc** indicates that the IP address is used by an ECS in the AZ aa-bb-cc.): IP address of an ECS NIC **neutron:VIP_PORT**: Virtual IP address **neutron:LOADBALANCERV2**: IP address of a shared load balancer **neutron:LOADBALANCERV3**: IP address of a dedicated load balancer **network:endpoint_interface**: IP address of a VPC endpoint **network:nat_gateway**: IP address used by a NAT gateway • The value range specifies only the type of private IP addresses supported by the current service.
ip_address	String	Specifies the assigned private IP address.

Example Response

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

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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4.4.3 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 4-57 describes the parameters.

Table 4-57 Parameter description

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

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Parameter	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.

Request Parameters

None

Example Request

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

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Response Parameters

Table 4-58 Request parameter

Parameter	Type	Description
privateips	Array of **privateip** objects	Specifies the private IP address objects. For details, see **Table 4-59**.

Table 4-59 Description of the **privateip** field

Parameter	Type	Description
status	String	• Specifies the status of the private IP address. • Possible values are as follows: – **ACTIVE** – **DOWN**
id	String	Specifies the ID of the private IP address, which uniquely identifies the private IP address.
subnet_id	String	Specifies the ID of the subnet from which IP addresses are assigned. If you use the management console, the value of this parameter is the **Network ID** value.
tenant_id	String	Specifies the project ID.

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Parameter	Type	Description
device_owner	String	• Specifies the resource using the private IP address. The parameter is left blank if it is not used. • The value can be: **network:dhcp**: DHCP service IP address **network:router_interface_distributed**: Gateway IP address **compute:*xxx*** (*xxx* indicates the AZ name. For example, **compute:aa-bb-cc** indicates that the IP address is used by an ECS in the AZ aa-bb-cc.): IP address of an ECS NIC **neutron:VIP_PORT**: Virtual IP address **neutron:LOADBALANCERV2**: IP address of a shared load balancer **neutron:LOADBALANCERV3**: IP address of a dedicated load balancer **network:endpoint_interface**: IP address of a VPC endpoint **network:nat_gateway**: IP address used by a NAT gateway • The value range specifies only the type of private IP addresses supported by the current service.
ip_address	String	Specifies the assigned private IP address.

Example Response

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


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Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.4.4 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 4-60 describes the parameters.

Table 4-60 Parameter description

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

Request Parameters

None

Example Request

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

Response Parameters

None

Example Response

None

Status Code

See **Status Codes**.

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Error Code

See **Error Codes**.

4.5 Security Group

4.5.1 Creating a Security Group

Function

This API is used to create a security group.

URI

POST /v1/{project_id}/security-groups

Table 4-61 describes the parameters.

Table 4-61 Parameter description

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

Request Parameters

Table 4-62 Request parameter

Parameter	Mandatory	Type	Description
security_group	Yes	**security_group** object	Specifies the security group objects. For details, see **Table 4-63**.

Table 4-63 Description of **security_group** fields

Parameter	Mandatory	Type	Description
name	Yes	String	• Specifies the security group name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Mandatory	Type	Description
vpc_id	No	String	Specifies the ID of the VPC that the security group is associated with. **NOTE** Currently, this parameter is not recommended because it is only used as a prompt and does not restrict that the security group must be associated with the VPC.
enterprise_project_id	No	String	• Specifies the enterprise project ID. When creating a security group, associate the enterprise project ID with the security group. • The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. **NOTE**

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",
        "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
    }
}
```

Response Parameters

Table 4-64 Response parameter

Parameter	Type	Description
security_group	**security_group** object	Specifies the security group objects. For details, see **Table 4-65**.

Table 4-65 Description of **security_group** fields

Parameter	Type	Description
name	String	Specifies the security group name.

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Parameter	Type	Description
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 ID of the VPC that the security group is associated with. **NOTE** Currently, this parameter is not recommended because it is only used as a prompt and does not restrict that the security group must be associated with the VPC.
security_group_rules	Array of **security_group_rule** objects	Specifies the default security group rules, which ensure that resources in the security group can communicate with one another.
enterprise_project_id	String	• Specifies the enterprise project ID. When creating a security group, associate the enterprise project ID with the security group. • The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. **NOTE**

Table 4-66 security_group_rule objects

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

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Parameter	Type	Description
description	String	• Provides supplementary information about the security group rule. • The value can contain no more than 255 characters, including letters and digits.
security_group_id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
direction	String	• Specifies the direction of access control. • Possible values are as follows: – **egress** – **ingress**
ethertype	String	• Specifies the IP protocol version. • The value can be **IPv4** or **IPv6**.
protocol	String	• Specifies the protocol type. • The value can be **icmp**, **tcp**, **udp**, or an IP protocol number (0 to 255, for example, 47 for GRE) • If the parameter is left blank, all protocols are supported.
port_range_min	Integer	• Specifies the start port number. • The value ranges from 1 to 65535. • The value cannot be greater than the **port_range_max** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.

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Parameter	Type	Description
port_range_max	Integer	• Specifies the end port number. • The value ranges from 1 to 65535. • If the protocol is not **icmp**, the value cannot be smaller than the **port_range_min** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.
remote_ip_prefix	String	• Specifies the remote IP address. If the access control direction is set to **egress**, the parameter specifies the source IP address. If the access control direction is set to **ingress**, the parameter specifies the destination IP address. • The value can be in the CIDR format or IP addresses. • The parameter value is mutually exclusive with parameters **remote_group_id** and **remote_address_group_id**.
remote_group_id	String	• Specifies the ID of the peer security group. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_address_group_id**.
remote_address_group_id	String	• Specifies the remote IP address group ID. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.
tenant_id	String	• Specifies the ID of the project to which the security group rule belongs.

Example Response

```
{
    "security_group": {
        "id": "16b6e77a-08fa-42c7-aa8b-106c048884e6",
```

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```
    "name": "qq",
    "description": "",
    "vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",
    "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2",
    "security_group_rules": [
      {
          "id": "f11a3824-ac19-4fad-b4f1-c5f4a6dd0a80",
          "tenant_id": "060576782980d5762f9ec014dd2f1148",
          "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "direction": "ingress",
          "protocol": null,
          "description": "",
          "ethertype": "IPv6",
          "remote_ip_prefix": null,
          "remote_address_group_id": null,
          "port_range_max": null,
          "port_range_min": null
      },
      {
          "id": "3d6480e8-9ea4-46dc-bb1b-8db190cd5677",
          "tenant_id": "060576782980d5762f9ec014dd2f1148",
          "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "remote_group_id": null,
          "direction": "egress",
          "protocol": null,
          "description": "",
          "ethertype": "IPv6",
          "remote_ip_prefix": null,
          "remote_address_group_id": null,
          "port_range_max": null,
          "port_range_min": null
      },
      {
          "id": "9581f18c-1fdd-43da-ace9-7758a56ef28a",
          "tenant_id": "060576782980d5762f9ec014dd2f1148",
          "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "remote_group_id": null,
          "direction": "egress",
          "protocol": null,
          "description": "",
          "ethertype": "IPv4",
          "remote_ip_prefix": null,
          "remote_address_group_id": null,
          "port_range_max": null,
          "port_range_min": null
      },
      {
          "id": "a3ba270e-e58b-432d-a912-aeb7eace9fb8",
          "tenant_id": "060576782980d5762f9ec014dd2f1148",
          "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "direction": "ingress",
          "protocol": null,
          "description": "",
          "ethertype": "IPv4",
          "remote_ip_prefix": null,
          "remote_address_group_id": null,
          "port_range_max": null,
          "port_range_min": null
      }
    ]
  }
}
```


Status Codes

See **Status Codes**.

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Error Codes

See **Error Codes**.

4.5.2 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 4-67 describes the parameters.

Table 4-67 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
security_group_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 4-68 Response parameter

Parameter	Type	Description
security_group	**security_group** object	Specifies the security group object.

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Table 4-69 Description of **security_group** fields

Parameter	Type	Description
name	String	Specifies the security group name.
description	String	Provides supplementary information about the security group.
id	String	Specifies the security group ID, which uniquely identifies the security group.
vpc_id	String	Specifies the resource ID of the VPC to which the security group belongs. **NOTE** Currently, this parameter is not recommended because it is only used as a prompt and does not restrict that the security group must be associated with the VPC.
security_group_rules	Array of **security_group_rule** objects	Specifies the default security group rules, which ensure that resources in the security group can communicate with one another.
enterprise_project_id	String	• Specifies the enterprise project ID. When creating a security group, associate the enterprise project ID with the security group. • The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. **NOTE**

Table 4-70 security_group_rule objects

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

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Parameter	Type	Description
description	String	• Provides supplementary information about the security group rule. • The value can contain no more than 255 characters, including letters and digits.
security_group_id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
direction	String	• Specifies the direction of access control. • Possible values are as follows: – **egress** – **ingress**
ethertype	String	• Specifies the IP protocol version. • The value can be **IPv4** or **IPv6**.
protocol	String	• Specifies the protocol type. • The value can be **icmp**, **tcp**, **udp**, or an IP protocol number (0 to 255, for example, 47 for GRE) • If the parameter is left blank, all protocols are supported.
port_range_min	Integer	• Specifies the start port number. • The value ranges from 1 to 65535. • The value cannot be greater than the **port_range_max** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.

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Parameter	Type	Description
port_range_max	Integer	• Specifies the end port number. • The value ranges from 1 to 65535. • If the protocol is not **icmp**, the value cannot be smaller than the **port_range_min** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.
remote_ip_prefix	String	• Specifies the remote IP address. If the access control direction is set to **egress**, the parameter specifies the source IP address. If the access control direction is set to **ingress**, the parameter specifies the destination IP address. • The value can be in the CIDR format or IP addresses. • The parameter value is mutually exclusive with parameters **remote_group_id** and **remote_address_group_id**.
remote_group_id	String	• Specifies the ID of the peer security group. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_address_group_id**.
remote_address_group_id	String	• Specifies the remote IP address group ID. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.
tenant_id	String	• Specifies the ID of the project to which the security group rule belongs.

Example Response

```
{
    "security_group": {
        "id": "16b6e77a-08fa-42c7-aa8b-106c048884e6",
```

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```
    "name": "qq",
    "description": "qq",
    "vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",
    "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2",
    "security_group_rules": [
      {
          "id": "f11a3824-ac19-4fad-b4f1-c5f4a6dd0a80",
          "tenant_id": "060576782980d5762f9ec014dd2f1148",
          "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "direction": "ingress",
          "protocol": null,
          "description": "",
          "ethertype": "IPv6",
          "remote_ip_prefix": null,
          "remote_address_group_id": null,
          "port_range_max": null,
          "port_range_min": null
      },
      {
          "id": "3d6480e8-9ea4-46dc-bb1b-8db190cd5677",
          "tenant_id": "060576782980d5762f9ec014dd2f1148",
          "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "remote_group_id": null,
          "direction": "egress",
          "protocol": null,
          "description": "",
          "ethertype": "IPv6",
          "remote_ip_prefix": null,
          "remote_address_group_id": null,
          "port_range_max": null,
          "port_range_min": null
      },
      {
          "id": "9581f18c-1fdd-43da-ace9-7758a56ef28a",
          "tenant_id": "060576782980d5762f9ec014dd2f1148",
          "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "remote_group_id": null,
          "direction": "egress",
          "protocol": null,
          "description": "",
          "ethertype": "IPv4",
          "remote_ip_prefix": null,
          "remote_address_group_id": null,
          "port_range_max": null,
          "port_range_min": null
      },
      {
          "id": "a3ba270e-e58b-432d-a912-aeb7eace9fb8",
          "tenant_id": "060576782980d5762f9ec014dd2f1148",
          "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
          "direction": "ingress",
          "protocol": null,
          "description": "",
          "ethertype": "IPv4",
          "remote_ip_prefix": null,
          "remote_address_group_id": null,
          "port_range_max": null,
          "port_range_min": null
      }
    ]
  }
}
```


Status Code

See **Status Codes**.

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Error Code

See **Error Codes**.

4.5.3 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 4-71 describes the parameters.

Table 4-71 Parameter description

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

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Parameter	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. ● If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. ● If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. ● If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. ● If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.

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Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.
vpc_id	No	String	Specifies that the VPC ID is used as the filtering condition.
enterprise_project_id	No	String	• Specifies the enterprise project ID. This field can be used to filter the security groups of an enterprise project. • The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. To obtain the security groups bound to all enterprise projects of the user or to display the security group list for enterprise project member accounts, set **all_granted_eps**. **NOTE**

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Parameter	Mandatory	Type	Description
remote_address_group_id	No	String	• Specifies the remote IP address group ID. You can log in to the management console and view the ID on the IP address group page. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.

Request Parameters

None

Example Request

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

Response Parameters

Table 4-72 Response parameter

Parameter	Type	Description
security_groups	Array of **security_group** objects	Specifies the security group objects. For details, see **Table 4-73**.

Table 4-73 Description of **security_group** fields

Parameter	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.

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Parameter	Type	Description
vpc_id	String	Specifies the ID of the VPC that the security group is associated with. **NOTE** Currently, this parameter is not recommended because it is only used as a prompt and does not restrict that the security group must be associated with the VPC.
security_group_rules	Array of **security_group_rule** objects	Specifies the default security group rules, which ensure that resources in the security group can communicate with one another.
enterprise_project_id	String	• Specifies the enterprise project ID. When creating a security group, associate the enterprise project ID with the security group. • The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. **NOTE**

Table 4-74 security_group_rule objects

Parameter	Type	Description
id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
description	String	• Provides supplementary information about the security group rule. • The value can contain no more than 255 characters, including letters and digits.
security_group_id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.

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Parameter	Type	Description
direction	String	• Specifies the direction of access control. • Possible values are as follows: – **egress** – **ingress**
ethertype	String	• Specifies the IP protocol version. • The value can be **IPv4** or **IPv6**.
protocol	String	• Specifies the protocol type. • The value can be **icmp**, **tcp**, **udp**, or an IP protocol number (0 to 255, for example, 47 for GRE) • If the parameter is left blank, all protocols are supported.
port_range_min	Integer	• Specifies the start port number. • The value ranges from 1 to 65535. • The value cannot be greater than the **port_range_max** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.
port_range_max	Integer	• Specifies the end port number. • The value ranges from 1 to 65535. • If the protocol is not **icmp**, the value cannot be smaller than the **port_range_min** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.

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Parameter	Type	Description
remote_ip_prefix	String	• Specifies the remote IP address. If the access control direction is set to **egress**, the parameter specifies the source IP address. If the access control direction is set to **ingress**, the parameter specifies the destination IP address. • The value can be in the CIDR format or IP addresses. • The parameter value is mutually exclusive with parameters **remote_group_id** and **remote_address_group_id**.
remote_group_id	String	• Specifies the ID of the peer security group. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_address_group_id**.
remote_address_group_id	String	• Specifies the remote IP address group ID. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.
tenant_id	String	• Specifies the ID of the project to which the security group rule belongs.

Example Response


```
{
   "security_groups": [
      {
         "id": "16b6e77a-08fa-42c7-aa8b-106c048884e6",
         "name": "qq",
         "description": "qq",
         "vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",
         "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2",
         "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,
```


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```
            "remote_address_group_id": null,
            "port_range_max": null,
            "port_range_min": null
        },
        {
            "id": "3d6480e8-9ea4-46dc-bb1b-8db190cd5677",
            "tenant_id": "060576782980d5762f9ec014dd2f1148",
            "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
            "remote_group_id": null,
            "direction": "egress",
            "protocol": null,
            "description": "",
            "ethertype": "IPv6",
            "remote_ip_prefix": null,
            "remote_address_group_id": null,
            "port_range_max": null,
            "port_range_min": null
        },
        {
            "id": "9581f18c-1fdd-43da-ace9-7758a56ef28a",
            "tenant_id": "060576782980d5762f9ec014dd2f1148",
            "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
            "remote_group_id": null,
            "direction": "egress",
            "protocol": null,
            "description": "",
            "ethertype": "IPv4",
            "remote_ip_prefix": null,
            "remote_address_group_id": null,
            "port_range_max": null,
            "port_range_min": null
        },
        {
            "id": "a3ba270e-e58b-432d-a912-aeb7eace9fb8",
            "tenant_id": "060576782980d5762f9ec014dd2f1148",
            "security_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
            "remote_group_id": "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
            "direction": "ingress",
            "protocol": null,
            "description": "",
            "ethertype": "IPv4",
            "remote_ip_prefix": null,
            "remote_address_group_id": null,
            "port_range_max": null,
            "port_range_min": null
        }
    ]
},
    {
        "id": "9c0f56be-a9ac-438c-8c57-fce62de19419",
        "name": "default",
        "description": "qq",
        "vpc_id": "13551d6b-755d-4757-b956-536f674975c0",
        "enterprise_project_id": "0",
        "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"
```


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```
        }
      ]
    }
  ]
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.5.4 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 4-75 describes the parameters.

Table 4-75 Parameter description

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

Request Parameters

None

Example Request

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

Response Parameters

None

Example Response

None

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Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.5.5 Adding a Security Group Rule

Function

This API is used to add a security group rule.

URI

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

Request Parameters

Table 4-76 Request parameter

Parameter	Mandatory	Type	Description
security_group_rule	Yes	**security_group_rule** object	Specifies the security group rule objects. For details, see **Table 4-77**.

Table 4-77 Description of the **security_group_rule** field

Parameter	Mandatory	Type	Description
security_group_id	Yes	String	Specifies the security group ID.
description	No	String	• Provides supplementary information about the security group rule. • The value can contain no more than 255 characters, including letters and digits.
direction	Yes	String	• Access control direction specified in a security group rule. • The value can be: – **egress** – **ingress**

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Parameter	Mandatory	Type	Description
ethertype	No	String	• Specifies the IP protocol version. • The value can be **IPv4** or **IPv6**. • If you do not set this parameter, **IPv4** is used by default.
protocol	No	String	• Specifies the protocol type. • The value can be **icmp**, **tcp**, **udp**, or an IP protocol number (0 to 255, for example, 47 for GRE) • If the parameter is left blank, all protocols are supported.
port_range_min	No	Integer	• Specifies the start port number. • The value ranges from 1 to 65535. • The value cannot be greater than the **port_range_max** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.
port_range_max	No	Integer	• Specifies the end port number. • The value ranges from 1 to 65535. • If the protocol is not **icmp**, the value cannot be smaller than the **port_range_min** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.

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Parameter	Mandatory	Type	Description
remote_ip_prefix	No	String	• Specifies the remote IP address. If the access control direction is set to **egress**, the parameter specifies the source IP address. If the access control direction is set to **ingress**, the parameter specifies the destination IP address. • The value can be in the CIDR format or IP addresses. • Constraints: The parameter is mutually exclusive with **remote_group_id** and **remote_address_group_id**.
remote_group_id	No	String	• Specifies the ID of the peer security group. • Constraints: The parameter is mutually exclusive with **remote_ip_prefix** and **remote_address_group_id**.
remote_address_group_id	No	String	• Specifies the remote IP address group ID. You can log in to the management console and view the ID on the IP address group page. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.

Example Request

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

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

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

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```
        "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 4-78 Response parameter

Parameter	Type	Description
security_group_rule	**security_group_rule** object	Specifies the security group rule objects. For details, see **Table 4-79**.

Table 4-79 security_group_rule objects

Parameter	Type	Description
id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
description	String	• Provides supplementary information about the security group rule. • The value can contain no more than 255 characters, including letters and digits.
security_group_id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
direction	String	• Specifies the direction of access control. • Possible values are as follows: – **egress** – **ingress**

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Parameter	Type	Description
ethertype	String	• Specifies the IP protocol version. • The value can be **IPv4** or **IPv6**.
protocol	String	• Specifies the protocol type. • The value can be **icmp**, **tcp**, **udp**, or an IP protocol number (0 to 255, for example, 47 for GRE) • If the parameter is left blank, all protocols are supported.
port_range_min	Integer	• Specifies the start port number. • The value ranges from 1 to 65535. • The value cannot be greater than the **port_range_max** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.
port_range_max	Integer	• Specifies the end port number. • The value ranges from 1 to 65535. • If the protocol is not **icmp**, the value cannot be smaller than the **port_range_min** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.
remote_ip_prefix	String	• Specifies the remote IP address. If the access control direction is set to **egress**, the parameter specifies the source IP address. If the access control direction is set to **ingress**, the parameter specifies the destination IP address. • The value can be in the CIDR format or IP addresses. • The parameter value is mutually exclusive with parameters **remote_group_id** and **remote_address_group_id**.

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Parameter	Type	Description
remote_group_id	String	• Specifies the ID of the peer security group. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_address_group_id**.
remote_address_group_id	String	• Specifies the remote IP address group ID. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.
tenant_id	String	• Specifies the ID of the project to which the security group rule belongs.

Example Response

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

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.5.6 Querying Security Group Rule Details

Function

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

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URI

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

Table 4-80 describes the parameters.

Table 4-80 Parameter description

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

Request Parameters

None

Example Request

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

Response Parameters

Table 4-81 Response parameter

Parameter	Type	Description
security_group_rule	**security_group_rule** object	Specifies the security group rule objects. For details, see **Table 4-82**.

Table 4-82 security_group_rule objects

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

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Parameter	Type	Description
description	String	• Provides supplementary information about the security group rule. • The value can contain no more than 255 characters, including letters and digits.
security_group_id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
direction	String	• Specifies the direction of access control. • Possible values are as follows: – **egress** – **ingress**
ethertype	String	• Specifies the IP protocol version. • The value can be **IPv4** or **IPv6**.
protocol	String	• Specifies the protocol type. • The value can be **icmp**, **tcp**, **udp**, or an IP protocol number (0 to 255, for example, 47 for GRE) • If the parameter is left blank, all protocols are supported.
port_range_min	Integer	• Specifies the start port number. • The value ranges from 1 to 65535. • The value cannot be greater than the **port_range_max** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.

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Parameter	Type	Description
port_range_max	Integer	• Specifies the end port number. • The value ranges from 1 to 65535. • If the protocol is not **icmp**, the value cannot be smaller than the **port_range_min** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.
remote_ip_prefix	String	• Specifies the remote IP address. If the access control direction is set to **egress**, the parameter specifies the source IP address. If the access control direction is set to **ingress**, the parameter specifies the destination IP address. • The value can be in the CIDR format or IP addresses. • The parameter value is mutually exclusive with parameters **remote_group_id** and **remote_address_group_id**.
remote_group_id	String	• Specifies the ID of the peer security group. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_address_group_id**.
remote_address_group_id	String	• Specifies the remote IP address group ID. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.
tenant_id	String	• Specifies the ID of the project to which the security group rule belongs.

Example Response

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

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


Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.5.7 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 4-83 describes the parameters.

Table 4-83 Parameter description

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

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Parameter	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. ● If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. ● If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. ● If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. ● If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.

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

Request Parameters

None

Example Request

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

Response Parameters

Parameter	Type	Description
security_group_rules	Array of **security_group_rule** objects	Specifies the security group rule objects. For details, see **Table 4-84**.

Table 4-84 security_group_rule objects

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

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Parameter	Type	Description
description	String	• Provides supplementary information about the security group rule. • The value can contain no more than 255 characters, including letters and digits.
security_group_id	String	Specifies the security group rule ID, which uniquely identifies the security group rule.
direction	String	• Specifies the direction of access control. • Possible values are as follows: – **egress** – **ingress**
ethertype	String	• Specifies the IP protocol version. • The value can be **IPv4** or **IPv6**.
protocol	String	• Specifies the protocol type. • The value can be **icmp**, **tcp**, **udp**, or an IP protocol number (0 to 255, for example, 47 for GRE) • If the parameter is left blank, all protocols are supported.
port_range_min	Integer	• Specifies the start port number. • The value ranges from 1 to 65535. • The value cannot be greater than the **port_range_max** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.

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Parameter	Type	Description
port_range_max	Integer	• Specifies the end port number. • The value ranges from 1 to 65535. • If the protocol is not **icmp**, the value cannot be smaller than the **port_range_min** value. An empty value indicates all ports. If the protocol is **icmp**, the value range is shown in **ICMP-Port Range Relationship Table**.
remote_ip_prefix	String	• Specifies the remote IP address. If the access control direction is set to **egress**, the parameter specifies the source IP address. If the access control direction is set to **ingress**, the parameter specifies the destination IP address. • The value can be in the CIDR format or IP addresses. • The parameter value is mutually exclusive with parameters **remote_group_id** and **remote_address_group_id**.
remote_group_id	String	• Specifies the ID of the peer security group. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_address_group_id**.
remote_address_group_id	String	• Specifies the remote IP address group ID. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.
tenant_id	String	• Specifies the ID of the project to which the security group rule belongs.

Example Response

```
{
  "security_group_rules": [
    {
```


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```
        "direction": "egress",
        "ethertype": "IPv6",
        "id": "3c0e45ff-adaf-4124-b083-bf390e5482ff",
        "description": "",
        "port_range_max": null,
        "port_range_min": null,
        "protocol": null,
        "remote_group_id": null,
        "remote_ip_prefix": null,
        "security_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
        "tenant_id": "e4f50856753b4dc6afee5fa6b9b6c550",
        "remote_address_group_id": null
    },
    {
        "direction": "egress",
        "ethertype": "IPv4",
        "id": "93aa42e5-80db-4581-9391-3a608bd0e448",
        "description": "",
        "port_range_max": null,
        "port_range_min": null,
        "protocol": null,
        "remote_group_id": null,
        "remote_ip_prefix": null,
        "security_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
        "tenant_id": "e4f50856753b4dc6afee5fa6b9b6c550",
        "remote_address_group_id": null
    },
    {
        "direction": "ingress",
        "ethertype": "IPv6",
        "id": "c0b09f00-1d49-4e64-a0a7-8a186d928138",
        "description": "",
        "port_range_max": null,
        "port_range_min": null,
        "protocol": null,
        "remote_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
        "remote_ip_prefix": null,
        "security_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
        "tenant_id": "e4f50856753b4dc6afee5fa6b9b6c550",
        "remote_address_group_id": null
    },
    {
        "direction": "ingress",
        "ethertype": "IPv4",
        "id": "f7d45c89-008e-4bab-88ad-d6811724c51c",
        "description": "",
        "port_range_max": null,
        "port_range_min": null,
        "protocol": null,
        "remote_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
        "remote_ip_prefix": null,
        "security_group_id": "85cc3048-abc3-43cc-89b3-377341426ac5",
        "tenant_id": "e4f50856753b4dc6afee5fa6b9b6c550",
        "remote_address_group_id": null
    }
  ]
}
```


Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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4.5.8 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 4-85 describes the parameters.

Table 4-85 Parameter description

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

Request Parameters

None

Example Request

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

Response Parameters

None

Example Response

None

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.6 Port

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4.6.1 Creating a Port

Function

This API is used to create a port that carries private IP addresses of a subnet. The port can be allocated to other cloud service resources, such as an ECS or a virtual IP address.

URI

POST /v1/{project_id}/ports

Table 4-86 describes the parameters.

Table 4-86 Parameter description

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

Request Parameters

Table 4-87 Request parameter

Parameter	Mandatory	Type	Description
port	Yes	**port** object	Specifies the port objects. For details, see **Table 4-88**.

Table 4-88 Description of the **port** field

Parameter	Mandatory	Type	Description
name	No	String	• Specifies the port name. • The value can contain up to 255 characters. This parameter is left blank by default.
network_id	Yes	String	• Specifies the ID of the network that the port belongs to. • The network ID must exist.

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Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	• Specifies the administrative state of the port. • The default value is **true**.
device_owner	No	String	• Definition: Specifies the device that the port belongs to, that is, a cloud service resource that uses a private IP address in the subnet. • Range: Currently, only **""** and **neutron:VIP_PORT** are supported. **neutron:VIP_PORT** indicates the port of a virtual IP address.
fixed_ips	No	Array of **fixed_ip** objects	• Specifies the port IP address. For example, the value is **"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]**. For details, see **Table 4-89**. • A port supports only one fixed IP address that cannot be changed.
tenant_id	No	String	Specifies the project ID.
security_groups	No	Array of strings	Specifies the UUID of the security group, for example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. This is an extended attribute.

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Parameter	Mandatory	Type	Description
allowed_address_pairs	No	Array of **allowed_address_pairs** objects	• 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 **allowed_address_pair** in **Table 4-90**. • The IP address cannot be **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • If the virtual IP address is bound to a cloud server: – The value of **mac_address** can be left blank or set to the MAC address of the NIC bound to the cloud server. – Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.
extra_dhcp_opts	No	Array of **extra_dhcp_opt** objects	Specifies the extended option (extended attribute) of DHCP. For details, see **Table 4-91**.

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Table 4-89 fixed_ip objects

Parameter	Mandatory	Type	Description
subnet_id	No	String	• Specifies the subnet ID. If you use the management console, the value of this parameter is the **IPv4 Subnet ID** or **IPv6 Subnet ID** value. • You cannot change the parameter value.
ip_address	No	String	• Specifies the port IP address. • You cannot change the parameter value.

Table 4-90 allowed_address_pairs objects

Parameter	Mandatory	Type	Description
ip_address	Yes	String	• Specifies the IP address. • You cannot set it to **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**. • If the value of parameter **allowed_address_pairs** is specified, parameter **ip_address** is mandatory.
mac_address	No	String	Specifies the MAC address. By default, the MAC address of the local port is used.

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Table 4-91 extra_dhcp_opt object

Parameter	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 of the IPv4 network interface. If the value of this parameter is set to **651**, indicating the DHCP lease time of the IPv6 network interface.
opt_value	No	String	• Specifies the value of the DHCP option. • If the value of **opt_name** is **51** or **651**, the value format of **opt_value** is *X***h**, indicating that the DHCP lease time is *X* hours. • The value of *X* is **-1** or from **1** to **175200**. If the value is **-1**, the DHCP lease time is infinite.

Example Request

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

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

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

Response Parameters

Table 4-92 Response parameter

Parameter	Type	Description
port	**port** object	Specifies the port objects. For details, see **Table 4-93**.

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Table 4-93 Description of the **port** field

Parameter	Type	Description
id	String	Specifies the port ID that uniquely identifies the port.
name	String	• Specifies the port name. • The value can contain up to 255 characters. This parameter is left blank by default.
network_id	String	• Specifies the ID of the network that the port belongs to. • The network ID must exist.
admin_state_up	Boolean	• Specifies the administrative state of the port. • The default value is **true**.
mac_address	String	• Specifies the MAC address of the port. • The MAC address is assigned by the system not specified by users.
fixed_ips	Array of **fixed_ip** objects	• Specifies the port IP address. For example, the value is **"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]**. For details, see **Table 4-94**. • In IPv4 scenarios, a port supports only one fixed IP address that cannot be changed. In IPv6 scenarios, a port supports a maximum of two fixed IP addresses that cannot be changed.
device_id	String	• Definition: Specifies the ID of the device that the port belongs to. The device ID indicates the ID of the cloud service resource that uses the private IP address in the subnet, for example, the cloud server ID or load balancer ID.

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Parameter	Type	Description
device_owner	String	• Definition: Specifies the device that the port belongs to, that is, a cloud service resource that uses a private IP address in the subnet. • Range: – **network:dhcp**: DHCP service – **network:router_interface_distributed**: Subnet gateway address – **compute:***xxx*: Private IP address of a cloud server network interface. *XXX* specifies the AZ name. For example, **compute:aa-bb-cc** indicates that the private IP address is used by a cloud server in the AZ aa-bb-cc. – **neutron:VIP_PORT**: Virtual IP address – **neutron:LOADBALANCERV2**: Shared load balancer – **neutron:LOADBALANCERV3**: Dedicated load balancer – **network:endpoint_interface**: VPC endpoint – **network:nat_gateway**: NAT gateway – **network:ucmp**: UCMP port, which is used by Enterprise Router.
tenant_id	String	Specifies the project ID.
status	String	• Specifies the port status. The status of a HANA SR-IOV VM port is always **DOWN**. • The value can be **ACTIVE**, **BUILD**, or **DOWN**.
security_groups	Array of strings	Specifies the security group UUID (extended attribute).

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Parameter	Type	Description
allowed_address_pairs	Array of **allowed_address_pairs** objects	• Specifies a set of zero or more allowed address pairs. An address pair consists of an IP address and MAC address. For details, see **Table 4-95**. • The IP address cannot be **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**. • If the value of **allowed_address_pairs** is the IP address of the ECS NIC, the port corresponding to the virtual IP address is bound.
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the extended option (extended attribute) of DHCP. For details, see **Table 4-96**.
binding:vif_details	**binding:vif_details** object	For details, see **Table 4-97**.

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Parameter	Type	Description
binding:profile	Object	Specifies the user-defined settings. This is an extended attribute. Note: • The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. Common tenants do not have the permission to change the value of this field, which is maintained by the system. Example: {"internal_elb": true} • The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true } Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.
binding:vnic_type	String	• Specifies the type of the bound vNIC. • **normal** indicates software switching. **direct** indicates SR-IOV PCIe passthrough, which is not supported.
dns_assignment	Array of **dns_assignment** objects	• Specifies the default private network domain name information of the primary NIC. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.

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Parameter	Type	Description
dns_name	String	• Specifies the default private network DNS name of the primary NIC. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
instance_id	String	• Specifies the ID of the instance to which the port belongs, for example, RDS instance ID. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
instance_type	String	• Specifies the type of the instance to which the port belongs, for example, RDS. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
port_security_enabled	Boolean	• 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.
zone_id	String	Specifies the availability zone that the port belongs to.
ipv6_bandwidth_id	String	• Specifies the ID of the shared bandwidth associated with the IPv6 network interface. • This parameter is displayed only when the IPv6 network interface is associated with a shared bandwidth.

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Table 4-94 fixed_ip object

Parameter	Type	Description
subnet_id	String	• Specifies the subnet ID. If you use the management console, the value of this parameter is the **IPv4 Subnet ID** or **IPv6 Subnet ID** value. • You cannot change the parameter value.
ip_address	String	Specifies the port IP address.

Table 4-95 allowed_address_pairs objects

Parameter	Type	Description
ip_address	String	• Specifies the IP address. • You cannot set it to **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.
mac_address	String	Specifies the MAC address. By default, the MAC address of the local port is used.

Table 4-96 extra_dhcp_opt object

Parameter	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 of the IPv4 network interface. If the value of this parameter is set to **651**, indicating the DHCP lease time of the IPv6 network interface.

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Parameter	Type	Description
opt_value	String	• Specifies the value of the DHCP option. • If the value of **opt_name** is **51** or **651**, the value format of **opt_value** is *X***h**, indicating that the DHCP lease time is *X* hours. • The value of *X* is **-1** or from **1** to **175200**. If the value is **-1**, the DHCP lease time is infinite.

Table 4-97 binding:vif_details object

Parameter	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 4-98 dns_assignment object

Parameter	Type	Description
hostname	String	Specifies the host name of the port.
ip_address	String	Specifies the port IP address.
fqdn	String	Specifies the private network fully qualified domain name (FQDN) of the port.

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"
            }
```

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```
    ],
    "dns_name": "",
    "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**.

4.6.2 Querying a Port

Function

This API is used to query a single port. A port is used to carry private IP addresses in a subnet.

URI

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

Table 4-99 describes the parameters.

Table 4-99 Parameter description

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

Request Parameters

None

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Example Request

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

Response Parameters

Table 4-100 Response parameter

Parameter	Type	Description
port	**port** object	Specifies the port objects. For details, see **Table 4-101**.

Table 4-101 Description of the **port** field

Parameter	Type	Description
id	String	Specifies the port ID that uniquely identifies the port.
name	String	• Specifies the port name. • The value can contain up to 255 characters. This parameter is left blank by default.
network_id	String	• Specifies the ID of the network that the port belongs to. • The network ID must exist.
admin_state_up	Boolean	• Specifies the administrative state of the port. • The default value is **true**.
mac_address	String	• Specifies the port MAC address. • The MAC address is assigned by the system not specified by users.
fixed_ips	Array of **fixed_ip** objects	• Specifies the port IP address. For example, the value is **"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]**. For details, see **Table 4-102**. • 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.

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Parameter	Type	Description
device_id	String	• Definition: Specifies the ID of the device that the port belongs to. The device ID indicates the ID of the cloud service resource that uses the private IP address in the subnet, for example, the cloud server ID or load balancer ID.
device_owner	String	• Definition: Specifies the device that the port belongs to, that is, a cloud service resource that uses a private IP address in the subnet. • Range: – **network:dhcp**: DHCP service – **network:router_interface_distributed**: Subnet gateway address – **compute:***xxx*: Private IP address of a cloud server network interface. *XXX* specifies the AZ name. For example, **compute:aa-bb-cc** indicates that the private IP address is used by a cloud server in the AZ aa-bb-cc. – **neutron:VIP_PORT**: Virtual IP address – **neutron:LOADBALANCERV2**: Shared load balancer – **neutron:LOADBALANCERV3**: Dedicated load balancer – **network:endpoint_interface**: VPC endpoint – **network:nat_gateway**: NAT gateway – **network:ucmp**: UCMP port, which is used by Enterprise Router.
tenant_id	String	Specifies the project ID.
status	String	• Specifies the port status. The status of a HANA SR-IOV VM port is always **DOWN**. • The value can be **ACTIVE**, **BUILD**, or **DOWN**. If the value of **allowed_address_pairs** is the IP address of the ECS NIC, the port corresponding to the virtual IP address is bound.
security_groups	Array of strings	Specifies the security group UUID (extended attribute).

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Parameter	Type	Description
allowed_address_pairs	Array of **allowed_address_pairs** objects	• Specifies a set of zero or more allowed address pairs. An address pair consists of an IP address and MAC address. For details, see **Table 4-103**. • The IP address cannot be **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the extended option (extended attribute) of DHCP. For details, see **Table 4-104**.
binding:vif_details	**binding:vif_details** object	For details, see **Table 4-105**.

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Parameter	Type	Description
binding:profile	Object	Specifies the user-defined settings. This is an extended attribute. Note: • The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. Common tenants do not have the permission to change the value of this field, which is maintained by the system. Example: {"internal_elb": true} • The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true } Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.
binding:vnic_type	String	• Specifies the type of the bound vNIC. • The value can be **normal** or **direct**. • **normal** indicates software switching. **direct** indicates SR-IOV PCIe passthrough, which is not supported.
dns_assignment	Array of **dns_assignment** objects	• Specifies the default private domain name information of the primary NIC. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.

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Parameter	Type	Description
dns_name	String	• Specifies the default private network DNS name of the primary NIC. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
instance_id	String	• Specifies the ID of the instance to which the port belongs, for example, RDS instance ID. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
instance_type	String	• Specifies the type of the instance to which the port belongs, for example, RDS. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
port_security_enabled	Boolean	• 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.
zone_id	String	Specifies the availability zone that the port belongs to.
ipv6_bandwidth_id	String	• Specifies the ID of the shared bandwidth associated with the IPv6 network interface. • This parameter is displayed only when the IPv6 network interface is associated with a shared bandwidth.

Table 4-102 fixed_ip object

Parameter	Type	Description
subnet_id	String	• Specifies the subnet ID. If you use the management console, the value of this parameter is the **IPv4 Subnet ID** or **IPv6 Subnet ID** value. • You cannot change the parameter value.

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Parameter	Type	Description
ip_address	String	Specifies the port IP address.

Table 4-103 allowed_address_pairs objects

Parameter	Type	Description
ip_address	String	• Specifies the IP address. • You cannot set it to **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.
mac_address	String	Specifies the MAC address. By default, the MAC address of the local port is used.

Table 4-104 extra_dhcp_opt object

Parameter	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 of the IPv4 network interface. If the value of this parameter is set to **651**, indicating the DHCP lease time of the IPv6 network interface.
opt_value	String	• Specifies the value of the DHCP option. • If the value of **opt_name** is **51** or **651**, the value format of **opt_value** is *X***h**, indicating that the DHCP lease time is *X* hours. • The value of *X* is **-1** or from **1** to **175200**. If the value is **-1**, the DHCP lease time is infinite.

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Table 4-105 binding:vif_details object

Parameter	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 4-106 dns_assignment object

Parameter	Type	Description
hostname	String	Specifies the host name of the port.
ip_address	String	Specifies the port IP address.
fqdn	String	Specifies the private network fully qualified domain name (FQDN) of the port.

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"
            }
        ],
        "dns_name": "",
        "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"
    }
}
```


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Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.6.3 Querying Ports

Function

This API is used to query multiple ports. The ports are used to carry private IP addresses in a subnet.

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_address={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}&limit=10&marker={marker}
```

Table 4-107 describes the parameters.

Table 4-107 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
id	No	String	• Specifies the port ID that is used as the filter.
name	No	String	• Specifies the port name that is used as the filter. • The value can contain up to 255 characters.
admin_state_up	No	Boolean	• Specifies the administrative state that is used as the filter. • The value can be **true** or **false**.
network_id	No	String	• Specifies the network ID that is used as the filter.

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Parameter	Mandatory	Type	Description
mac_address	No	String	• Specifies the MAC address that is used as the filter.
device_id	No	String	• Definition: Specifies the device ID that is used as the filter. The port belongs to the device with the ID. The device ID indicates the ID of the cloud service resource that uses the private IP address in the subnet, for example, the cloud server ID or load balancer ID.
device_owner	No	String	• Definition: Specifies the device owner that is used as the filter. The port belongs to the device, that is, a cloud service resource that uses a private IP address in the subnet. • For details about value range, see parameter **device_owner** in **Table 4-109**.
status	No	String	• Specifies the status of the port that is used as the filter. • The value can be **ACTIVE**, **BUILD**, or **DOWN**.
security_groups	No	Array of strings	• Specifies the UUID of the security group that is used as the filter.

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Parameter	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.

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Parameter	Mandatory	Type	Description
fixed_ips	No	Array of strings	• Specifies the port IP address or the ID of the subnet that the port belongs to that is used as the filter. • The value can be **fixed_ips=ip_address={ip_address}** or **fixed_ips=subnet_id={subnet_id}**. Set *{ip_address}* to an IP address, for example, 192.168.21.22. Set *{subnet_id}* to an IPv4 or IPv6 subnet ID, for example, 011fc878-5521-4654-a1ad-f5b0b5820302.
enterprise_project_id	No	String	• Specifies the enterprise project ID that is used as the filter. • The value can be **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). Value **0** indicates the default enterprise project. To obtain the ports bound to all enterprise projects of the user, set **all_granted_eps**. **NOTE**
enable_efi	No	Boolean	• Whether **efi** is enabled is used as the filter. • The value can be **true** or **false**.

Request Parameters

None

Example Request

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

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Response Parameters

Table 4-108 Response parameter

Parameter	Type	Description
ports	Array of **port** objects	Specifies the port objects. For details, see **Table 4-109**.

Table 4-109 Description of the **port** field

Parameter	Type	Description
id	String	Specifies the port ID that uniquely identifies the port.
name	String	• Specifies the port name. • The value can contain up to 255 characters. This parameter is left blank by default.
network_id	String	• Specifies the ID of the network that the port belongs to. • The network ID must exist.
admin_state_up	Boolean	• Specifies the administrative state of the port. • The default value is **true**.
mac_address	String	• Specifies the port MAC address. • The MAC address is assigned by the system not specified by users.
fixed_ips	Array of **fixed_ip** objects	• Specifies the port IP address. For example, the value is **"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]**. For details, see **Table 4-110**. • In IPv4 scenarios, a port supports only one fixed IP address that cannot be changed. In IPv6 scenarios, a port supports a maximum of two fixed IP addresses that cannot be changed.
device_id	String	• Definition: Specifies the ID of the device that the port belongs to. The device ID indicates the ID of the cloud service resource that uses the private IP address in the subnet, for example, the cloud server ID or load balancer ID.

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Parameter	Type	Description
device_owner	String	• Definition: Specifies the device that the port belongs to, that is, a cloud service resource that uses a private IP address in the subnet. • Range: – **network:dhcp**: DHCP service – **network:router_interface_distributed**: Subnet gateway address – **compute:***xxx*: Private IP address of a cloud server network interface. *XXX* specifies the AZ name. For example, **compute:aa-bb-cc** indicates that the private IP address is used by a cloud server in the AZ aa-bb-cc. – **neutron:VIP_PORT**: Virtual IP address – **neutron:LOADBALANCERV2**: Shared load balancer – **neutron:LOADBALANCERV3**: Dedicated load balancer – **network:endpoint_interface**: VPC endpoint – **network:nat_gateway**: NAT gateway – **network:ucmp**: UCMP port, which is used by Enterprise Router.
tenant_id	String	Specifies the project ID.
status	String	• Specifies the port status. The status of a HANA SR-IOV VM port is always **DOWN**. • The value can be **ACTIVE**, **BUILD**, or **DOWN**.
security_groups	Array of strings	Specifies the security group UUID (extended attribute).

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Parameter	Type	Description
allowed_address_pairs	Array of **allowed_address_pairs** objects	• Specifies a set of zero or more allowed address pairs. An address pair consists of an IP address and MAC address. For details, see **Table 4-111**. • The IP address cannot be **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**. • If the value of **allowed_address_pairs** is the IP address of the ECS NIC, the port corresponding to the virtual IP address is bound.
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the extended option (extended attribute) of DHCP. For details, see **Table 4-112**.
binding:vif_details	**binding:vif_details** object	For details, see **Table 4-113**.

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Parameter	Type	Description
binding:profile	Object	Specifies the user-defined settings. This is an extended attribute. Note: • The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. Common tenants do not have the permission to change the value of this field, which is maintained by the system. Example: {"internal_elb": true} • The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true } Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.
binding:vnic_type	String	• Specifies the type of the bound vNIC. • **normal** indicates software switching. **direct** indicates SR-IOV PCIe passthrough, which is not supported.
dns_assignment	Array of **dns_assignment** objects	• Specifies the default private domain name information of the primary NIC. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.

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Parameter	Type	Description
dns_name	String	• Specifies the default private network DNS name of the primary NIC. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
instance_id	String	• Specifies the ID of the instance to which the port belongs, for example, RDS instance ID. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
instance_type	String	• Specifies the type of the instance to which the port belongs, for example, RDS. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
port_security_enabled	Boolean	• 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.
zone_id	String	Specifies the availability zone that the port belongs to.
ipv6_bandwidth_id	String	• Specifies the ID of the shared bandwidth associated with the IPv6 network interface. • This parameter is displayed only when the IPv6 network interface is associated with a shared bandwidth.

Table 4-110 fixed_ip object

Parameter	Type	Description
subnet_id	String	• Specifies the subnet ID. If you use the management console, the value of this parameter is the **IPv4 Subnet ID** or **IPv6 Subnet ID** value. • You cannot change the parameter value.

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Parameter	Type	Description
ip_address	String	Specifies the port IP address.

Table 4-111 allowed_address_pairs objects

Parameter	Type	Description
ip_address	String	• Specifies the IP address. • You cannot set it to **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.
mac_address	String	Specifies the MAC address. By default, the MAC address of the local port is used.

Table 4-112 extra_dhcp_opt object

Parameter	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 of the IPv4 network interface. If the value of this parameter is set to **651**, indicating the DHCP lease time of the IPv6 network interface.
opt_value	String	• Specifies the value of the DHCP option. • If the value of **opt_name** is **51** or **651**, the value format of **opt_value** is *X***h**, indicating that the DHCP lease time is *X* hours. • The value of *X* is **-1** or from **1** to **175200**. If the value is **-1**, the DHCP lease time is infinite.

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Table 4-113 binding:vif_details object

Parameter	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 4-114 dns_assignment object

Parameter	Type	Description
hostname	String	Specifies the host name of the port.
ip_address	String	Specifies the port IP address.
fqdn	String	Specifies the private network fully qualified domain name (FQDN) of the port.

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"
            }
         ],
         "dns_name": "",
         "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"
      },
      {
```


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```
        "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"
           }
        ],
        "dns_name": "",
        "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**.

4.6.4 Updating a Port

Function

This API is used to update a port. For example, you can update the security group of the cloud service resource that the port belongs to and associate the port with an ECS or virtual IP address.

URI

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

Table 4-115 describes the parameters.

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Table 4-115 Parameter description

Parameter	Mandatory	Description
port_id	Yes	Specifies the port ID that uniquely identifies the port. For example, if this API is used to change the security group of an ECS, **port_id** is the ID of the ECS network interface.
project_id	Yes	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

Request Parameters

Parameter	Mandatory	Type	Description
port	Yes	**port** object	Specifies the port objects. For details, see **Table 4-116**. You must specify at least one attribute when updating a port.

Table 4-116 Description of the **port** field

Parameter	Mandatory	Type	Description
name	No	String	• Specifies the port name. • The value can contain up to 255 characters. This parameter is left blank by default.
security_groups	No	Array of strings	• Specifies the UUID of the security group. This is an extended attribute. • This parameter cannot be left blank.

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Parameter	Mandatory	Type	Description
allowed_address_pairs	No	Array of **allowed_address_pairs** objects	• 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 **allow_address_pair** in **Table 4-117**. • The IP address cannot be **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • To assign a virtual IP address to an ECS, the IP address configured in **allowed_address_pairs** must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.
extra_dhcp_opts	No	Array of **extra_dhcp_opt** objects	Specifies the extended option (extended attribute) of DHCP. For details, see **Table 4-118**.

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Table 4-117 allowed_address_pairs objects

Parameter	Mandatory	Type	Description
ip_address	Yes	String	• Specifies the IP address. • You cannot set it to **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**. • If the value of parameter **allowed_address_pairs** is specified, parameter **ip_address** is mandatory.
mac_address	No	String	Specifies the MAC address. By default, the MAC address of the local port is used.

Table 4-118 extra_dhcp_opt objects

Parameter	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 of the IPv4 network interface. If the value of this parameter is set to **651**, indicating the DHCP lease time of the IPv6 network interface.

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Parameter	Mandatory	Type	Description
opt_value	No	String	• Specifies the value of the DHCP option. • If the value of **opt_name** is **51** or **651**, the value format of **opt_value** is *X***h**, indicating that the DHCP lease time is *X* hours. • The value of *X* is **-1** or from **1** to **175200**. If the value is **-1**, the DHCP lease time is infinite.

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": "abc"
   }
}
```

Response Parameters

Table 4-119 Response parameter

Parameter	Type	Description
port	**port** object	Specifies the port objects. For details, see **Table 4-120**.

Table 4-120 Description of the **port** field

Parameter	Type	Description
id	String	Specifies the port ID that uniquely identifies the port.
name	String	• Specifies the port name. • The value can contain up to 255 characters. This parameter is left blank by default.
network_id	String	• Specifies the ID of the network that the port belongs to. • The network ID must exist.

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Parameter	Type	Description
admin_state_up	Boolean	• Specifies the administrative state of the port. • The default value is **true**.
mac_address	String	• Specifies the port MAC address. • The MAC address is assigned by the system not specified by users.
fixed_ips	Array of **fixed_ip** objects	• Specifies the port IP address. For details, see **Table 4-121**. For example, the value is **"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]**. • In IPv4 scenarios, a port supports only one fixed IP address that cannot be changed. In IPv6 scenarios, a port supports a maximum of two fixed IP addresses that cannot be changed.
device_id	String	• Definition: Specifies the ID of the device that the port belongs to. The device ID indicates the ID of the cloud service resource that uses the private IP address in the subnet, for example, the cloud server ID or load balancer ID.

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Parameter	Type	Description
device_owner	String	• Definition: Specifies the device that the port belongs to, that is, a cloud service resource that uses a private IP address in the subnet. • Range: – **network:dhcp**: DHCP service – **network:router_interface_distributed**: Subnet gateway address – **compute:***xxx*: Private IP address of a cloud server network interface. *XXX* specifies the AZ name. For example, **compute:aa-bb-cc** indicates that the private IP address is used by a cloud server in the AZ aa-bb-cc. – **neutron:VIP_PORT**: Virtual IP address – **neutron:LOADBALANCERV2**: Shared load balancer – **neutron:LOADBALANCERV3**: Dedicated load balancer – **network:endpoint_interface**: VPC endpoint – **network:nat_gateway**: NAT gateway – **network:ucmp**: UCMP port, which is used by Enterprise Router.
tenant_id	String	Specifies the project ID.
status	String	• Specifies the port status. The status of a HANA SR-IOV VM port is always **DOWN**. • The value can be **ACTIVE**, **BUILD**, or **DOWN**.
security_groups	Array of strings	Specifies the security group UUID (extended attribute).

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Parameter	Type	Description
allowed_address_pairs	Array of **allowed_address_pairs** objects	• Specifies a set of zero or more allowed address pairs. An address pair consists of an IP address and a MAC address. For details, see **Table 4-122**. • The IP address cannot be **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • If the value of **allowed_address_pairs** is the IP address of the ECS NIC, the port corresponding to the virtual IP address is bound. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the extended option (extended attribute) of DHCP. For details, see **Table 4-123**.
binding:vif_details	**binding:vif_details** object	For details, see **Table 4-124**.

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Parameter	Type	Description
binding:profile	Object	Specifies the user-defined settings. This is an extended attribute. Note: • The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. Common tenants do not have the permission to change the value of this field, which is maintained by the system. Example: {"internal_elb": true} • The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true } Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.
binding:vnic_type	String	• Specifies the type of the bound vNIC. • **normal** indicates software switching. **direct** indicates SR-IOV PCIe passthrough, which is not supported.
dns_assignment	Array of **dns_assignment** objects	• Specifies the default private domain name information of the primary NIC. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.

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Parameter	Type	Description
dns_name	String	• Specifies the default private network DNS name of the primary NIC. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
instance_id	String	• Specifies the ID of the instance to which the port belongs, for example, RDS instance ID. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
instance_type	String	• Specifies the type of the instance to which the port belongs, for example, RDS. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
port_security_enabled	Boolean	• 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.
zone_id	String	Specifies the availability zone that the port belongs to.
ipv6_bandwidth_id	String	• Specifies the ID of the shared bandwidth associated with the IPv6 network interface. • This parameter is displayed only when the IPv6 network interface is associated with a shared bandwidth.

Table 4-121 fixed_ip object

Parameter	Type	Description
subnet_id	String	• Specifies the subnet ID. If you use the management console, the value of this parameter is the **IPv4 Subnet ID** or **IPv6 Subnet ID** value. • You cannot change the parameter value.

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Parameter	Type	Description
ip_address	String	Specifies the port IP address.

Table 4-122 allowed_address_pairs objects

Parameter	Type	Description
ip_address	String	• Specifies the IP address. • You cannot set it to **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.
mac_address	String	Specifies the MAC address. By default, the MAC address of the local port is used.

Table 4-123 extra_dhcp_opt object

Parameter	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 of the IPv4 network interface. If the value of this parameter is set to **651**, indicating the DHCP lease time of the IPv6 network interface.
opt_value	String	• Specifies the value of the DHCP option. • If the value of **opt_name** is **51** or **651**, the value format of **opt_value** is *X***h**, indicating that the DHCP lease time is *X* hours. • The value of *X* is **-1** or from **1** to **175200**. If the value is **-1**, the DHCP lease time is infinite.

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Table 4-124 binding:vif_details object

Parameter	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 4-125 dns_assignment object

Parameter	Type	Description
hostname	String	Specifies the host name of the port.
ip_address	String	Specifies the port IP address.
fqdn	String	Specifies the private network fully qualified domain name (FQDN) of the port.

Example Response

```
{
    "port": {
        "id": "7204e0da-40de-4207-a536-6f59b84f6f0e",
        "name": "abc",
        "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"
    }
}
```


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Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.6.5 Deleting a Port

Function

This API is used to delete a port. A port is used to carry private IP addresses in a subnet.

Constraints

- If **device_owner** is not empty, the port cannot be deleted. However, there is a special case. If **device_owner** is **neutron:VIP_PORT**, the port can be deleted.
- If **device_id** is not empty, the port cannot be deleted.

URI

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

Table 4-126 describes the parameters.

Table 4-126 Parameter description

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

Request Parameters

None

Example Request

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

Response Parameters

None

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Example Response

None

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.7 VPC Peering Connection

4.7.1 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 4-127 describes the parameters.

Table 4-127 Parameter description

Parameter	Mandatory	Type	Description
id	No	String	Specifies that the VPC peering connection ID is used as the filtering condition.
name	No	String	• Specifies that the peering connection name is used as the filter. • The value can contain no more than 64 characters.

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Parameter	Mandatory	Type	Description
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.
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.

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

Request Parameters

None

Example Request

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

Response Parameters

Table 4-128 Response parameter

Parameter	Type	Description
peerings	Array of **peering** objects	Specifies the VPC peering connection object list. For details, see **Table 4-129**.
peerings_links	Array of **peerings_link** objects	Specifies the VPC peering connection object list. For details, see **Table 4-131**. Only when **limit** is used for filtering and the number of resources exceeds the value of **limit** or 2000 (default value of **limit**), value **next** will be returned for **rel** and a link for **href**.

Table 4-129 peering objects

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

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Parameter	Type	Description
status	String	Specifies the status: • **PENDING_ACCEPTANCE** • **REJECTED** • **EXPIRED** • **DELETED** • **ACTIVE**
request_vpc_info	**vpc_info** object	Specifies information about the local VPC. For details, see **Table 4-130**.
accept_vpc_info	**vpc_info** object	Specifies information about the peer VPC. For details, see **Table 4-130**.
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: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	• Specifies the time (UTC) when the VPC peering connection is updated. • Format: *yyyy-MM-ddTHH:mm:ss*

Table 4-130 vpc_info objects

Parameter	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.

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Table 4-131 peerings_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

```
{
   "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**.

4.7.2 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 4-132 describes the parameters.

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Table 4-132 Parameter description

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

Request Parameters

None

Example Request

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

Response Parameters

Table 4-133 Response parameter

Parameter	Type	Description
peering	**peering** object	Specifies the VPC peering connection object list. For details, see **Table 4-134**.

Table 4-134 peering objects

Parameter	Type	Description
id	String	Specifies the VPC peering connection ID.
name	String	Specifies the VPC peering connection name.
status	String	Specifies the status: • **PENDING_ACCEPTANCE** • **REJECTED** • **EXPIRED** • **DELETED** • **ACTIVE**
request_vpc_info	**vpc_info** object	Specifies information about the local VPC. For details, see **Table 4-135**.

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Parameter	Type	Description
accept_vpc_info	**vpc_info** object	Specifies information about the peer VPC. For details, see **Table 4-135**.
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: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the VPC peering connection is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 4-135 vpc_info objects

Parameter	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**.

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Error Code

See **Error Codes**.

4.7.3 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 4-136 Request parameter

Parameter	Mandatory	Type	Description
peering	Yes	**peering** object	Specifies the VPC peering connection. For details, see **Table 4-137**.

Table 4-137 Description of the **peering** field

Parameter	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 >).

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Parameter	Mandatory	Type	Description
request_vpc_info	Yes	**vpc_info** object	Specifies information about the local VPC. For details, see **Table 4-138**.
accept_vpc_info	Yes	**vpc_info** object	Specifies information about the peer VPC. For details, see **Table 4-138**.

Table 4-138 Description of the **vpc_info** field

Parameter	Mandatory	Type	Description
vpc_id	Yes	String	Specifies the ID of a VPC involved in a VPC peering connection.
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"
        }
    }
}
```


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Response Parameters

Table 4-139 Response parameter

Parameter	Type	Description
peering	peering object	Specifies the VPC peering connection. For details, see Table 4-140.

Table 4-140 peering objects

Parameter	Type	Description
id	String	Specifies the VPC peering connection ID.
name	String	Specifies the VPC peering connection name.
status	String	Specifies the status: • **PENDING_ACCEPTANCE** • **REJECTED** • **EXPIRED** • **DELETED** • **ACTIVE**
request_vpc_info	vpc_info object	Specifies information about the local VPC. For details, see Table 4-141.
accept_vpc_info	vpc_info object	Specifies information about the peer VPC. For details, see Table 4-141.
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: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the VPC peering connection is updated. Format: *yyyy-MM-ddTHH:mm:ss*

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Table 4-141 vpc_info objects

Parameter	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**.

4.7.4 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 4-142 describes the parameters.

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Table 4-142 Parameter description

Parameter	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 4-143 Response parameter

Parameter	Type	Description
id	String	Specifies the VPC peering connection ID.
name	String	Specifies the VPC peering connection name.
status	String	Specifies the status: • **PENDING_ACCEPTANCE** • **REJECTED** • **EXPIRED** • **DELETED** • **ACTIVE**
request_vpc_info	**vpc_info** object	Specifies information about the local VPC. For details, see **Table 4-144**.
accept_vpc_info	**vpc_info** object	Specifies information about the peer VPC. For details, see **Table 4-144**.
description	String	Provides supplementary information about the VPC peering connection.

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Parameter	Type	Description
created_at	String	Specifies the time (UTC) when the VPC peering connection is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the VPC peering connection is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 4-144 vpc_info objects

Parameter	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": "059a737356594b41b447b557bf0aae56"
    },
    "status": "ACTIVE"
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.7.5 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.

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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 4-145 describes the parameters.

Table 4-145 Parameter description

Parameter	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

Response Parameters

Table 4-146 Response parameter

Parameter	Type	Description
id	String	Specifies the VPC peering connection ID.
name	String	Specifies the VPC peering connection name.
status	String	Specifies the status: • **PENDING_ACCEPTANCE** • **REJECTED** • **EXPIRED** • **DELETED** • **ACTIVE**

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Parameter	Type	Description
request_vpc_info	**vpc_info** object	Specifies information about the local VPC. For details, see **Table 4-147**.
accept_vpc_info	**vpc_info** object	Specifies information about the peer VPC. For details, see **Table 4-147**.
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: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the VPC peering connection is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 4-147 vpc_info objects

Parameter	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**.

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Error Code

See **Error Codes**.

4.7.6 Updating a VPC Peering Connection

Function

Updates a VPC peering connection.

URI

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

Table 4-148 describes the parameters.

Table 4-148 Parameter description

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

Request Parameters

Table 4-149 Request parameter

Parameter	Mandatory	Type	Description
peering	Yes	**peering** object	Updates a VPC peering connection. For details, see **Table 4-150**. 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 4-150 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.

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Parameter	Mandatory	Type	Description
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 4-151 Response parameter

Parameter	Type	Description
peering	**peering** object	Specifies the VPC peering connection. For details, see **Table 4-152**.

Table 4-152 peering objects

Parameter	Type	Description
id	String	Specifies the VPC peering connection ID.
name	String	Specifies the VPC peering connection name.
status	String	Specifies the status: • **PENDING_ACCEPTANCE** • **REJECTED** • **EXPIRED** • **DELETED** • **ACTIVE**
request_vpc_info	**vpc_info** object	Specifies information about the local VPC. For details, see **Table 4-153**.

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Parameter	Type	Description
accept_vpc_info	**vpc_info** object	Specifies information about the peer VPC. For details, see **Table 4-153**.
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: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the VPC peering connection is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 4-153 vpc_info objects

Parameter	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**.

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Error Code

See **Error Codes**.

4.7.7 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 4-154 describes the parameters.

Table 4-154 Parameter description

Parameter	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**.

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4.8 VPC Route

4.8.1 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}&marke
r={marker}
```

Table 4-155 describes the parameters.

Table 4-155 Parameter description

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

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Parameter	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**. The default value is **2000**.

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Request Parameters

None

Example Request

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

Response Parameters

Table 4-156 Response parameter

Parameter	Type	Description
routes	Array of **route** objects	Specifies the route object list. For details, see **Table 4-157**.
routes_links	Array of **routes_link** objects	Specifies the route object list. For details, see **Table 4-158**. The value of **rel** will be **next** and that of **href** will be a link only when **limit** is used for filtering and the number of resources exceeds the value of **limit** or 2000 (default value of **limit**).

Table 4-157 route objects

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

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Table 4-158 routes_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

```
{
  "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**.

4.8.2 Querying a VPC Route

Function

This API is used to query details about a route.

URI

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

Table 4-159 describes the parameters.

Table 4-159 Parameter description

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

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Request Parameters

None

Example Request

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

Response Parameters

Table 4-160 Response parameter

Parameter	Type	Description
route	**route** object	Specifies the route. For details, see **Table 4-161**.

Table 4-161 route objects

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

Example Response

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

Status Code

See **Status Codes**.

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Error Code

See **Error Codes**.

4.8.3 Creating a VPC Route

Function

This API is used to create a route.

URI

POST /v2.0/vpc/routes

Request Parameters

Table 4-162 Request parameter

Parameter	Type	Mandatory	Description
route	**route** object	Yes	Specifies the route. For details, see **Table 4-163**.

Table 4-163 route objects

Parameter	Type	Mandatory	Description
destination	String	Yes	Specifies the destination address in the CIDR notation format, for example, 192.168.200.0/24. Both IPv4 and IPv6 addresses are supported.
nexthop	String	Yes	Specifies the next hop. If the route type is **peering**, enter the VPC peering connection ID.
type	String	Yes	Specifies the route type. Currently, only the **peering** type is supported, that is, the next hop is a VPC peering connection.

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Parameter	Type	Mandatory	Description
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 4-164 Response parameter

Parameter	Type	Description
route	**route** object	Specifies the route. For details, see **Table 4-165**.

Table 4-165 route objects

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

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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**.

4.8.4 Deleting a VPC Route

Function

This API is used to delete a route.

URI

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

Table 4-166 describes the parameters.

Table 4-166 Parameter description

Parameter	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

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Example Response

None

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.9 Route Table

4.9.1 Querying Route Tables

Function

This API is used to query route tables.

URI

GET /v1/{project_id}/routetables

Example:

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

Table 4-167 describes the parameters.

Table 4-167 Parameter description

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

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Parameter	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.
id	No	String	Specifies the route table ID that is used as the filter.
vpc_id	No	String	Specifies the VPC UUID that is used as the filter.
subnet_id	No	String	Specifies the subnet UUID that is used as the filter. If you use the management console, the value of this parameter is the **Network ID** value.

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Request Parameters

None

Example Request

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

Response Parameters

Table 4-168 Response parameter

Parameter	Type	Description
routetables	Array of **routetable** objects	Specifies the route table list. For details, see **Table 4-169**.

Table 4-169 Description of the **routetable** field

Parameter	Type	Description
id	String	• Specifies the route table ID that uniquely identifies a route table. • The value must be in standard UUID format.
name	String	• Specifies the route table name. • The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
default	Boolean	• Specifies whether the route table is the default one. • The value can be **true** (default route table) or **false** (custom route table).
subnets	Array of **subnet** objects	• Specifies the subnets associated with the route table. For details, see **Table 4-170**. • Only subnets in the VPC to which the route table belongs can be associated with the route table.
tenant_id	String	• Specifies the project ID.
vpc_id	String	• Specifies the ID of the VPC associated with the route table.

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Parameter	Type	Description
description	String	• Provides supplementary information about the route table. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).
created_at	String	• Specifies the time (UTC) when the route table is created. • Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	• Specifies the time (UTC) when the route table is updated. • Format: *yyyy-MM-ddTHH:mm:ss*

Table 4-170 Description of the **subnet** field

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

Example Response

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


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Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.9.2 Querying a Route Table

Function

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

URI

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

Table 4-171 describes the parameters.

Table 4-171 Parameter description

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

Request Parameters

None

Example Request

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


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Response Parameters

Table 4-172 Response parameter

Parameter	Type	Description
routetable	**routetable** object	Specifies the route table. For details, see **Table 4-173**.

Table 4-173 Description of the **routetable** field

Parameter	Type	Description
id	String	• Specifies the route table ID that uniquely identifies the route table. • The value must be in standard UUID format.
name	String	• Specifies the route table name. • The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
default	Boolean	• Specifies whether the route table is the default one. • The value can be **true** (default route table) or **false** (custom route table).
routes	Array of **route** objects	• Specifies the route list. For details, see **Table 4-174**. • Each route table can have a maximum of 200 routes.
subnets	Array of **subnet** objects	• Specifies the subnets associated with the route table. For details, see **Table 4-175**. • Only subnets in the VPC to which the route table belongs can be associated with the route table.
tenant_id	String	• Specifies the project ID.
vpc_id	String	• Specifies the ID of the VPC associated with the route table.
description	String	• Provides supplementary information about the route table. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
created_at	String	• Specifies the time (UTC) when the route table is created. • Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	• Specifies the time (UTC) when the route table is updated. • Format: *yyyy-MM-ddTHH:mm:ss*

Table 4-174 Description of the **route** field

Parameter	Type	Description
type	String	• Specifies the route type. • Values: – **ecs** (ECS) – **eni** (NIC) – **vip** (Virtual IP address) – **nat** (NAT gateway) – **peering** (VPC peering connection) – **vpn** (VPN) – **dc** (Direct Connect connection) – **cc** (Cloud Connect connection) – **egw**: VPC endpoint. – **er**: enterprise router – **subeni**: supplementary network interface. – **local**: reserved CIDR block. The destination CIDR block of the route configured cannot overlap with that defined by **local**.
destination	String	• Specifies the destination CIDR block of a route. • Constraints: The value must be in valid IPv4 or IPv6 CIDR formats.

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Parameter	Type	Description
nexthop	String	• Specifies the ID of the next hop in the route. • Values: – When **type** is **ecs**, the value is an ECS ID. – When **type** is **eni**, the value is an extension NIC ID. – When **type** is **vip**, the value is a virtual IP address. – When **type** is **nat**, the value a NAT gateway ID. – When **type** is **peering**, the value is a VPC peering connection ID. – When **type** is **vpn**, the value is a VPN ID. – When **type** is **dc**, the value is a Direct Connect connection ID. – When **type** is **cc**, the value is a Cloud Connect connection ID. – When **type** is set to **egw**, the value is a VPC endpoint ID. – When **type** is set to **er**, the value is the ID of an enterprise router. – When **type** is set to **subeni**, the value is the ID of a supplementary network interface.
description	String	• Provides supplementary information about the route. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Table 4-175 Description of the **subnet** field

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

Example Response

```
{
 "routetable": {
  "id": "05250d7e-0396-4fc9-9c9c-e4d5594784e4",
```

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


Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.9.3 Creating a Route Table

Function

This API is used to create a route table.

Notes and Constraints

- The destination CIDR block of a custom route table cannot be included in the CIDR blocks of the local route.
- Each destination CIDR block of a route in the same route table must be unique.

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- No more than five routes can be created at a time.

URI

POST /v1/{project_id}/routetables

Table 4-176 describes the parameters.

Table 4-176 Parameter description

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

Request Parameters

Table 4-177 Request parameter

Parameter	Mandatory	Type	Description
routetable	Yes	**routetable** object	Specifies the route table. For details, see **Table 4-178**.

Table 4-178 Description of the **routetable** field

Parameter	Mandatory	Type	Description
name	No	String	• Specifies the route table name. • The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
routes	No	Array of **route** objects	• Specifies the route list. For details, see **Table 4-179**. • Each route table can have a maximum of 200 routes.
vpc_id	Yes	String	• Specifies the ID of the VPC associated with the route table.

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Parameter	Mandatory	Type	Description
description	No	String	• Provides supplementary information about the route table. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).

Table 4-179 Description of the **route** field

Parameter	Mandatory	Type	Description
type	Yes	String	• Specifies the route type. • Values: – **ecs** (ECS) – **eni** (NIC) – **vip** (Virtual IP address) – **nat** (NAT gateway) – **peering** (VPC peering connection) – **vpn** (VPN) – **dc** (Direct Connect connection) – **cc** (Cloud Connect connection) – **egw**: VPC endpoint. – **er**: enterprise router – **subeni**: supplementary network interface. – **local**: reserved CIDR block. The destination CIDR block of the route configured cannot overlap with that defined by **local**.
destination	Yes	String	• Specifies the destination CIDR block of a route. • Constraints: The value must be in valid IPv4 or IPv6 CIDR formats.

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Parameter	Mandatory	Type	Description
nexthop	Yes	String	• Specifies the ID of the next hop in the route. • Values: – When **type** is **ecs**, the value is an ECS ID. – When **type** is **eni**, the value is an extension NIC ID. – When **type** is **vip**, the value is a virtual IP address. – When **type** is **nat**, the value a NAT gateway ID. – When **type** is **peering**, the value is a VPC peering connection ID. – When **type** is **vpn**, the value is a VPN ID. – When **type** is **dc**, the value is a Direct Connect connection ID. – When **type** is **cc**, the value is a Cloud Connect connection ID. – When **type** is set to **egw**, the value is a VPC endpoint ID. – When **type** is set to **er**, the value is the ID of an enterprise router. – When **type** is set to **subeni**, the value is the ID of a supplementary network interface.
description	No	String	• Provides supplementary information about the route. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).

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Example Request

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

```
POST https://{Endpoint}/v1/6fbe9263116a4b68818cf1edce16bc4f/routetables

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

Response Parameters

Table 4-180 Response parameter

Parameter	Type	Description
routetable	**routetable** object	Specifies the route table. For details, see **Table 4-181**.

Table 4-181 Description of the **routetable** field

Parameter	Type	Description
id	String	• Specifies the route table ID, which uniquely identifies the route table. • The value must be in standard UUID format.
name	String	• Specifies the route table name. • The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
default	Boolean	• Specifies whether the route table is the default one. • The value can be **true** (default route table) or **false** (custom route table).
routes	Array of **route** objects	• Specifies the routes. For details, see **Table 4-182**. • Each route table can have a maximum of 200 routes.

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Parameter	Type	Description
subnets	Array of **subnet** objects	• Specifies the subnets associated with the route table. For details, see **Table 4-183**. • Only subnets in the VPC that the route table belongs to can be associated with the route table.
tenant_id	String	• Specifies the project ID.
vpc_id	String	• Specifies the ID of the VPC associated with the route table.
description	String	• Provides supplementary information about the route table. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).
created_at	String	• Specifies the time (UTC) when the resource was created. • Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	• Specifies the time (UTC) when the resource was updated. • Format: *yyyy-MM-ddTHH:mm:ss*

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Table 4-182 Description of the **route** field

Parameter	Type	Description
type	String	• Specifies the route type. • Values: – **ecs** (ECS) – **eni** (NIC) – **vip** (Virtual IP address) – **nat** (NAT gateway) – **peering** (VPC peering connection) – **vpn** (VPN) – **dc** (Direct Connect connection) – **cc** (Cloud Connect connection) – **egw**: VPC endpoint. – **er**: enterprise router – **subeni**: supplementary network interface. – **local**: reserved CIDR block. The destination CIDR block of the route configured cannot overlap with that defined by **local**.
destination	String	• Specifies the destination CIDR block of a route. • Constraints: The value must be in valid IPv4 or IPv6 CIDR formats.

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Parameter	Type	Description
nexthop	String	• Specifies the ID of the next hop in the route. • Values: – When **type** is **ecs**, the value is an ECS ID. – When **type** is **eni**, the value is an extension NIC ID. – When **type** is **vip**, the value is a virtual IP address. – When **type** is **nat**, the value a NAT gateway ID. – When **type** is **peering**, the value is a VPC peering connection ID. – When **type** is **vpn**, the value is a VPN ID. – When **type** is **dc**, the value is a Direct Connect connection ID. – When **type** is **cc**, the value is a Cloud Connect connection ID. – When **type** is set to **egw**, the value is a VPC endpoint ID. – When **type** is set to **er**, the value is the ID of an enterprise router. – When **type** is set to **subeni**, the value is the ID of a supplementary network interface.
description	String	• Provides supplementary information about the route. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Table 4-183 Description of the **subnet** field

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

Example Response

```
{
    "routetable": {
        "id": "3d42a0d4-a980-4613-ae76-a2cddecff054",
```

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

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.9.4 Updating a Route Table

Function

This API is used to update a route table.

URI

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

Table 4-184 describes the parameters.

Table 4-184 Parameter description

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

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Request Parameters

Table 4-185 Request parameter

Parameter	Mandatory	Type	Description
routetable	Yes	**routetable** object	Specifies the route table. For details, see **Table 4-186**.

Table 4-186 Description of the **routetable** field

Parameter	Mandatory	Type	Description
name	No	String	• Specifies the route table name. • The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	No	String	• Provides supplementary information about the route. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Mandatory	Type	Description
routes	No	RouteTableRouteAction object	• Specifies the route list. For details, see Table 4-187. • Constraints: – Each route table can have a maximum of 200 routes. – The destination cannot be modified directly. To modify the destination, run the **del** command to delete the corresponding route, and then run the **add** command to add a route. • Specifies the operation to perform. Possible values are as follows: – **add**: Adds a route. Parameters **type**, **destination**, and **nexthop** are mandatory. – **mod**: Modifies a route. Parameters **type**, **destination**, and **nexthop** are mandatory. – **del**: Deletes a route. Parameter **destination** is mandatory.

Table 4-187 Description of the **route** field

Parameter	Mandatory	Type	Description
add	No	Array of AddRouteTableRoute objects	Adds a route. For details, see Table 4-188. Parameters **type**, **destination**, and **nexthop** are mandatory.
mod	No	Array of ModRouteTableRoute objects	Modifies a route. For details, see Table 4-189. Parameters **type**, **destination**, and **nexthop** are mandatory.

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Parameter	Mandatory	Type	Description
del	No	Array of **DelRouteTableRoute** objects	Deletes a route. For details, see **Table 4-190**. Parameter **destination** is mandatory.

Table 4-188 Field description of adding a route

Parameter	Mandatory	Type	Description
type	Yes	String	• Specifies the route type. • Values: – **ecs** (ECS) – **eni** (NIC) – **vip** (Virtual IP address) – **nat** (NAT gateway) – **peering** (VPC peering connection) – **vpn** (VPN) – **dc** (Direct Connect connection) – **cc** (Cloud Connect connection) – **egw**: VPC endpoint. – **er**: enterprise router – **subeni**: supplementary network interface. – **local**: reserved CIDR block. The destination CIDR block of the route configured cannot overlap with that defined by **local**.
destination	Yes	String	• Specifies the destination CIDR block of a route. • Constraints: The value must be in valid IPv4 or IPv6 CIDR formats.

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Parameter	Mandatory	Type	Description
nexthop	Yes	String	• Specifies the ID of the next hop in the route. • Values: – When **type** is **ecs**, the value is an ECS ID. – When **type** is **eni**, the value is an extension NIC ID. – When **type** is **vip**, the value is a virtual IP address. – When **type** is **nat**, the value a NAT gateway ID. – When **type** is **peering**, the value is a VPC peering connection ID. – When **type** is **vpn**, the value is a VPN ID. – When **type** is **dc**, the value is a Direct Connect connection ID. – When **type** is **cc**, the value is a Cloud Connect connection ID. – When **type** is set to **egw**, the value is a VPC endpoint ID. – When **type** is set to **er**, the value is the ID of an enterprise router. – When **type** is set to **subeni**, the value is the ID of a supplementary network interface.
description	No	String	• Provides supplementary information about the route. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).

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Table 4-189 Field description of modifying a route

Parameter	Mandatory	Type	Description
type	Yes	String	• Specifies the route type. • Values: – **ecs** (ECS) – **eni** (NIC) – **vip** (Virtual IP address) – **nat** (NAT gateway) – **peering** (VPC peering connection) – **vpn** (VPN) – **dc** (Direct Connect connection) – **cc** (Cloud Connect connection) – **egw**: VPC endpoint. – **er**: enterprise router – **subeni**: supplementary network interface. – **local**: reserved CIDR block. The destination CIDR block of the route configured cannot overlap with that defined by **local**.
destination	Yes	String	• Specifies the destination CIDR block of a route. • Constraints: The value must be in valid IPv4 or IPv6 CIDR formats.

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Parameter	Mandatory	Type	Description
nexthop	Yes	String	• Specifies the ID of the next hop in the route. • Values: – When **type** is **ecs**, the value is an ECS ID. – When **type** is **eni**, the value is an extension NIC ID. – When **type** is **vip**, the value is a virtual IP address. – When **type** is **nat**, the value a NAT gateway ID. – When **type** is **peering**, the value is a VPC peering connection ID. – When **type** is **vpn**, the value is a VPN ID. – When **type** is **dc**, the value is a Direct Connect connection ID. – When **type** is **cc**, the value is a Cloud Connect connection ID. – When **type** is set to **egw**, the value is a VPC endpoint ID. – When **type** is set to **er**, the value is the ID of an enterprise router. – When **type** is set to **subeni**, the value is the ID of a supplementary network interface.

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Parameter	Mandatory	Type	Description
description	No	String	• Provides supplementary information about the route. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Table 4-190 Field description of deleting a route

Parameter	Mandatory	Type	Description
type	No	String	• Specifies the route type. • Values: – **ecs** (ECS) – **eni** (NIC) – **vip** (Virtual IP address) – **nat** (NAT gateway) – **peering** (VPC peering connection) – **vpn** (VPN) – **dc** (Direct Connect connection) – **cc** (Cloud Connect connection) – **egw**: VPC endpoint. – **er**: enterprise router – **subeni**: supplementary network interface. – **local**: reserved CIDR block. The destination CIDR block of the route configured cannot overlap with that defined by **local**.

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Parameter	Mandatory	Type	Description
destination	Yes	String	• Specifies the destination CIDR block of a route. • Constraints: The value must be in valid IPv4 or IPv6 CIDR formats.

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Parameter	Mandatory	Type	Description
nexthop	No	String	• Specifies the ID of the next hop in the route. • Values: – When **type** is **ecs**, the value is an ECS ID. – When **type** is **eni**, the value is an extension NIC ID. – When **type** is **vip**, the value is a virtual IP address. – When **type** is **nat**, the value a NAT gateway ID. – When **type** is **peering**, the value is a VPC peering connection ID. – When **type** is **vpn**, the value is a VPN ID. – When **type** is **dc**, the value is a Direct Connect connection ID. – When **type** is **cc**, the value is a Cloud Connect connection ID. – When **type** is set to **egw**, the value is a VPC endpoint ID. – When **type** is set to **er**, the value is the ID of an enterprise router. – When **type** is set to **subeni**, the value is the ID of a supplementary network interface.

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Parameter	Mandatory	Type	Description
description	No	String	• Provides supplementary information about the route. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Example Request

- Change the route table whose ID is 3d42a0d4-a980-4613-ae76-a2cddecff054, add a route with next hop type of ECS, modify the route with next hop type of ECS, and delete the route whose destination is 20.20.10.0/24.

```
PUT https://{Endpoint}/v1/6fbe9263116a4b68818cf1edce16bc4f/routetables/3d42a0d4-a980-4613-ae76-a2cddecff054

{
   "routetable": {
      "name": "routertable-789",
      "description": "abc",
      "routes": {
         "add": [
            {
               "type": "ecs",
               "destination": "10.10.10.0/24",
               "nexthop": "7c50463d-d36c-4417-aa85-cc11fa10f341",
               "description": "abc"
            }
         ],
         "mod": [
            {
               "type": "ecs",
               "destination": "20.10.10.0/24",
               "nexthop": "7c50463d-d36c-4417-aa85-cc11fa10f341",
               "description": "abc"
            }
         ],
         "del": [
            {
               "destination": "20.20.10.0/24"
            }
         ]
      }
   }
}
```

Response Parameters

Table 4-191 Response parameter

Parameter	Type	Description
routetable	**routetable** object	Specifies the route table. For details, see **Table 4-192**.

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Table 4-192 Description of the **routetable** field

Parameter	Type	Description
id	String	• Specifies the route table ID, which uniquely identifies the route table. • The value must be in standard UUID format.
name	String	• Specifies the route table name. • The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
default	Boolean	• Specifies whether the route table is the default one. • The value can be **true** (default route table) or **false** (custom route table).
routes	Array of **route** objects	• Specifies the routes. For details, see **Table 4-193**. • Each route table can have a maximum of 200 routes.
subnets	Array of **subnet** objects	• Specifies the subnets associated with the route table. For details, see **Table 4-194**. • Only subnets in the VPC that the route table belongs to can be associated with the route table.
tenant_id	String	• Specifies the project ID.
vpc_id	String	• Specifies the ID of the VPC associated with the route table.
description	String	• Provides supplementary information about the route table. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).
created_at	String	• Specifies the time (UTC) when the resource was created. • Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	• Specifies the time (UTC) when the resource was updated. • Format: *yyyy-MM-ddTHH:mm:ss*

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Table 4-193 Description of the **route** field

Parameter	Type	Description
type	String	• Specifies the route type. • Values: – **ecs** (ECS) – **eni** (NIC) – **vip** (Virtual IP address) – **nat** (NAT gateway) – **peering** (VPC peering connection) – **vpn** (VPN) – **dc** (Direct Connect connection) – **cc** (Cloud Connect connection) – **egw**: VPC endpoint. – **er**: enterprise router – **subeni**: supplementary network interface. – **local**: reserved CIDR block. The destination CIDR block of the route configured cannot overlap with that defined by **local**.
destination	String	• Specifies the destination CIDR block of a route. • Constraints: The value must be in valid IPv4 or IPv6 CIDR formats.

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Parameter	Type	Description
nexthop	String	• Specifies the ID of the next hop in the route. • Values: – When **type** is **ecs**, the value is an ECS ID. – When **type** is **eni**, the value is an extension NIC ID. – When **type** is **vip**, the value is a virtual IP address. – When **type** is **nat**, the value a NAT gateway ID. – When **type** is **peering**, the value is a VPC peering connection ID. – When **type** is **vpn**, the value is a VPN ID. – When **type** is **dc**, the value is a Direct Connect connection ID. – When **type** is **cc**, the value is a Cloud Connect connection ID. – When **type** is set to **egw**, the value is a VPC endpoint ID. – When **type** is set to **er**, the value is the ID of an enterprise router. – When **type** is set to **subeni**, the value is the ID of a supplementary network interface.
description	String	• Provides supplementary information about the route. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Table 4-194 Description of the **subnet** field

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

Example Response

```
{
    "routetable": {
        "id": "3d42a0d4-a980-4613-ae76-a2cddecff054",
```

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```
    "vpc_id": "ab78be2d-782f-42a5-aa72-35879f6890ff",
    "description": "abc",
    "default": false,
    "routes": [
      {
        "type": "ecs",
        "destination": "10.10.10.0/24",
        "nexthop": "7c50463d-d36c-4417-aa85-cc11fa10f341",
        "description": "abc"
      }
    ],
    "subnets": [
      {
        "id": "8d4ce32f-d68a-4c4c-9f18-c68d8a5c7f2f"
      }
    ],
    "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
    "created_at": "2022-12-15T02:56:40",
    "updated_at": "2022-12-15T03:03:42"
  }
}
```


Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.9.5 Associating Subnets with a Route Table

Function

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

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

URI

POST /v1/{project_id}/routetables/{routetable_id}/action

Table 4-195 describes the parameters.

Table 4-195 Parameter description

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

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Parameter	Mandatory	Type	Description
routetable_id	Yes	String	Specifies the route table ID, which uniquely identifies a route table.

Request Parameters

Table 4-196 Request parameter

Parameter	Mandatory	Type	Description
routetable	Yes	**routetable** object	Specifies the route table. For details, see **Table 4-197**.

Table 4-197 Description of the **routetable** field

Parameter	Mandatory	Type	Description
subnets	Yes	**subnet** object	• Specifies the subnets associated with the route table. • Only subnets in the VPC that the route table belongs to can be associated with the route table.

Table 4-198 Description of the **subnet** field

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

Example Request

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

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


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

Response Parameters

Table 4-199 Response parameter

Parameter	Type	Description
routetable	**routetable** object	Specifies the route table. For details, see **Table 4-200**.

Table 4-200 Description of the **routetable** field

Parameter	Type	Description
id	String	• Specifies the route table ID, which uniquely identifies the route table. • The value must be in standard UUID format.
name	String	• Specifies the route table name. • The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
default	Boolean	• Specifies whether the route table is the default one. • The value can be **true** (default route table) or **false** (custom route table).
routes	Array of **route** objects	• Specifies the route list. For details, see **Table 4-201**. • Each route table can have a maximum of 200 routes.
subnets	Array of **subnet** objects	• Specifies the subnets associated with the route table. For details, see **Table 4-202**. • Only subnets in the VPC to which the route table belongs can be associated with the route table.
tenant_id	String	• Specifies the project ID.

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Parameter	Type	Description
vpc_id	String	• Specifies the ID of the VPC associated with the route table.
description	String	• Provides supplementary information about the route table. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).

Table 4-201 Description of the **route** field

Parameter	Type	Description
type	String	• Specifies the route type. • Values: – **ecs** (ECS) – **eni** (NIC) – **vip** (Virtual IP address) – **nat** (NAT gateway) – **peering** (VPC peering connection) – **vpn** (VPN) – **dc** (Direct Connect connection) – **cc** (Cloud Connect connection) – **egw**: VPC endpoint. – **er**: enterprise router – **subeni**: supplementary network interface. – **local**: reserved CIDR block. The destination CIDR block of the route configured cannot overlap with that defined by **local**.
destination	String	• Specifies the destination CIDR block of a route. • Constraints: The value must be in valid IPv4 or IPv6 CIDR formats.

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Parameter	Type	Description
nexthop	String	• Specifies the ID of the next hop in the route. • Values: – When **type** is **ecs**, the value is an ECS ID. – When **type** is **eni**, the value is an extension NIC ID. – When **type** is **vip**, the value is a virtual IP address. – When **type** is **nat**, the value a NAT gateway ID. – When **type** is **peering**, the value is a VPC peering connection ID. – When **type** is **vpn**, the value is a VPN ID. – When **type** is **dc**, the value is a Direct Connect connection ID. – When **type** is **cc**, the value is a Cloud Connect connection ID. – When **type** is set to **egw**, the value is a VPC endpoint ID. – When **type** is set to **er**, the value is the ID of an enterprise router. – When **type** is set to **subeni**, the value is the ID of a supplementary network interface.
description	String	• Provides supplementary information about the route. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Table 4-202 Description of the **subnet** field

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

Example Response

```
{
    "routetable": {
        "id": "3d42a0d4-a980-4613-ae76-a2cddecff054",
```

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


Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.9.6 Disassociating Subnets from a Route Table

Function

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

URI

POST /v1/{project_id}/routetables/{routetable_id}/action

Table 4-203 describes the parameters.

Table 4-203 Parameter description

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

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Request Parameters

Table 4-204 Request parameter

Parameter	Mandatory	Type	Description
routetable	Yes	**routetable** object	Specifies the route table. For details, see **Table 4-205**.

Table 4-205 Description of the **routetable** field

Parameter	Mandatory	Type	Description
subnets	Yes	**subnet** object	• Specifies the subnets associated with the route table. • Only subnets in the VPC that the route table belongs to can be associated with the route table.

Table 4-206 Description of the **subnet** field

Parameter	Mandatory	Type	Description
associate	No	Array of strings	Specifies the IDs of the subnets to be associated with the route table.
disassociate	No	Array of strings	Specifies the IDs of the subnets to be disassociated from the route table.

Example Request

- Disassociate route table 3d42a0d4-a980-4613-ae76-a2cddecff054 from subnet 815a6b9e-f766-48eb-967c-0ada72d85435.

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

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


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Response Parameters

Table 4-207 Response parameter

Parameter	Type	Description
routetable	**routetable** object	Specifies the route table. For details, see **Table 4-208**.

Table 4-208 Description of the **routetable** field

Parameter	Type	Description
id	String	• Specifies the route table ID, which uniquely identifies the route table. • The value must be in standard UUID format.
name	String	• Specifies the route table name. • The value can contain up to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
default	Boolean	• Specifies whether the route table is the default one. • The value can be **true** (default route table) or **false** (custom route table).
routes	Array of **route** objects	• Specifies the route list. For details, see **Table 4-209**. • Each route table can have a maximum of 200 routes.
subnets	Array of **subnet** objects	• Specifies the subnets associated with the route table. For details, see **Table 4-210**. • Only subnets in the VPC to which the route table belongs can be associated with the route table.
tenant_id	String	• Specifies the project ID.
vpc_id	String	• Specifies the ID of the VPC associated with the route table.
description	String	• Provides supplementary information about the route table. • The value can contain no more than 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
created_at	String	• Specifies the time (UTC) when the route table is created. • Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	• Specifies the time (UTC) when the route table is updated. • Format: *yyyy-MM-ddTHH:mm:ss*

Table 4-209 Description of the **route** field

Parameter	Type	Description
type	String	• Specifies the route type. • Values: – **ecs** (ECS) – **eni** (NIC) – **vip** (Virtual IP address) – **nat** (NAT gateway) – **peering** (VPC peering connection) – **vpn** (VPN) – **dc** (Direct Connect connection) – **cc** (Cloud Connect connection) – **egw**: VPC endpoint. – **er**: enterprise router – **subeni**: supplementary network interface. – **local**: reserved CIDR block. The destination CIDR block of the route configured cannot overlap with that defined by **local**.
destination	String	• Specifies the destination CIDR block of a route. • Constraints: The value must be in valid IPv4 or IPv6 CIDR formats.

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Parameter	Type	Description
nexthop	String	• Specifies the ID of the next hop in the route. • Values: – When **type** is **ecs**, the value is an ECS ID. – When **type** is **eni**, the value is an extension NIC ID. – When **type** is **vip**, the value is a virtual IP address. – When **type** is **nat**, the value a NAT gateway ID. – When **type** is **peering**, the value is a VPC peering connection ID. – When **type** is **vpn**, the value is a VPN ID. – When **type** is **dc**, the value is a Direct Connect connection ID. – When **type** is **cc**, the value is a Cloud Connect connection ID. – When **type** is set to **egw**, the value is a VPC endpoint ID. – When **type** is set to **er**, the value is the ID of an enterprise router. – When **type** is set to **subeni**, the value is the ID of a supplementary network interface.
description	String	• Provides supplementary information about the route. • The value can contain up to 255 characters and cannot contain angle brackets (< or >).

Table 4-210 Description of the **subnet** field

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

Example Response

```
{
    "routetable": {
        "id": "3d42a0d4-a980-4613-ae76-a2cddecff054",
```

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

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.9.7 Deleting a Route Table

Function

This API is used to delete a custom route table.

Constraints:

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

URI

DELETE /v1/{project_id}/routetables/{routetable_id}

Table 4-211 describes the parameters.

Table 4-211 Parameter description

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

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Parameter	Mandatory	Type	Description
routetable_id	Yes	String	Specifies the route table ID, which uniquely identifies a route table.

Request Parameters

None

Example Request

```
DELETE https://{Endpoint}/v1/{project_id}/routetables/3d42a0d4-a980-4613-ae76-a2cddecff054
```

Response Parameters

None

Example Response

None

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.10 VPC Tag Management

4.10.1 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 4-212 describes the parameters.

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Table 4-212 Parameter description

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

Request Parameters

Table 4-213 Request parameter

Parameter	Type	Mandatory	Description
tag	**tag** object	Yes	Specifies the **tag** objects. For details, see **Table 4-214**.

Table 4-214 tag objects

Parameter	Type	Mandatory	Description
key	String	Yes	• Specifies the tag key. • Cannot be left blank. • Can contain a maximum of 128 characters. • Can contain letters, digits, underscores (_), and hyphens (-). • The tag key of a VPC must be unique.
value	String	Yes	• Specifies the tag value. • Can contain a maximum of 255 characters. • Can contain letters, digits, underscores (_), periods (.), and hyphens (-).

Example Request

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

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```
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**.

4.10.2 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 4-215 describes the parameters.

Table 4-215 Parameter description

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

Request Parameters

None

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Example Request

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

Response Parameters

Table 4-216 Response parameter

Parameter	Type	Description
tags	Array of **tag** objects	Specifies the **tag** object list. For details, see **Table 4-217**.

Table 4-217 tag objects

Parameter	Type	Description
key	String	• Specifies the tag key. • Cannot be left blank. • Can contain a maximum of 128 characters. • Can contain letters, digits, underscores (_), and hyphens (-). • The tag key of a VPC must be unique.
value	String	• Specifies the tag value. • Can contain a maximum of 255 characters. • Can contain letters, digits, underscores (_), periods (.), and hyphens (-).

Example Response

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

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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4.10.3 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 4-218 describes the parameters.

Table 4-218 Parameter description

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

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4.10.4 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 4-219 describes the parameters.

Table 4-219 Parameter description

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

Request Parameters

Table 4-220 Request parameter

Parameter	Type	Mandatory	Description
tags	Array of **tag** objects	Yes	Specifies the **tag** objects. For details, see **Table 4-221**.

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Parameter	Type	Mandatory	Description
action	String	Yes	Specifies the operation. Possible values are as follows: • **create** • **delete**

Table 4-221 tag objects

Parameter	Type	Mandatory	Description
key	String	Yes	• Specifies the tag key. • Cannot be left blank. • Can contain a maximum of 128 characters. • Can contain letters, digits, underscores (_), and hyphens (-). • The tag key of a VPC must be unique.
value	String	Yes	• Specifies the tag value. • Can contain a maximum of 255 characters. • Can contain letters, digits, underscores (_), periods (.), and hyphens (-).

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": [
```


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

Response Parameters

None

Example Response

None

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.10.5 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 4-222 describes the parameters.

Table 4-222 Parameter description

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

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Request Parameters

Table 4-223 Request parameter

Parameter	Type	Mandatory	Description
tags	Array of **tag** 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 **action** is set to **count**. The default value is **1000** when **action** is set to **filter**. The maximum value is **1000**, and the minimum value is **1**. 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 **action** is set to **count**. If **action** is set to **filter**, the value must be a number, and the default value is **0**. The value cannot be a negative number.
action	String	Yes	Specifies the operation to perform. The value can only be **filter** (filtering) or **count** (querying the total number). The value **filter** indicates pagination query. The value **count** indicates that the total number of query results meeting the search criteria will be returned.
matches	Array of **match** objects	No	Specifies the search criteria. The tag key is the field to match. Currently, only **resource_name** is supported. The tag value indicates the matched value. This field is a fixed dictionary value.

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Table 4-224 Description of the **tag** field

Parameter	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 values. Each value can contain a maximum of 255 Unicode characters. An empty list for **values** 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 **val1** and resource B has a tag value of **val2**, resources A and B can be found by using **values={val1,val2}**.

Table 4-225 Description of the **match** field

Parameter	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",
```

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```
  "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

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

Response Parameters

Table 4-226 Response parameter

Parameter	Type	Description
resources	Array of **resource** objects	Specifies the **resource** object list. For details, see **Table 4-227**.
total_count	Integer	Specifies the total number of query records.

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Table 4-227 resource objects

Parameter	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.
tags	Array of **tag** objects	Specifies the tag list. This parameter is an empty array by default if there is no tag. For details, see **Table 4-228**.
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name.

Table 4-228 Description of the **tag** field

Parameter	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 **values** 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 **val1** and resource B has a tag value of **val2**, resources A and B can be found by using **values={val1,val2}**.

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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**.

4.10.6 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 4-229 describes the parameters.

Table 4-229 Parameter description

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

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Request Parameters

None

Example Request

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

Response Parameters

Table 4-230 Response parameter

Parameter	Type	Description
tags	Array of **tag** objects	Specifies the tag list.

Table 4-231 Description of the **tag** field

Parameter	Type	Description
key	String	Specifies the tag key. • Cannot be left blank. • Contain up to 128 characters (36 characters on the console). • Can contain only the following character types: – Uppercase letters – Lowercase letters – Digits – Special characters, including hyphens (-), underscores (_), and at signs (@)
values	Array of strings	Specifies the tag value list. • Contain up to 255 characters (43 characters on the console). • Can contain only the following character types: – Uppercase letters – Lowercase letters – Digits – Special characters, including hyphens (-), underscores (_), and at signs (@)

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Example Response

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

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.11 Subnet Tag Management

4.11.1 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 4-232 describes the parameters.

Table 4-232 Parameter description

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

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

Request Parameters

Table 4-233 Request parameter

Parameter	Type	Mandatory	Description
tag	**tag** object	Yes	Specifies the **tag** objects. For details, see **Table 4-234**.

Table 4-234 tag objects

Parameter	Type	Mandatory	Description
key	String	Yes	• Specifies the tag key. • Cannot be left blank. • Can contain a maximum of 128 characters. • Can contain letters, digits, underscores (_), and hyphens (-). • The tag key of a VPC must be unique.
value	String	Yes	• Specifies the tag value. • Can contain a maximum of 255 characters. • Can contain letters, digits, underscores (_), periods (.), and hyphens (-).

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",
```


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```
        "value": "value1"
    }
}
```

Response Parameters

None

Example Response

None

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.11.2 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 4-235 describes the parameters.

Table 4-235 Parameter description

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

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Request Parameters

None

Example Request

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

Response Parameters

Table 4-236 Response parameter

Parameter	Type	Description
tags	Array of **tag** objects	Specifies the **tag** object list. For details, see **Table 4-237**.

Table 4-237 tag objects

Parameter	Type	Description
key	String	• Specifies the tag key. • Cannot be left blank. • Can contain a maximum of 128 characters. • Can contain letters, digits, underscores (_), and hyphens (-). • The tag key of a VPC must be unique.
value	String	• Specifies the tag value. • Can contain a maximum of 255 characters. • Can contain letters, digits, underscores (_), periods (.), and hyphens (-).

Example Response

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

Status Code

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Error Code

See **Error Codes**.

4.11.3 Deleting a Tag from a Subnet

Function

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

URI

DELETE /v2.0/{project_id}/subnets/{subnet_id}/tags/{key}

Table 4-238 describes the parameters.

Table 4-238 Parameter description

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

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Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.11.4 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 4-239 describes the parameters.

Table 4-239 Parameter description

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

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Request Parameters

Table 4-240 Request parameter

Parameter	Type	Mandatory	Description
tags	Array of **tag** objects	Yes	Specifies the **tag** object list. For details, see **Table 4-241**.
action	String	Yes	Specifies the operation. Possible values are as follows: • **create** • **delete**

Table 4-241 tag objects

Parameter	Type	Mandatory	Description
key	String	Yes	• Specifies the tag key. • Cannot be left blank. • Can contain a maximum of 128 characters. • Can contain letters, digits, underscores (_), and hyphens (-). • The tag key of a VPC must be unique.
value	String	Yes	• Specifies the tag value. • Can contain a maximum of 255 characters. • Can contain letters, digits, underscores (_), periods (.), and hyphens (-).

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",
```


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```
            "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**.

4.11.5 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 4-242 describes the parameters.

Table 4-242 Parameter description

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

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Request Parameters

Table 4-243 Request parameter

Parameter	Type	Mandatory	Description
tags	Array of **tag** 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 **action** is set to **count**. The default value is **1000** when **action** is set to **filter**. The maximum value is **1000**, and the minimum value is **1**. 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 **action** is set to **count**. If **action** is set to **filter**, the value must be a number, and the default value is **0**. The value cannot be a negative number.
action	String	Yes	Specifies the operation to perform. The value can only be **filter** (filtering) or **count** (querying the total number). The value **filter** indicates pagination query. The value **count** indicates that the total number of query results meeting the search criteria will be returned.
matches	Array of **match** objects	No	Specifies the search criteria. The tag key is the field to match. Currently, only **resource_name** is supported. The tag value indicates the matched value. This field is a fixed dictionary value.

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Table 4-244 Description of the **tag** field

Parameter	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 **values** indicates any value. The values are in the OR relationship.

Table 4-245 Description of the **match** field

Parameter	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": [
```

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```
            "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 4-246 Response parameter

Parameter	Type	Description
resources	Array of **resource** objects	Specifies the **resource** object list. For details, see **Table 4-247**.
total_count	Integer	Specifies the total number of query records.

Table 4-247 resource objects

Parameter	Type	Description
resource_id	String	Specifies the resource ID.

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Parameter	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 **tag** objects	Specifies the tag list. This parameter is an empty array by default if there is no tag. For details, see **Table 4-248**.
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name.

Table 4-248 Description of the **tag** field

Parameter	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 **values** indicates any value. The values are in the OR relationship.

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",
```


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```
            "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**.

4.11.6 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 4-249 describes the parameters.

Table 4-249 Parameter description

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

Request Parameters

None

Example Request

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


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Response Parameters

Table 4-250 Response parameter

Parameter	Type	Description
tags	Array of **tag** objects	Specifies the **tag** object list. For details, see **Table 4-251**.

Table 4-251 Description of the **tag** field

Parameter	Type	Description
key	String	Specifies the tag key. • Cannot be left blank. • Contain up to 128 characters (36 characters on the console). • Can contain only the following character types: – Uppercase letters – Lowercase letters – Digits – Special characters, including hyphens (-), underscores (_), and at signs (@)
values	Array of strings	Specifies the tag value list. • Contain up to 255 characters (43 characters on the console). • Can contain only the following character types: – Uppercase letters – Lowercase letters – Digits – Special characters, including hyphens (-), underscores (_), and at signs (@)

Example Response

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


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

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

4.12 Querying IP Address Usage

4.12.1 Querying IP Address Usage on a Specified Network

Function

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

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

NOTICE

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

URI

GET /v2.0/network-ip-availabilities/{network_id}

Table 4-252 describes the parameters.

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Table 4-252 Parameter description

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

Request Parameters

None

Example Request

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

Response Parameters

Table 4-253 Response parameter

Parameter	Type	Description
network_ip_availability	**network_ip_availability** object	Specifies the **network_ip_availability** objects. For details, see **Table 4-254**.

Table 4-254 network_ip_availability objects

Parameter	Type	Description
network_id	String	Specifies the network ID.
network_name	String	Specifies the network name.
tenant_id	String	Specifies the project ID.
total_ips	Integer	Specifies the total number of IP addresses on a network. (System reserved IP addresses are not included.)
used_ips	Integer	Specifies the number of in-use IP addresses on a network. (Reserved IP addresses are not included.)

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Parameter	Type	Description
subnet_ip_availability	Array of **subnet_ip_availability** objects	Specifies the subnet IP address usage objects. For details, see **Table 4-255**.

Table 4-255 Description of the **subnet_ip_availability** field

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

Example Response

```
{
  "network_ip_availability": {
    "used_ips": 4,
    "subnet_ip_availability": [
      {
        "used_ips": 4,
        "subnet_id": "98e343d1-3cb8-4f69-9cd1-00569819480f",
        "subnet_name": "",
        "ip_version": 4,
        "cidr": "10.0.0.0/8",
        "total_ips": 300
      }
```


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```
    ],
    "network_id": "6b50d967-779c-40c9-a157-de1df3c17043",
    "tenant_id": "7c4b23cb125d481c95cbe4f91b2c11cd",
    "total_ips": 300,
    "network_name": "pch_test_003"
  }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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5 VPC APIs (V3)

5.1 VPC

5.1.1 Querying VPCs

Function

After a VPC is created, you can call this API to query all information about the VPC, including the VPC name, ID, and CIDR block.

Constraints

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

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/vpc/vpcs

Table 5-1 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Definition: ID of the project that a VPC belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. • Range: None

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Table 5-2 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	• Definition: Number of records returned on each page. • Range: 0-2000
marker	No	String	• Definition: ID of the resource from which the pagination query starts. If the parameter is left blank, only resources on the first page are queried. • Range: VPC ID.
id	No	Array of strings	• Definition: VPC ID, which can be used to filter VPCs. • Range: None
name	No	Array of strings	• Definition: VPC name, which can be used to filter VPCs. • Range: None
description	No	Array of strings	• Definition: VPC description, which can be used to filter VPCs. • Range: None
cidr	No	Array of strings	• Definition: CIDR block of a VPC, which can be used to filter VPCs. • Range: None

Request Parameters

None

Response Parameters

Status code: 200

Table 5-3 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None

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Parameter	Type	Description
vpcs	Array of **Vpc** objects	• Definition: Response body for querying VPCs. • Range: None
page_info	**PageInfo** object	• Definition: Pagination information. • Range: None

Table 5-4 Vpc

Parameter	Type	Description
id	String	• Definition: VPC ID. After a VPC is created, a VPC ID is generated, which uniquely identifies the VPC. • Range: The value is in UUID format with hyphens (-).
name	String	• Definition: VPC name. • Range: The value can contain 0 to 64 characters. It can include letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	• Definition: Description of a VPC. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	• Definition: Available subnets in a VPC. • Range: – 10.0.0.0/8–24: The IP address ranges from 10.0.0.0 to 10.255.255.255, and the netmask ranges from 8 to 24. – 172.16.0.0/12–24: The IP address ranges from 172.16.0.0 to 172.31.255.255, and the netmask ranges from 12 to 24. – 192.168.0.0/16–24: The IP address ranges from 192.168.0.0 to 192.168.255.255, and the netmask ranges from 16 to 24. – If **cidr** is not specified, the default value is **""**.

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Parameter	Type	Description
extend_cidrs	Array of strings	• Definition: Secondary CIDR blocks of a VPC. • Range: The following CIDR blocks are not supported: – 10.0.0.0/8: The IP address range is 10.0.0.0-10.255.255.255. – 172.16.0.0/12: The IP address range is 172.16.0.0-172.31.255.255. – 192.168.0.0/16: The IP address range is 192.168.0.0-192.168.255.255. – 172.31.0.0/16: The IP address range is 172.31.0.0-172.31.255.255. – 100.64.0.0/10: The IP address range is 100.64.0.0-100.127.255.255. – 214.0.0.0/7: The IP address range is 214.0.0.0-215.255.255.255. – 198.18.0.0/15: The IP address range is 198.18.0.0-198.19.255.255. – 169.254.0.0/16: The IP address range is 169.254.0.0-169.254.255.255. – 0.0.0.0/8: The IP address range is 0.0.0.0-0.255.255.255. – 127.0.0.0/8: The IP address range is 127.0.0.0-127.255.255.255. – 240.0.0.0/4: The IP address range is 240.0.0.0-255.255.255.255.
status	String	• Definition: VPC status. • Range: – **PENDING**: The VPC is being created. – **ACTIVE**: The VPC is created.
project_id	String	• Definition: ID of the project that a VPC belongs to. • Range: None

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Parameter	Type	Description
enterprise_project_id	String	• Definition: ID of the enterprise project that a VPC belongs to. • Range: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.
created_at	String	• Definition: Time when a VPC was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Definition: Time when a VPC was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
cloud_resources	Array of **CloudResource** objects	• Definition: Type and number of resources associated with a VPC. For example, subnets and route tables. • Range: None
tags	Array of **ResponseTag** objects	• Definition: Tags of a VPC, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. • Range: None

Table 5-5 CloudResource

Parameter	Type	Description
resource_type	String	• Definition: Resource type. • Range: None
resource_count	Integer	• Definition: Number of resources. • Range: None

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Table 5-6 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

Table 5-7 PageInfo

Parameter	Type	Description
previous_marker	String	**Definition**: The first record on the current page. **Range**: N/A

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Parameter	Type	Description
current_count	Integer	**Definition**: Total number of resources on the current page. **Range**: N/A
next_marker	String	**Definition**: The last record on the current page. The **next_marker** field does not exist if the page is the last one. **Range**: N/A

Example Requests

- Querying VPCs

  ```
  GET https://{Endpoint}/v3/{project_id}/vpc/vpcs
  ```

- Querying VPCs by VPC ID

  ```
  GET https://{Endpoint}/v3/{project_id}/vpc/vpcs?
  id=01ab4be1-4447-45fb-94be-3ee787ed4ebe&id=02cd5ef2-4447-36fb-75be-3ee787ed6adf
  ```

- Querying VPCs by VPC name

  ```
  GET https://{Endpoint}/v3/{project_id}/vpc/vpcs?name=vpc-test
  ```

- Querying VPCs by page

  ```
  GET https://{Endpoint}/v3/{project_id}/vpc/vpcs?
  limit=2&marker=01ab4be1-4447-45fb-94be-3ee787ed4ebe
  ```

Example Responses

Status code: 200

Normal response to the GET operation. For more status codes, see **Status Code**.


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


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


Status Codes

Status Code	Description
200	Normal response to the GET operation. For more status codes, see **Status Code**.

Error Codes

See **Error Codes**.

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5.1.2 Querying the Details of a VPC

Function

After a VPC is created, you can call this API to query all information about the VPC, including the VPC name, ID, and CIDR block.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/vpc/vpcs/{vpc_id}

Table 5-8 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Definition: ID of the project that a VPC belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. • Range: None
vpc_id	Yes	String	• Definition: VPC ID, which uniquely identifies the VPC. • Range: None

Request Parameters

None

Response Parameters

Status code: 200

Table 5-9 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None
vpc	**Vpc** object	• Definition: Response body for querying details about a VPC. • Range: None

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Table 5-10 Vpc

Parameter	Type	Description
id	String	• Definition: VPC ID. After a VPC is created, a VPC ID is generated, which uniquely identifies the VPC. • Range: The value is in UUID format with hyphens (-).
name	String	• Definition: VPC name. • Range: The value can contain 0 to 64 characters. It can include letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	• Definition: Description of a VPC. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	• Definition: Available subnets in a VPC. • Range: – 10.0.0.0/8–24: The IP address ranges from 10.0.0.0 to 10.255.255.255, and the netmask ranges from 8 to 24. – 172.16.0.0/12–24: The IP address ranges from 172.16.0.0 to 172.31.255.255, and the netmask ranges from 12 to 24. – 192.168.0.0/16–24: The IP address ranges from 192.168.0.0 to 192.168.255.255, and the netmask ranges from 16 to 24. – If **cidr** is not specified, the default value is **""**.

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Parameter	Type	Description
extend_cidrs	Array of strings	• Definition: Secondary CIDR blocks of a VPC. • Range: The following CIDR blocks are not supported: – 10.0.0.0/8: The IP address range is 10.0.0.0-10.255.255.255. – 172.16.0.0/12: The IP address range is 172.16.0.0-172.31.255.255. – 192.168.0.0/16: The IP address range is 192.168.0.0-192.168.255.255. – 172.31.0.0/16: The IP address range is 172.31.0.0-172.31.255.255. – 100.64.0.0/10: The IP address range is 100.64.0.0-100.127.255.255. – 214.0.0.0/7: The IP address range is 214.0.0.0-215.255.255.255. – 198.18.0.0/15: The IP address range is 198.18.0.0-198.19.255.255. – 169.254.0.0/16: The IP address range is 169.254.0.0-169.254.255.255. – 0.0.0.0/8: The IP address range is 0.0.0.0-0.255.255.255. – 127.0.0.0/8: The IP address range is 127.0.0.0-127.255.255.255. – 240.0.0.0/4: The IP address range is 240.0.0.0-255.255.255.255.
status	String	• Definition: VPC status. • Range: – **PENDING**: The VPC is being created. – **ACTIVE**: The VPC is created.
project_id	String	• Definition: ID of the project that a VPC belongs to. • Range: None

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Parameter	Type	Description
enterprise_project_id	String	• Definition: ID of the enterprise project that a VPC belongs to. • Range: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.
created_at	String	• Definition: Time when a VPC was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Definition: Time when a VPC was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
cloud_resources	Array of **CloudResource** objects	• Definition: Type and number of resources associated with a VPC. For example, subnets and route tables. • Range: None
tags	Array of **ResponseTag** objects	• Definition: Tags of a VPC, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. • Range: None

Table 5-11 CloudResource

Parameter	Type	Description
resource_type	String	• Definition: Resource type. • Range: None
resource_count	Integer	• Definition: Number of resources. • Range: None

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Table 5-12 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

Example Requests

Querying the details of a VPC

```
GET https://{Endpoint}/v3/{project_id}/vpc/vpcs/0552091e-b83a-49dd-88a7-4a5c86fd9ec3
```

Example Responses

Status code: 200

Normal response to the GET operation. For more status codes, see **Status Code**.

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```
{
  "request_id" : "84eb4f775d66dd916db121768ec55626",
  "vpc" : {
    "id" : "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
    "name" : "name-test",
    "description" : "description-test",
    "cidr" : "192.168.0.0/16",
    "extend_cidrs" : [ "21.8.0.0/16" ],
    "enterprise_project_id" : "0",
    "tags" : [ {
      "key" : "key",
      "value" : "value"
    } ],
    "cloud_resources" : [ {
      "resource_type" : "routetable",
      "resource_count" : 1
    } ],
    "status" : "ACTIVE",
    "project_id" : "060576782980d5762f9ec014dd2f1148",
    "created_at" : "2018-03-23T09:26:08",
    "updated_at" : "2018-08-24T08:49:53"
  }
}
```


Status Codes

Status Code	Description
200	Normal response to the GET operation. For more status codes, see **Status Code**.

Error Codes

See **Error Codes**.

5.1.3 Adding a Secondary CIDR Block to a VPC

Function

The IPv4 CIDR block you specify when you create a VPC is the primary one. The primary CIDR block cannot be changed after the VPC is created. If IP addresses in the primary CIDR block are insufficient, you can call this API to add a secondary CIDR block to a VPC.

Calling Method

For details, see **Calling APIs**.

URI

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

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Table 5-13 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Definition: ID of the project that a VPC belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. • Range: None
vpc_id	Yes	String	• Definition: VPC ID, which uniquely identifies the VPC. • Range: None

Request Parameters

Table 5-14 Request body parameters

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	• Definition: Whether to only send the check request. • Constraints: None • Range: – **true**: Only the check request will be sent and no secondary CIDR block will not be added. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. – **false**: A request will be sent and a secondary CIDR block will be added. • Default Value: **false**

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Parameter	Mandatory	Type	Description
vpc	Yes	**AddExtendCidrOption** object	• Definition: Request body for adding a secondary CIDR block. • Constraints: None • Range: None • Default Value: None

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Table 5-15 AddExtendCidrOption

Parameter	Mandatory	Type	Description
extend_cidrs	Yes	Array of strings	• Definition: Secondary CIDR blocks of a VPC. • Constraints: Only IPv4 CIDR blocks are supported. • Range: The following CIDR blocks are not supported: – 10.0.0.0/8: The IP address range is 10.0.0.0-10.255.255.255. – 172.16.0.0/12: The IP address range is 172.16.0.0-172.31.255.255. – 192.168.0.0/16: The IP address range is 192.168.0.0-192.168.255.255. – 172.31.0.0/16: The IP address range is 172.31.0.0-172.31.255.255. – 100.64.0.0/10: The IP address range is 100.64.0.0-100.127.255.255. – 214.0.0.0/7: The IP address range is 214.0.0.0-215.255.255.255. – 198.18.0.0/15: The IP address range is 198.18.0.0-198.19.255.255. – 169.254.0.0/16: The IP address range is 169.254.0.0-169.254.255.255. – 0.0.0.0/8: The IP address range is 0.0.0.0-0.255.255.255. – 127.0.0.0/8: The IP address range is 127.0.0.0-127.255.255.255.

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Parameter	Mandatory	Type	Description
			– 240.0.0.0/4: The IP address range is 240.0.0.0-255.255.255.255. • Default Value: None

Response Parameters

Status code: 200

Table 5-16 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None
vpc	Vpc object	• Definition: Response body for adding a secondary CIDR block. • Range: None

Table 5-17 Vpc

Parameter	Type	Description
id	String	• Definition: VPC ID. After a VPC is created, a VPC ID is generated, which uniquely identifies the VPC. • Range: The value is in UUID format with hyphens (-).
name	String	• Definition: VPC name. • Range: The value can contain 0 to 64 characters. It can include letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	• Definition: Description of a VPC. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
cidr	String	• Definition: Available subnets in a VPC. • Range: – 10.0.0.0/8–24: The IP address ranges from 10.0.0.0 to 10.255.255.255, and the netmask ranges from 8 to 24. – 172.16.0.0/12–24: The IP address ranges from 172.16.0.0 to 172.31.255.255, and the netmask ranges from 12 to 24. – 192.168.0.0/16–24: The IP address ranges from 192.168.0.0 to 192.168.255.255, and the netmask ranges from 16 to 24. – If **cidr** is not specified, the default value is **""**.

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Parameter	Type	Description
extend_cidrs	Array of strings	• Definition: Secondary CIDR blocks of a VPC. • Range: The following CIDR blocks are not supported: – 10.0.0.0/8: The IP address range is 10.0.0.0-10.255.255.255. – 172.16.0.0/12: The IP address range is 172.16.0.0-172.31.255.255. – 192.168.0.0/16: The IP address range is 192.168.0.0-192.168.255.255. – 172.31.0.0/16: The IP address range is 172.31.0.0-172.31.255.255. – 100.64.0.0/10: The IP address range is 100.64.0.0-100.127.255.255. – 214.0.0.0/7: The IP address range is 214.0.0.0-215.255.255.255. – 198.18.0.0/15: The IP address range is 198.18.0.0-198.19.255.255. – 169.254.0.0/16: The IP address range is 169.254.0.0-169.254.255.255. – 0.0.0.0/8: The IP address range is 0.0.0.0-0.255.255.255. – 127.0.0.0/8: The IP address range is 127.0.0.0-127.255.255.255. – 240.0.0.0/4: The IP address range is 240.0.0.0-255.255.255.255.
status	String	• Definition: VPC status. • Range: – **PENDING**: The VPC is being created. – **ACTIVE**: The VPC is created.
project_id	String	• Definition: ID of the project that a VPC belongs to. • Range: None

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Parameter	Type	Description
enterprise_project_id	String	• Definition: ID of the enterprise project that a VPC belongs to. • Range: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.
created_at	String	• Definition: Time when a VPC was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Definition: Time when a VPC was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
cloud_resources	Array of **CloudResource** objects	• Definition: Type and number of resources associated with a VPC. For example, subnets and route tables. • Range: None
tags	Array of **ResponseTag** objects	• Definition: Tags of a VPC, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. • Range: None

Table 5-18 CloudResource

Parameter	Type	Description
resource_type	String	• Definition: Resource type. • Range: None
resource_count	Integer	• Definition: Number of resources. • Range: None

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Table 5-19 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

Status code: 202

Table 5-20 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None

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Parameter	Type	Description
error_msg	String	• Definition: Error message. • Range: None
error_code	String	• Definition: Error code. • Range: None

Example Requests

Add the secondary CIDR block 23.8.0.0/16 to the VPC whose ID is 0552091e-b83a-49dd-88a7-4a5c86fd9ec3.

```
PUT https://{Endpoint}/v3/{project_id}/vpc/vpcs/0552091e-b83a-49dd-88a7-4a5c86fd9ec3/add-extend-cidr

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

Example Responses

Status code: 200

Normal response to the PUT operation. For more status codes, see **Status Code**.

```
{
  "request_id" : "84eb4f775d66dd916db121768ec55626",
  "vpc" : {
    "id" : "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
    "name" : "vpc1",
    "description" : "test1",
    "cidr" : "192.168.0.0/16",
    "extend_cidrs" : [ "23.8.0.0/16" ],
    "enterprise_project_id" : "0",
    "tags" : [ {
      "key" : "key",
      "value" : "value"
    } ],
    "cloud_resources" : [ {
      "resource_type" : "routetable",
      "resource_count" : 1
    } ],
    "status" : "ACTIVE",
    "project_id" : "060576782980d5762f9ec014dd2f1148",
    "created_at" : "2018-03-23T09:26:08",
    "updated_at" : "2018-08-24T08:49:53"
  }
}
```

Status code: 202

Normal response to the specified preflight request of API V3. For more status codes, see **Status Code**.

```
{
  "error_msg" : "Request validation has been passed with dry run...",
  "error_code" : "SYS.0202",
  "request_id" : "cfd81aea3f59eac7128dba4b36d516c8"
}
```


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Status Codes

Status Code	Description
200	Normal response to the PUT operation. For more status codes, see **Status Code**.
202	Normal response to the specified preflight request of API V3. For more status codes, see **Status Code**.

Error Codes

See **Error Codes**.

5.1.4 Removing a Secondary CIDR Block from a VPC

Function

If a secondary CIDR block of your VPC is no longer used, you can call this API to remove it from the VPC.

Calling Method

For details, see **Calling APIs**.

URI

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

Table 5-21 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Definition: ID of the project that a VPC belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. • Range: None
vpc_id	Yes	String	• Definition: VPC ID, which uniquely identifies the VPC. • Range: None

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Request Parameters

Table 5-22 Request body parameters

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	• Definition: Whether to only send the check request. • Constraints: None • Range: – **true**: Only the check request will be sent and no secondary CIDR block will be removed. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. – **false**: A request will be sent and a secondary CIDR block will be removed. • Default Value: **false**
vpc	Yes	**RemoveExtendCidrOption** object	• Definition: Request body for removing a secondary CIDR block from a VPC. • Constraints: None • Range: None • Default Value: None

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Table 5-23 RemoveExtendCidrOption

Parameter	Mandatory	Type	Description
extend_cidrs	Yes	Array of strings	• Definition: Secondary CIDR block to be removed from a VPC. • Constraints: Before removing a secondary CIDR block, delete the subnets in the CIDR block first. • Range: The value must be the secondary CIDR blocks in the VPC. • Default Value: None

Response Parameters

Status code: 200

Table 5-24 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None
vpc	Vpc object	• Definition: Response body for removing a secondary CIDR block from a VPC. • Range: None

Table 5-25 Vpc

Parameter	Type	Description
id	String	• Definition: VPC ID. After a VPC is created, a VPC ID is generated, which uniquely identifies the VPC. • Range: The value is in UUID format with hyphens (-).
name	String	• Definition: VPC name. • Range: The value can contain 0 to 64 characters. It can include letters, digits, underscores (_), hyphens (-), and periods (.).

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Parameter	Type	Description
description	String	• Definition: Description of a VPC. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
cidr	String	• Definition: Available subnets in a VPC. • Range: – 10.0.0.0/8–24: The IP address ranges from 10.0.0.0 to 10.255.255.255, and the netmask ranges from 8 to 24. – 172.16.0.0/12–24: The IP address ranges from 172.16.0.0 to 172.31.255.255, and the netmask ranges from 12 to 24. – 192.168.0.0/16–24: The IP address ranges from 192.168.0.0 to 192.168.255.255, and the netmask ranges from 16 to 24. – If **cidr** is not specified, the default value is **""**.

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Parameter	Type	Description
extend_cidrs	Array of strings	• Definition: Secondary CIDR blocks of a VPC. • Range: The following CIDR blocks are not supported: – 10.0.0.0/8: The IP address range is 10.0.0.0-10.255.255.255. – 172.16.0.0/12: The IP address range is 172.16.0.0-172.31.255.255. – 192.168.0.0/16: The IP address range is 192.168.0.0-192.168.255.255. – 172.31.0.0/16: The IP address range is 172.31.0.0-172.31.255.255. – 100.64.0.0/10: The IP address range is 100.64.0.0-100.127.255.255. – 214.0.0.0/7: The IP address range is 214.0.0.0-215.255.255.255. – 198.18.0.0/15: The IP address range is 198.18.0.0-198.19.255.255. – 169.254.0.0/16: The IP address range is 169.254.0.0-169.254.255.255. – 0.0.0.0/8: The IP address range is 0.0.0.0-0.255.255.255. – 127.0.0.0/8: The IP address range is 127.0.0.0-127.255.255.255. – 240.0.0.0/4: The IP address range is 240.0.0.0-255.255.255.255.
status	String	• Definition: VPC status. • Range: – **PENDING**: The VPC is being created. – **ACTIVE**: The VPC is created.
project_id	String	• Definition: ID of the project that a VPC belongs to. • Range: None

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Parameter	Type	Description
enterprise_project_id	String	• Definition: ID of the enterprise project that a VPC belongs to. • Range: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.
created_at	String	• Definition: Time when a VPC was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Definition: Time when a VPC was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
cloud_resources	Array of **CloudResource** objects	• Definition: Type and number of resources associated with a VPC. For example, subnets and route tables. • Range: None
tags	Array of **ResponseTag** objects	• Definition: Tags of a VPC, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. • Range: None

Table 5-26 CloudResource

Parameter	Type	Description
resource_type	String	• Definition: Resource type. • Range: None
resource_count	Integer	• Definition: Number of resources. • Range: None

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Table 5-27 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

Status code: 202

Table 5-28 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None

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Parameter	Type	Description
error_msg	String	• Definition: Error message. • Range: None
error_code	String	• Definition: Error code. • Range: None

Example Requests

Remove the secondary CIDR block 23.8.0.0/16 from the VPC whose ID is 0552091e-b83a-49dd-88a7-4a5c86fd9ec3.

```
PUT https://{Endpoint}/v3/{project_id}/vpc/vpcs/0552091e-b83a-49dd-88a7-4a5c86fd9ec3/remove-extend-cidr

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

Example Responses

Status code: 200

Normal response to the PUT operation. For more status codes, see **Status Code**.

```
{
  "request_id" : "84eb4f775d66dd916db121768ec55626",
  "vpc" : {
    "id" : "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
    "name" : "vpc1",
    "description" : "test1",
    "cidr" : "192.168.0.0/16",
    "extend_cidrs" : [ ],
    "enterprise_project_id" : "0",
    "tags" : [ {
      "key" : "key",
      "value" : "value"
    } ],
    "cloud_resources" : [ {
      "resource_type" : "routetable",
      "resource_count" : 1
    } ],
    "status" : "ACTIVE",
    "project_id" : "060576782980d5762f9ec014dd2f1148",
    "created_at" : "2018-03-23T09:26:08",
    "updated_at" : "2018-08-24T08:49:53"
  }
}
```

Status code: 202

Normal response to the specified preflight request of API V3. For more status codes, see **Status Code**.

```
{
  "error_msg" : "Request validation has been passed with dry run...",
  "error_code" : "SYS.0202",
  "request_id" : "cfd81aea3f59eac7128dba4b36d516c8"
}
```


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Status Codes

Status Code	Description
200	Normal response to the PUT operation. For more status codes, see **Status Code**.
202	Normal response to the specified preflight request of API V3. For more status codes, see **Status Code**.

Error Codes

See **Error Codes**.

5.2 Security Group

5.2.1 Creating a Security Group

Function

A security group is a collection of access control rules for cloud instances, such as cloud servers, containers, and databases, that have the same security requirements and that are mutually trusted within a VPC. You can define different access control rules for a security group, and these rules are then applied to all the instances added to this security group.

Constraints

By default, a security group only allows instances in it to communicate with each other.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/vpc/security-groups

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Table 5-29 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Definition: ID of the project that a security group belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. • Range: None

Request Parameters

Table 5-30 Request body parameters

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	• Definition: Whether to only send the check request. • Constraints: None • Range: – **true**: A check request will be sent and no security group will be created. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. – **false**: A request will be sent and a security group will be created. • Default Value: **false**
security_group	Yes	**CreateSecurityGroupOption** object	• Definition: Request body for creating a security group. • Constraints: None • Range: None • Default Value: None

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Table 5-31 CreateSecurityGroupOption

Parameter	Mandatory	Type	Description
name	Yes	String	• Definition: Name of a security group. • Constraints: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). • Range: None • Default Value: None
description	No	String	• Definition: Description of a security group. • Constraints: The value can contain no more than 255 characters and cannot contain angle brackets (< or >). • Range: None • Default Value: None
tags	No	Array of **RequestTag** objects	• Definition: Tags of a security group, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. • Constraints: A maximum of 20 tag key-value pairs are supported. • Range: None • Default Value: None

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Table 5-32 RequestTag

Parameter	Mandatory	Type	Description
key	Yes	String	**Definition**: Tag key. **Constraints**: N/A **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters **Default Value**: N/A

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Parameter	Mandatory	Type	Description
value	Yes	String	**Definition**: Tag value. **Constraints**: N/A **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters **Default Value**: N/A

Response Parameters

Status code: 201

Table 5-33 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None
security_group	**SecurityGroupInfo** object	• Definition: Response body for creating a security group. • Range: None

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Table 5-34 SecurityGroupInfo

Parameter	Type	Description
id	String	• Definition: ID of a security group. After a security group is created, a security group ID is generated, which uniquely identifies the security group. • Range: The value is in UUID format with hyphens (-).
name	String	• Definition: Name of a security group. • Range: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	• Definition: Description of a security group. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
project_id	String	• Definition: ID of the project that a security group belongs to. • Range: None
created_at	String	• Definition: Time when a security group was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Definition: Time when a security group was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
tags	Array of **ResponseTag** objects	• Definition: Tags of a security group, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. • Range: None
security_group_rules	Array of **SecurityGroupRule** objects	• Definition: Security group rule list. • Range: None

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Table 5-35 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-36 SecurityGroupRule

Parameter	Type	Description
id	String	• Definition: ID of a security group rule. After a security group rule is created, a security group rule ID is generated, which uniquely identifies the security group rule. • Range: The value is in UUID format with hyphens (-).
description	String	• Definition: Description of a security group rule. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
security_group_id	String	• Definition: ID of the security group that a security group rule belongs to. • Range: None
direction	String	• Definition: Inbound or outbound direction of a security group rule. • Range: – **ingress**: inbound direction – **egress**: outbound direction
protocol	String	• Definition: Communication protocol of a security group rule. • Range: – **icmp** – **tcp** – **udp** – **icmpv6** – IP protocol number
ethertype	String	• Definition: IP address version of a security group rule. • Range: – IPv4 – IPv6

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Parameter	Type	Description
multiport	String	• Definition: Port range of a security group rule. • Range: The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80).
action	String	• Definition: Action of a security group rule. • Range: – **allow** – **deny**
priority	Integer	• Definition: Priority of a security group rule. • Range: The value is from 1 to 100. The value 1 indicates the highest priority.
remote_group_id	String	• Definition: ID of the remote security group of a security group rule. If the action of the rule is **allow**, the traffic from the remote security group is allowed. If the action of the rule is **deny**, the traffic from the remote security group is denied. • Range: ID of an existing security group.
remote_ip_prefix	String	• Definition: Remote IP address of a security group rule. – If **direction** is set to **egress**, the IP address is the outbound destination and will be accessed by instances in the security group. – If **direction** is set to **ingress**, the IP address is the inbound source and will access the instances in the security group. • Range: CIDR notation format. If an IP address is transferred in the request, the IP address is automatically formatted with /32 as the subnet mask, for example, 192.168.21.45/32.

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Parameter	Type	Description
remote_address_group_id	String	• Definition: ID of the remote IP address group of a security group rule. • Range: ID of an existing IP address group.
created_at	String	• Definition: Time when a security group rule was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Definition: Time when a security group rule was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
project_id	String	• Definition: ID of the project that a security group rule belongs to. • Range: None

Status code: 202

Table 5-37 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None
error_msg	String	• Definition: Error message. • Range: None
error_code	String	• Definition: Error code. • Range: None

Example Requests

- Create a security group, set its name to **security_group_1** and description to **security group description**, and specify the request as a prefight request.

```
POST https://{Endpoint}/v3/{project_id}/vpc/security-groups

{
  "security_group" : {
    "name" : "security_group_1",
    "description" : "security group description"
  },
  "dry_run" : true
}
```


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- Create a security group and set its name to *security_group_1** and description to **security group description**.

```
POST https://{Endpoint}/v3/{project_id}/vpc/security-groups

{
  "security_group" : {
    "name" : "security_group_1",
    "description" : "security group description"
  }
}
```

Example Responses

Status code: 201

Normal response to the POST operation. For more status codes, see **Status Code**.

-
```
{
  "security_group" : {
    "id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "name" : "security_group_1",
    "project_id" : "060576782980d5762f9ec014dd2f1148",
    "description" : "security group description",
    "enterprise_project_id" : "0",
    "tags" : [ ],
    "security_group_rules" : [ {
      "id" : "f11a3824-ac19-4fad-b4f1-c5f4a6dd0a80",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "remote_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "direction" : "ingress",
      "protocol" : null,
      "description" : "",
      "created_at" : "2020-07-09T05:56:27Z",
      "updated_at" : "2020-07-09T05:56:27Z",
      "ethertype" : "IPv6",
      "remote_ip_prefix" : null,
      "multiport" : null,
      "remote_address_group_id" : null,
      "action" : "allow",
      "priority" : 100
    }, {
      "id" : "3d6480e8-9ea4-46dc-bb1b-8db190cd5677",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "remote_group_id" : null,
      "direction" : "egress",
      "protocol" : null,
      "description" : "",
      "created_at" : "2020-07-09T05:56:27Z",
      "updated_at" : "2020-07-09T05:56:27Z",
      "ethertype" : "IPv6",
      "remote_ip_prefix" : null,
      "multiport" : null,
      "remote_address_group_id" : null,
      "action" : "allow",
      "priority" : 100
    }, {
      "id" : "9581f18c-1fdd-43da-ace9-7758a56ef28a",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "remote_group_id" : null,
      "direction" : "egress",
      "protocol" : null,
      "description" : "",
      "created_at" : "2020-07-09T05:56:27Z",
      "updated_at" : "2020-07-09T05:56:27Z",
      "ethertype" : "IPv4",
```


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```
    "remote_ip_prefix" : null,
    "multiport" : null,
    "remote_address_group_id" : null,
    "action" : "allow",
    "priority" : 100
  }, {
    "id" : "a3ba270e-e58b-432d-a912-aeb7eace9fb8",
    "project_id" : "060576782980d5762f9ec014dd2f1148",
    "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "remote_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "direction" : "ingress",
    "protocol" : null,
    "description" : "",
    "created_at" : "2020-07-09T05:56:27Z",
    "updated_at" : "2020-07-09T05:56:27Z",
    "ethertype" : "IPv4",
    "remote_ip_prefix" : null,
    "multiport" : null,
    "remote_address_group_id" : null,
    "action" : "allow",
    "priority" : 100
  } ],
  "created_at" : "2020-07-09T05:56:27Z",
  "updated_at" : "2020-07-09T05:56:27Z"
 },
 "request_id" : "a8cf4f79ca3c22ca685e7e8872e8c20b"
}
```


Status code: 202

Normal response for the specified pre-check request of API V3. For more status codes, see **Status Code**.


```
{
  "error_msg" : "Request validation has been passed with dry run...",
  "error_code" : "SYS.0202",
  "request_id" : "cfd81aea3f59eac7128dba4b36d516c8"
}
```


Status Codes

Status Code	Description
201	Normal response to the POST operation. For more status codes, see **Status Code**.
202	Normal response for the specified pre-check request of API V3. For more status codes, see **Status Code**.

Error Codes

See **Error Codes**.

5.2.2 Querying Security Groups

Function

After a security group is created, you can call this API to query all information about the security group, including the name, ID, and description.

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Constraints

You can query all security groups under your account. A maximum of 2,000 records can be returned for each query. If the number of records exceeds 2,000, the pagination marker will be returned.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/vpc/security-groups

Table 5-38 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Definition: ID of the project that a security group belongs to. Multiple IDs can be specified for filtering. • Range: None

Table 5-39 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	• Definition: Number of resources returned on each page. • Range: 0-2000
marker	No	String	• Definition: ID of the resource from which the pagination query starts. If the parameter is left blank, only resources on the first page are queried. • Range: Security group ID.
id	No	Array of strings	• Definition: ID of a security group. This field can be used to precisely filter security groups. Multiple IDs can be specified for filtering. • Range: None

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Parameter	Mandatory	Type	Description
name	No	Array of strings	• Definition: Name of a security group. This field can be used to precisely filter security groups. Multiple names can be specified for filtering. • Range: None
description	No	Array of strings	• Definition: Description of a security group. This field can be used to precisely filter security groups. Multiple descriptions can be specified for filtering. • Range: None

Request Parameters

None

Response Parameters

Status code: 200

Table 5-40 Response body parameters

Parameter	Type	Description
security_groups	Array of **SecurityGroup** objects	• Definition: Response body for querying security groups. • Range: None
request_id	String	• Definition: Request ID. • Range: None
page_info	**PageInfo** object	• Definition: Pagination information. • Range: None

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Table 5-41 SecurityGroup

Parameter	Type	Description
id	String	• Definition: ID of a security group. After a security group is created, a security group ID is generated, which uniquely identifies the security group. • Range: The value is in UUID format with hyphens (-).
name	String	• Definition: Name of a security group. • Range: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	• Definition: Description of a security group. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
project_id	String	• Definition: ID of the project that a security group belongs to. • Range: None
created_at	String	• Definition: Time when a security group was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Definition: Time when a security group was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
tags	Array of **ResponseTag** objects	• Definition: Tags of a security group, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. • Range: None

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Table 5-42 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

Table 5-43 PageInfo

Parameter	Type	Description
previous_marker	String	**Definition**: The first record on the current page. **Range**: N/A

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Parameter	Type	Description
current_count	Integer	**Definition**: Total number of resources on the current page. **Range**: N/A
next_marker	String	**Definition**: The last record on the current page. The **next_marker** field does not exist if the page is the last one. **Range**: N/A

Example Requests

Querying security groups

```
GET https://{Endpoint}/v3/{project_id}/vpc/security-groups
```

Example Responses

Status code: 200

Normal response to the GET operation. For more status codes, see **Status Codes**.

```
{
  "request_id" : "d31cb32ca06f3c1a294fa24e6cbc5a56",
  "security_groups" : [ {
    "id" : "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
    "name" : "sg-test",
    "project_id" : "060576782980d5762f9ec014dd2f1148",
    "description" : "test",
    "enterprise_project_id" : 0,
    "created_at" : "2019-10-16T11:11:14.000+00:00",
    "updated_at" : "2020-03-25T10:53:46.000+00:00",
    "tags" : [ ]
  }, {
    "id" : "0b8cb773-197c-4c91-94f1-e051f0563e5a",
    "name" : "test-sg",
    "project_id" : "060576782980d5762f9ec014dd2f1148",
    "description" : "The security group is for general-purpose web servers and includes default rules that allow all inbound ICMP traffic and allow inbound traffic on ports 22, 3389, 80, and 443. This security group is suitable for ECSs that require remote login, public network ping, and website services.",
    "enterprise_project_id" : 0,
    "created_at" : "2019-12-03T09:02:11.000+00:00",
    "updated_at" : "2019-12-03T09:02:11.000+00:00",
    "tags" : [ ]
  } ],
  "page_info" : {
    "previous_marker" : "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
    "current_count" : 2
  }
}
```


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Status Codes

Status Code	Description
200	Normal response to the GET operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.2.3 Querying the Details of a Security Group

Function

After a security group is created, you can call this API to query all information about the security group, including the name, ID, and description.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/vpc/security-groups/{security_group_id}

Table 5-44 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Definition: ID of the project that a security group belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. • Range: None
security_group_id	Yes	String	• Definition: ID of a security group. • Range: None

Request Parameters

None

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Response Parameters

Status code: 200

Table 5-45 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None
security_group	**SecurityGroupInfo** object	• Definition: Response body for querying details about a security group. • Range: None

Table 5-46 SecurityGroupInfo

Parameter	Type	Description
id	String	• Definition: ID of a security group. After a security group is created, a security group ID is generated, which uniquely identifies the security group. • Range: The value is in UUID format with hyphens (-).
name	String	• Definition: Name of a security group. • Range: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	• Definition: Description of a security group. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
project_id	String	• Definition: ID of the project that a security group belongs to. • Range: None
created_at	String	• Definition: Time when a security group was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ

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Parameter	Type	Description
updated_at	String	• Definition: Time when a security group was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
tags	Array of **ResponseTag** objects	• Definition: Tags of a security group, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. • Range: None
security_group_rules	Array of **SecurityGroupRule** objects	• Definition: Security group rule list. • Range: None

Table 5-47 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Parameter	Type	Description
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

Table 5-48 SecurityGroupRule

Parameter	Type	Description
id	String	• Definition: ID of a security group rule. After a security group rule is created, a security group rule ID is generated, which uniquely identifies the security group rule. • Range: The value is in UUID format with hyphens (-).
description	String	• Definition: Description of a security group rule. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
security_group_id	String	• Definition: ID of the security group that a security group rule belongs to. • Range: None
direction	String	• Definition: Inbound or outbound direction of a security group rule. • Range: – **ingress**: inbound direction – **egress**: outbound direction

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Parameter	Type	Description
protocol	String	• Definition: Communication protocol of a security group rule. • Range: – **icmp** – **tcp** – **udp** – **icmpv6** – IP protocol number
ethertype	String	• Definition: IP address version of a security group rule. • Range: – IPv4 – IPv6
multiport	String	• Definition: Port range of a security group rule. • Range: The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80).
action	String	• Definition: Action of a security group rule. • Range: – **allow** – **deny**
priority	Integer	• Definition: Priority of a security group rule. • Range: The value is from 1 to 100. The value 1 indicates the highest priority.
remote_group_id	String	• Definition: ID of the remote security group of a security group rule. If the action of the rule is **allow**, the traffic from the remote security group is allowed. If the action of the rule is **deny**, the traffic from the remote security group is denied. • Range: ID of an existing security group.

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Parameter	Type	Description
remote_ip_prefix	String	• Definition: Remote IP address of a security group rule. – If **direction** is set to **egress**, the IP address is the outbound destination and will be accessed by instances in the security group. – If **direction** is set to **ingress**, the IP address is the inbound source and will access the instances in the security group. • Range: CIDR notation format. If an IP address is transferred in the request, the IP address is automatically formatted with /32 as the subnet mask, for example, 192.168.21.45/32.
remote_address_group_id	String	• Definition: ID of the remote IP address group of a security group rule. • Range: ID of an existing IP address group.
created_at	String	• Definition: Time when a security group rule was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Definition: Time when a security group rule was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
project_id	String	• Definition: ID of the project that a security group rule belongs to. • Range: None

Example Requests

Querying the details of a security group

```
GET https://{Endpoint}/v3/{project_id}/vpc/security-groups/69c999ad-d9ef-4d79-94fd-35e6ceb75325
```

Example Responses

Status code: 200

Normal response to the GET operation. For more status codes, see **Status Codes**.

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- {
  "security_group" : {
    "id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "name" : "security_group_1",
    "project_id" : "060576782980d5762f9ec014dd2f1148",
    "description" : "security group description",
    "enterprise_project_id" : 0,
    "tags" : [{
      "key" : "a",
      "value" : "b"
    }],
    "security_group_rules" : [{
      "id" : "f11a3824-ac19-4fad-b4f1-c5f4a6dd0a80",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "remote_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "direction" : "ingress",
      "description" : "",
      "created_at" : "2020-07-09T05:56:27.000+00:00",
      "updated_at" : "2020-07-09T05:56:27.000+00:00",
      "ethertype" : "IPv6",
      "action" : "allow",
      "priority" : 100,
      "protocol" : null,
      "multiport" : null,
      "remote_ip_prefix" : null,
      "remote_address_group_id" : null
    }, {
      "id" : "3d6480e8-9ea4-46dc-bb1b-8db190cd5677",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "direction" : "egress",
      "description" : "",
      "created_at" : "2020-07-09T05:56:27.000+00:00",
      "updated_at" : "2020-07-09T05:56:27.000+00:00",
      "ethertype" : "IPv6",
      "action" : "allow",
      "priority" : 100,
      "protocol" : null,
      "multiport" : null,
      "remote_ip_prefix" : null,
      "remote_group_id" : null,
      "remote_address_group_id" : null
    }, {
      "id" : "9581f18c-1fdd-43da-ace9-7758a56ef28a",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "direction" : "egress",
      "description" : "",
      "created_at" : "2020-07-09T05:56:27.000+00:00",
      "updated_at" : "2020-07-09T05:56:27.000+00:00",
      "ethertype" : "IPv4",
      "action" : "allow",
      "priority" : 100,
      "protocol" : null,
      "multiport" : null,
      "remote_ip_prefix" : null,
      "remote_group_id" : null,
      "remote_address_group_id" : null
    }, {
      "id" : "a3ba270e-e58b-432d-a912-aeb7eace9fb8",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "remote_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "direction" : "ingress",
      "description" : "",
      "created_at" : "2020-07-09T05:56:27.000+00:00",
      "updated_at" : "2020-07-09T05:56:27.000+00:00",
      "ethertype" : "IPv4",

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```
    "action" : "allow",
    "priority" : 100,
    "protocol" : null,
    "multiport" : null,
    "remote_ip_prefix" : null,
    "remote_address_group_id" : null
   } ],
   "created_at" : "2020-07-09T05:56:27.000+00:00",
   "updated_at" : "2020-07-09T05:56:27.000+00:00"
  },
  "request_id" : "a8cf4f79ca3c22ca685e7e8872e8c20b"
}
```


Status Codes

Status Code	Description
200	Normal response to the GET operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.2.4 Updating a Security Group

Function

After a security group is created, you can call this API to update basic information about the security group, including the name and description.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/vpc/security-groups/{security_group_id}

Table 5-49 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Definition: ID of the project that a security group belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. • Range: None

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Parameter	Mandatory	Type	Description
security_group_id	Yes	String	• Definition: ID of a security group. • Range: None

Request Parameters

Table 5-50 Request body parameters

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	• Definition: Whether to only send the check request. • Constraints: None • Range: – **true**: A check request will be sent and no security group will be updated. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. – **false**: A request will be sent and a security group will be updated. • Default Value: **false**
security_group	Yes	**UpdateSecurityGroupOption** object	• Definition: Request body for updating a security group. • Constraints: None • Range: None • Default Value: None

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Table 5-51 UpdateSecurityGroupOption

Parameter	Mandatory	Type	Description
name	No	String	• Definition: Name of a security group. • Constraints: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). • Range: None • Default Value: None
description	No	String	• Definition: Description of a security group. • Constraints: The value can contain no more than 255 characters and cannot contain angle brackets (< or >). • Range: None • Default Value: None

Response Parameters

Status code: 200

Table 5-52 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None
security_group	**SecurityGroupInfo** object	• Definition: Response body for updating a security group. • Range: None

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Table 5-53 SecurityGroupInfo

Parameter	Type	Description
id	String	• Definition: ID of a security group. After a security group is created, a security group ID is generated, which uniquely identifies the security group. • Range: The value is in UUID format with hyphens (-).
name	String	• Definition: Name of a security group. • Range: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
description	String	• Definition: Description of a security group. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
project_id	String	• Definition: ID of the project that a security group belongs to. • Range: None
created_at	String	• Definition: Time when a security group was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Definition: Time when a security group was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
tags	Array of **ResponseTag** objects	• Definition: Tags of a security group, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. • Range: None
security_group_rules	Array of **SecurityGroupRule** objects	• Definition: Security group rule list. • Range: None

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Table 5-54 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-55 SecurityGroupRule

Parameter	Type	Description
id	String	• Definition: ID of a security group rule. After a security group rule is created, a security group rule ID is generated, which uniquely identifies the security group rule. • Range: The value is in UUID format with hyphens (-).
description	String	• Definition: Description of a security group rule. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
security_group_id	String	• Definition: ID of the security group that a security group rule belongs to. • Range: None
direction	String	• Definition: Inbound or outbound direction of a security group rule. • Range: – **ingress**: inbound direction – **egress**: outbound direction
protocol	String	• Definition: Communication protocol of a security group rule. • Range: – **icmp** – **tcp** – **udp** – **icmpv6** – IP protocol number
ethertype	String	• Definition: IP address version of a security group rule. • Range: – IPv4 – IPv6

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Parameter	Type	Description
multiport	String	• Definition: Port range of a security group rule. • Range: The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80).
action	String	• Definition: Action of a security group rule. • Range: – **allow** – **deny**
priority	Integer	• Definition: Priority of a security group rule. • Range: The value is from 1 to 100. The value 1 indicates the highest priority.
remote_group_id	String	• Definition: ID of the remote security group of a security group rule. If the action of the rule is **allow**, the traffic from the remote security group is allowed. If the action of the rule is **deny**, the traffic from the remote security group is denied. • Range: ID of an existing security group.
remote_ip_prefix	String	• Definition: Remote IP address of a security group rule. – If **direction** is set to **egress**, the IP address is the outbound destination and will be accessed by instances in the security group. – If **direction** is set to **ingress**, the IP address is the inbound source and will access the instances in the security group. • Range: CIDR notation format. If an IP address is transferred in the request, the IP address is automatically formatted with /32 as the subnet mask, for example, 192.168.21.45/32.

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Parameter	Type	Description
remote_address_group_id	String	• Definition: ID of the remote IP address group of a security group rule. • Range: ID of an existing IP address group.
created_at	String	• Definition: Time when a security group rule was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Definition: Time when a security group rule was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
project_id	String	• Definition: ID of the project that a security group rule belongs to. • Range: None

Status code: 202

Table 5-56 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None
error_msg	String	• Definition: Error message. • Range: None
error_code	String	• Definition: Error code. • Range: None

Example Requests

Change the name of the security group whose ID is 69c999ad-d9ef-4d79-94fd-35e6ceb75325 to **security_group_2** and its description to **modified description**.

```
PUT https://{Endpoint}/v3/{project_id}/vpc/security-groups/69c999ad-d9ef-4d79-94fd-35e6ceb75325

{
  "security_group" : {
    "name" : "security_group_2",
    "description" : "modified description"
  }
}
```

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Example Responses

Status code: 200

Normal response to the PUT operation. For more status codes, see **Status Codes**.

- {
  "security_group" : {
    "id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
    "name" : "security_group_2",
    "project_id" : "060576782980d5762f9ec014dd2f1148",
    "description" : "modified description",
    "enterprise_project_id" : 0,
    "tags" : [ ],
    "security_group_rules" : [{
      "id" : "f11a3824-ac19-4fad-b4f1-c5f4a6dd0a80",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "remote_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "direction" : "ingress",
      "description" : "",
      "created_at" : "2020-07-09T05:56:27.000+00:00",
      "updated_at" : "2020-07-09T05:56:27.000+00:00",
      "ethertype" : "IPv6",
      "action" : "allow",
      "priority" : 100,
      "protocol" : null,
      "multiport" : null,
      "remote_ip_prefix" : null,
      "remote_address_group_id" : null
    }, {
      "id" : "3d6480e8-9ea4-46dc-bb1b-8db190cd5677",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "direction" : "egress",
      "description" : "",
      "created_at" : "2020-07-09T05:56:27.000+00:00",
      "updated_at" : "2020-07-09T05:56:27.000+00:00",
      "ethertype" : "IPv6",
      "action" : "allow",
      "priority" : 100,
      "protocol" : null,
      "multiport" : null,
      "remote_ip_prefix" : null,
      "remote_group_id" : null,
      "remote_address_group_id" : null
    }, {
      "id" : "9581f18c-1fdd-43da-ace9-7758a56ef28a",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "direction" : "egress",
      "description" : "",
      "created_at" : "2020-07-09T05:56:27.000+00:00",
      "updated_at" : "2020-07-09T05:56:27.000+00:00",
      "ethertype" : "IPv4",
      "action" : "allow",
      "priority" : 100,
      "protocol" : null,
      "multiport" : null,
      "remote_ip_prefix" : null,
      "remote_group_id" : null,
      "remote_address_group_id" : null
    }, {
      "id" : "a3ba270e-e58b-432d-a912-aeb7eace9fb8",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "remote_group_id" : "69c999ad-d9ef-4d79-94fd-35e6ceb75325",
      "direction" : "ingress",
      "description" : "",

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```
    "created_at" : "2020-07-09T05:56:27.000+00:00",
    "updated_at" : "2020-07-09T05:56:27.000+00:00",
    "ethertype" : "IPv4",
    "action" : "allow",
    "priority" : 100,
    "protocol" : null,
    "multiport" : null,
    "remote_ip_prefix" : null,
    "remote_address_group_id" : null
  } ],
  "created_at" : "2020-07-09T05:56:27.000+00:00",
  "updated_at" : "2020-07-09T05:56:27.000+00:00"
 },
 "request_id" : "a8cf4f79ca3c22ca685e7e8872e8c20b"
}
```


Status code: 202

Normal response for the specified pre-check request of API V3. For more status codes, see **Status Code**.


```
{
  "error_msg" : "Request validation has been passed with dry run...",
  "error_code" : "SYS.0202",
  "request_id" : "cfd81aea3f59eac7128dba4b36d516c8"
}
```


Status Codes

Status Code	Description
200	Normal response to the PUT operation. For more status codes, see **Status Codes**.
202	Normal response for the specified pre-check request of API V3. For more status codes, see **Status Code**.

Error Codes

See **Error Codes**.

5.2.5 Deleting a Security Group

Function

You can call this API to delete a security group that is no longer used.

Constraints

Before deleting a security group, ensure that the security group is not associated with any instance.

Calling Method

For details, see **Calling APIs**.

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URI

DELETE /v3/{project_id}/vpc/security-groups/{security_group_id}

Table 5-57 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Definition: ID of the project that a security group belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. • Range: None
security_group_id	Yes	String	• Definition: ID of a security group. • Range: None

Request Parameters

None

Response Parameters

Status code: 204

Normal response to the DELETE operation. For more status codes, see **Status Codes**.

None

Example Requests

Deleting a security group

```
DELETE https://{Endpoint}/v3/{project_id}/vpc/security-groups/69c999ad-d9ef-4d79-94fd-35e6ceb75325
```

Example Responses

None

Status Codes

Status Code	Description
204	Normal response to the DELETE operation. For more status codes, see **Status Codes**.

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Error Codes

See **Error Codes**.

5.3 Security Group Rule

5.3.1 Creating a Security Group Rule

Function

A security group has inbound and outbound rules to control traffic that is allowed to reach or leave the instances associated with the security group.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/vpc/security-group-rules

Table 5-58 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Definition: ID of the project that a security group rule belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. • Range: None

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Request Parameters

Table 5-59 Request body parameters

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	• Definition: Whether to only send the check request. • Constraints: None • Range: – **true**: A check request will be sent and no security group rule will be created. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. – **false**: A request will be sent and a security group rule will be created. • Default Value: **false**
security_group_rule	Yes	**CreateSecurityGroupRuleOption** object	• Definition: Request body for creating a security group rule. • Constraints: None • Range: None • Default Value: None

Table 5-60 CreateSecurityGroupRuleOption

Parameter	Mandatory	Type	Description
security_group_id	Yes	String	• Definition: ID of the security group that a security group rule belongs to. • Constraints: None • Range: None • Default Value: None

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Parameter	Mandatory	Type	Description
description	No	String	• Definition: Description of a security group rule. • Constraints: The value can contain no more than 255 characters and cannot contain angle brackets (< or >). • Range: None • Default Value: None
direction	Yes	String	• Definition: Inbound or outbound direction of a security group rule. • Constraints: None • Range: – **ingress**: inbound direction – **egress**: outbound direction • Default Value: None
ethertype	No	String	• Definition: IP address version of a security group rule. • Constraints: None • Range: – IPv4 – IPv6 • Default Value: IPv4

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Parameter	Mandatory	Type	Description
protocol	No	String	• Definition: Communication protocol of a security group rule. • Constraints: – If the parameter is left blank, all protocols are supported. – If the protocol is **icmpv6**, IP version should be IPv6. – If the protocol is **icmp**, IP version should be IPv4. • Range: – **icmp** – **tcp** – **udp** – **icmpv6** – IP protocol number (0-255) • Default Value: None
multiport	No	String	• Definition: Port range of a security group rule. • Constraints: The port number ranges from 1 to 65535. • Range: The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80). • Default Value: None

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Parameter	Mandatory	Type	Description
remote_ip_prefix	No	String	• Definition: Remote IP address of a security group rule. If direction is set to **egress**, this address is the outbound destination and will be accessed by instances in the security group. If direction is set to **ingress**, this address is the inbound source and will access instances in the security group. • Constraints: – This parameter is mutually exclusive with parameters **remote_group_id** and **remote_address_group_id**. – If this parameter is left blank, traffic from all remote IP addresses is allowed when the action of the rule is **allow**, and is denied when the action of the rule is **deny**. • Range: – IP address. If an IP address is specified in the request, the IP address is automatically formatted with /32 as the subnet mask, for example, 192.168.21.45/32. – The value must be in CIDR format. • Default Value: None

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Parameter	Mandatory	Type	Description
remote_group_id	No	String	• Definition: ID of the remote security group of a security group rule. If the action of the rule is **allow**, the traffic from the remote security group is allowed. If the action of the rule is **deny**, the traffic from the remote security group is denied. • Constraints: The parameter is mutually exclusive with parameters **remote_ip_prefix** and **remote_address_group_id**. • Range: ID of an existing security group. • Default Value: None
remote_address_group_id	No	String	• Definition: ID of the remote IP address group of a security group rule. • Constraints: The parameter is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**. • Range: ID of an existing IP address group. • Default Value: None
action	No	String	• Definition: Action of a security group rule. • Constraints: None • Range: – **allow** – **deny** • Default Value: **allow**
priority	No	String	• Definition: Priority of a security group rule. • Constraints: None • Range: The value is from 1 to 100. The value 1 indicates the highest priority. • Default Value: 1

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Response Parameters

Status code: 201

Table 5-61 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None
security_group_rule	SecurityGroupRule object	• Definition: Response body for creating a security group rule. • Range: None

Table 5-62 SecurityGroupRule

Parameter	Type	Description
id	String	• Definition: ID of a security group rule. After a security group rule is created, a security group rule ID is generated, which uniquely identifies the security group rule. • Range: The value is in UUID format with hyphens (-).
description	String	• Definition: Description of a security group rule. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
security_group_id	String	• Definition: ID of the security group that a security group rule belongs to. • Range: None
direction	String	• Definition: Inbound or outbound direction of a security group rule. • Range: – **ingress**: inbound direction – **egress**: outbound direction

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Parameter	Type	Description
protocol	String	• Definition: Communication protocol of a security group rule. • Range: – **icmp** – **tcp** – **udp** – **icmpv6** – IP protocol number
ethertype	String	• Definition: IP address version of a security group rule. • Range: – IPv4 – IPv6
multiport	String	• Definition: Port range of a security group rule. • Range: The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80).
action	String	• Definition: Action of a security group rule. • Range: – **allow** – **deny**
priority	Integer	• Definition: Priority of a security group rule. • Range: The value is from 1 to 100. The value 1 indicates the highest priority.
remote_group_id	String	• Definition: ID of the remote security group of a security group rule. If the action of the rule is **allow**, the traffic from the remote security group is allowed. If the action of the rule is **deny**, the traffic from the remote security group is denied. • Range: ID of an existing security group.

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Parameter	Type	Description
remote_ip_prefix	String	• Definition: Remote IP address of a security group rule. – If **direction** is set to **egress**, the IP address is the outbound destination and will be accessed by instances in the security group. – If **direction** is set to **ingress**, the IP address is the inbound source and will access the instances in the security group. • Range: CIDR notation format. If an IP address is transferred in the request, the IP address is automatically formatted with /32 as the subnet mask, for example, 192.168.21.45/32.
remote_address_group_id	String	• Definition: ID of the remote IP address group of a security group rule. • Range: ID of an existing IP address group.
created_at	String	• Definition: Time when a security group rule was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Definition: Time when a security group rule was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
project_id	String	• Definition: ID of the project that a security group rule belongs to. • Range: None

Status code: 202

Table 5-63 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None

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Parameter	Type	Description
error_msg	String	• Definition: Error message. • Range: None
error_code	String	• Definition: Error code. • Range: None

Example Requests

Create an inbound rule in the security group whose ID is 0552091e-b83a-49dd-88a7-4a5c86fd9ec3.

```
POST https://{Endpoint}/v3/{project_id}/vpc/security-group-rules

{
  "security_group_rule" : {
    "security_group_id" : "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
    "direction" : "ingress",
    "protocol" : "tcp",
    "description" : "security group rule description",
    "action" : "allow",
    "priority" : 1,
    "multiport" : "33",
    "remote_ip_prefix" : "10.10.0.0/16"
  }
}
```

Example Responses

Status code: 201

Normal response to the POST operation. For more status codes, see **Status Codes**.

- ```
  {
    "request_id" : "1666b2708aaf849337572d6846dce781",
    "security_group_rule" : {
      "id" : "f626eb24-d8bd-4d26-ae0b-c16bb65730cb",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
      "direction" : "ingress",
      "protocol" : "tcp",
      "description" : "security group rule description",
      "created_at" : "2020-08-13T07:12:36.000+00:00",
      "updated_at" : "2020-08-13T07:12:36.000+00:00",
      "ethertype" : "IPv4",
      "remote_ip_prefix" : "10.10.0.0/16",
      "multiport" : 33,
      "action" : "allow",
      "priority" : 1,
      "remote_group_id" : null,
      "remote_address_group_id" : null
    }
  }
  ```

Status code: 202

Normal response for the specified pre-check request of API V3. For more status codes, see **Status Code**.

```
{
  "error_msg" : "Request validation has been passed with dry run...",
```

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```

```
  "error_code" : "SYS.0202",
  "request_id" : "cfd81aea3f59eac7128dba4b36d516c8"
}
```

Status Codes

Status Code	Description
201	Normal response to the POST operation. For more status codes, see **Status Codes**.
202	Normal response for the specified pre-check request of API V3. For more status codes, see **Status Code**.

Error Codes

See **Error Codes**.

5.3.2 Querying a Security Group Rule

Function

After a security group rule is created, you can call this API to query all information about the security group rule, including the ID and protocol.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/vpc/security-group-rules/{security_group_rule_id}

Table 5-64 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Definition: ID of the project that a security group rule belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. • Range: None

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Parameter	Mandatory	Type	Description
security_group_rule_id	Yes	String	• Definition: Security group rule ID. You can call the API **Querying Security Group Rules** to obtain the ID of the target security group rule, and then use this API to query details about the security group rule. • Range: None

Request Parameters

None

Response Parameters

Status code: 200

Table 5-65 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None
security_group_rule	**SecurityGroupRule** object	• Definition: Response body for querying details about a security group rule. • Range: None

Table 5-66 SecurityGroupRule

Parameter	Type	Description
id	String	• Definition: ID of a security group rule. After a security group rule is created, a security group rule ID is generated, which uniquely identifies the security group rule. • Range: The value is in UUID format with hyphens (-).

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Parameter	Type	Description
description	String	• Definition: Description of a security group rule. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
security_group_id	String	• Definition: ID of the security group that a security group rule belongs to. • Range: None
direction	String	• Definition: Inbound or outbound direction of a security group rule. • Range: – **ingress**: inbound direction – **egress**: outbound direction
protocol	String	• Definition: Communication protocol of a security group rule. • Range: – **icmp** – **tcp** – **udp** – **icmpv6** – IP protocol number
ethertype	String	• Definition: IP address version of a security group rule. • Range: – IPv4 – IPv6
multiport	String	• Definition: Port range of a security group rule. • Range: The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80).
action	String	• Definition: Action of a security group rule. • Range: – **allow** – **deny**

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Parameter	Type	Description
priority	Integer	• Definition: Priority of a security group rule. • Range: The value is from 1 to 100. The value 1 indicates the highest priority.
remote_group_id	String	• Definition: ID of the remote security group of a security group rule. If the action of the rule is **allow**, the traffic from the remote security group is allowed. If the action of the rule is **deny**, the traffic from the remote security group is denied. • Range: ID of an existing security group.
remote_ip_prefix	String	• Definition: Remote IP address of a security group rule. – If **direction** is set to **egress**, the IP address is the outbound destination and will be accessed by instances in the security group. – If **direction** is set to **ingress**, the IP address is the inbound source and will access the instances in the security group. • Range: CIDR notation format. If an IP address is transferred in the request, the IP address is automatically formatted with /32 as the subnet mask, for example, 192.168.21.45/32.
remote_address_group_id	String	• Definition: ID of the remote IP address group of a security group rule. • Range: ID of an existing IP address group.
created_at	String	• Definition: Time when a security group rule was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Definition: Time when a security group rule was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ

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Parameter	Type	Description
project_id	String	• Definition: ID of the project that a security group rule belongs to. • Range: None

Example Requests

Query details about a security group rule.

```
GET https://{Endpoint}/v3/{project_id}/vpc/security-group-rules/f626eb24-d8bd-4d26-ae0b-c16bb65730cb
```

Example Responses

Status code: 200

Normal response to the GET operation. For more status codes, see **Status Codes**.

- ```
  {
    "security_group_rule" : {
      "id" : "f626eb24-d8bd-4d26-ae0b-c16bb65730cb",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
      "direction" : "ingress",
      "protocol" : "tcp",
      "description" : "security group rule description",
      "created_at" : "2020-08-13T07:12:36.000+00:00",
      "updated_at" : "2020-08-13T07:12:36.000+00:00",
      "ethertype" : "IPv4",
      "remote_ip_prefix" : "10.10.0.0/16",
      "multiport" : 333,
      "action" : "allow",
      "priority" : 1,
      "remote_group_id" : null,
      "remote_address_group_id" : null
    },
    "request_id" : "034c4840bde0b1263a4b2e66fbd74d5f"
  }
  ```

Status Codes

Status Code	Description
200	Normal response to the GET operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

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  ```

5.3.3 Querying Security Group Rules

Function

After a security group rule is created, you can call this API to query all information about the security group rule, including the ID and protocol.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/vpc/security-group-rules

Table 5-67 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Definition: ID of the project that a security group rule belongs to. Multiple IDs can be specified for filtering. • Range: None

Table 5-68 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	• Definition: Number of records returned on each page. • Range: 0-2000
marker	No	String	• Definition: ID of the resource from which the pagination query starts. If the parameter is left blank, only resources on the first page are queried. • Range: Security group rule ID.
id	No	Array of strings	• Definition: ID of a security group rule. Multiple IDs can be specified for filtering. • Range: None

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Parameter	Mandatory	Type	Description
security_group_id	No	Array of strings	• Definition: ID of the security group that a security group rule belongs to. Multiple IDs can be specified for filtering. • Range: None
protocol	No	Array of strings	• Definition: Communication protocol of a security group rule. Multiple values can be specified for filtering. • Range: None
description	No	Array of strings	• Definition: Description of a security group rule. Multiple descriptions can be specified for filtering. • Range: None
remote_group_id	No	Array of strings	• Definition: Remote security group ID of a security group rule. Multiple IDs can be specified for filtering. • Range: None
direction	No	String	• Definition: Inbound or outbound direction of a security group rule. • Range: – **ingress**: inbound direction – **egress**: outbound direction
action	No	String	• Definition: Action of a security group rule. • Range: – **allow** – **deny**
remote_ip_prefix	No	String	• Definition: Remote IP address of a security group rule. • Range: The value must be in CIDR format.

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Parameter	Mandatory	Type	Description
priority	No	Array of integers	• Definition: Priority of a security group rule. Multiple values can be specified for filtering. • Range: None
ethertype	No	Array of strings	• Definition: IP address version of a security group rule. Multiple values can be specified for filtering. • Range: **IPv4**, **IPv6**, **ipv4**, and **ipv6**
remote_address_group_id	No	Array of strings	• Definition: Remote IP address group ID of a security group rule. Multiple IDs can be specified for filtering. • Range: None

Request Parameters

None

Response Parameters

Status code: 200

Table 5-69 Response body parameters

Parameter	Type	Description
request_id	String	• Definition: Request ID. • Range: None
security_group_rules	Array of **SecurityGroupRule** objects	• Definition: Response body for querying security group rules. • Range: None
page_info	**PageInfo** object	• Definition: Pagination information. • Range: None

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Table 5-70 SecurityGroupRule

Parameter	Type	Description
id	String	• Definition: ID of a security group rule. After a security group rule is created, a security group rule ID is generated, which uniquely identifies the security group rule. • Range: The value is in UUID format with hyphens (-).
description	String	• Definition: Description of a security group rule. • Range: The value can contain no more than 255 characters and cannot contain angle brackets (< or >).
security_group_id	String	• Definition: ID of the security group that a security group rule belongs to. • Range: None
direction	String	• Definition: Inbound or outbound direction of a security group rule. • Range: – **ingress**: inbound direction – **egress**: outbound direction
protocol	String	• Definition: Communication protocol of a security group rule. • Range: – **icmp** – **tcp** – **udp** – **icmpv6** – IP protocol number
ethertype	String	• Definition: IP address version of a security group rule. • Range: – IPv4 – IPv6

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Parameter	Type	Description
multiport	String	• Definition: Port range of a security group rule. • Range: The value can be a single port (80), a port range (1-30), or inconsecutive ports separated by commas (22,3389,80).
action	String	• Definition: Action of a security group rule. • Range: – **allow** – **deny**
priority	Integer	• Definition: Priority of a security group rule. • Range: The value is from 1 to 100. The value 1 indicates the highest priority.
remote_group_id	String	• Definition: ID of the remote security group of a security group rule. If the action of the rule is **allow**, the traffic from the remote security group is allowed. If the action of the rule is **deny**, the traffic from the remote security group is denied. • Range: ID of an existing security group.
remote_ip_prefix	String	• Definition: Remote IP address of a security group rule. – If **direction** is set to **egress**, the IP address is the outbound destination and will be accessed by instances in the security group. – If **direction** is set to **ingress**, the IP address is the inbound source and will access the instances in the security group. • Range: CIDR notation format. If an IP address is transferred in the request, the IP address is automatically formatted with /32 as the subnet mask, for example, 192.168.21.45/32.

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Parameter	Type	Description
remote_address_group_id	String	• Definition: ID of the remote IP address group of a security group rule. • Range: ID of an existing IP address group.
created_at	String	• Definition: Time when a security group rule was created. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Definition: Time when a security group rule was updated. • Range: UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
project_id	String	• Definition: ID of the project that a security group rule belongs to. • Range: None

Table 5-71 PageInfo

Parameter	Type	Description
previous_marker	String	**Definition**: The first record on the current page. **Range**: N/A
current_count	Integer	**Definition**: Total number of resources on the current page. **Range**: N/A
next_marker	String	**Definition**: The last record on the current page. The **next_marker** field does not exist if the page is the last one. **Range**: N/A

Example Requests

Query security group rules.

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```
GET https://{Endpoint}/v3/{project_id}/vpc/security-group-rules
```

Example Responses

Status code: 200

Normal response to the GET operation. For more status codes, see **Status Codes**.

- ```
  {
    "request_id" : "80747d36e3376c0894ba8f9a9156355d",
    "security_group_rules" : [ {
      "id" : "f626eb24-d8bd-4d26-ae0b-c16bb65730cb",
      "project_id" : "060576782980d5762f9ec014dd2f1148",
      "security_group_id" : "0552091e-b83a-49dd-88a7-4a5c86fd9ec3",
      "direction" : "ingress",
      "protocol" : "tcp",
      "description" : "security group rule description",
      "created_at" : "2020-08-13T07:12:36.000+00:00",
      "updated_at" : "2020-08-13T07:12:36.000+00:00",
      "ethertype" : "IPv4",
      "remote_ip_prefix" : "10.10.0.0/16",
      "multiport" : 333,
      "action" : "allow",
      "priority" : 1,
      "remote_group_id" : null,
      "remote_address_group_id" : null
    } ]
  }
  ```

Status Codes

Status Code	Description
200	Normal response to the GET operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.3.4 Deleting a Security Group Rule

Function

You can call this API to delete a security group rule that is no longer used.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/vpc/security-group-rules/{security_group_rule_id}

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  ```

Table 5-72 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	• Definition: Project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**. • Range: None
security_group_rule_id	Yes	String	• Definition: ID of a security group rule. You can call the API **Querying Security Group Rules** to obtain the ID of the target security group rule, and then use this API to delete the security group rule. • Range: None

Request Parameters

None

Response Parameters

Status code: 204

Normal response to the DELETE operation. For more status codes, see **Status Codes**.

None

Example Requests

Delete the security group rule whose ID is f626eb24-d8bd-4d26-ae0b-c16bb65730cb.

```
DELETE https://{Endpoint}/v3/{project_id}/vpc/security-group-rules/f626eb24-d8bd-4d26-ae0b-c16bb65730cb
```

Example Responses

None

Status Codes

Status Code	Description
204	Normal response to the DELETE operation. For more status codes, see **Status Codes**.

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Error Codes

See **Error Codes**.

5.4 IP Address Group

5.4.1 Creating an IP Address Group

Function

An IP address group is a collection of IP addresses. It can be associated with security groups and network ACLs to simplify IP address configuration and management in networking. You can create an IP address group to centrally manage IP address ranges and IP addresses.

Constraints

The default IP address group quota for each account is 50.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/vpc/address-groups

Table 5-73 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Definition**: ID of the project that an IP address group belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

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Request Parameters

Table 5-74 Request body parameters

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • **true**: A check request will be sent and no IP address group will be created. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • **false**: A request will be sent and an IP address group will be created. **Default Value**: **false**
address_group	Yes	**CreateAddressGroupOption** object	**Definition**: Request body for creating an IP address group. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Table 5-75 CreateAddressGroupOption

Parameter	Mandatory	Type	Description
name	Yes	String	**Definition**: The name of an IP address group. **Constraints**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods. **Range**: N/A **Default Value**: N/A
description	No	String	**Definition**: Description about an IP address group. **Constraints**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >). **Range**: N/A **Default Value**: N/A
ip_version	Yes	Integer	**Definition**: IP address version of an IP address group. **Constraints**: N/A **Range**: • **4**: IPv4 address group • **6**: IPv6 address group **Default Value**: N/A

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Parameter	Mandatory	Type	Description
max_capacity	No	Integer	**Definition**: Maximum number of IP address entries in an IP address group. **Constraints**: N/A **Range**: 0 to 20 **Default Value**: 20
ip_set	No	Array of strings	**Definition**: IP address entries in an IP address group. Both IPv4 and IPv6 address entries are supported. **Constraints**: ● The default maximum number of IP address sets, including IP addresses, IP address ranges, and CIDR blocks, in an IP address group is 20. ● The **ip_set** and **ip_extra_set** parameters cannot be both specified in a request. If you need to add remarks for IP address entries, use the **ip_extra_set** parameter. **Range**: An IP address entry in an IP address set can be: ● A single IP address, for example, 192.168.21.25 ● An IP address range, for example, 192.168.21.25-192.168.21.30 ● A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A

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Parameter	Mandatory	Type	Description
ip_extra_set	No	Array of **IpExtraSetOption** objects	**Definition**: IP address entries in an IP address group and their remarks. There are multiple IP address entry objects in an IP address group. Each IP address entry object contains one IP address entry and its remarks. An IP address entry is the same as that in **ip_set**. The remarks can describe the usage of the IP address entry. **Constraints**: • By default, the maximum number of IP address entry objects is 20. • The **ip_set** and **ip_extra_set** parameters cannot be both specified in a request. If you need to add remarks for IP address entries, use the **ip_extra_set** parameter. **Range**: N/A **Default Value**: N/A

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Table 5-76 IpExtraSetOption

Parameter	Mandatory	Type	Description
ip	Yes	String	**Definition**: IP address entries in an IP address group. Both IPv4 and IPv6 address entries are supported. **Constraints**: N/A **Range**: • A single IP address, for example, 192.168.21.25 • An IP address range, for example, 192.168.21.25-192.168.21.30 • A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A
remarks	No	String	**Definition**: Remarks of an IP address entry. **Constraints**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >). **Range**: N/A **Default Value**: N/A

Response Parameters

Status code: 201

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Table 5-77 Response body parameters

Parameter	Type	Description
request_id	String	**Definition**: Request ID. **Range**: N/A
address_group	**AddressGroup** object	**Definition**: Response body for creating an IP address group. **Range**: N/A

Table 5-78 AddressGroup

Parameter	Type	Description
id	String	**Definition**: ID of an IP address group. After an IP address group is created, an IP address group ID is generated, which uniquely identifies the IP address group. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: The name of an IP address group. **Range**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Description about an IP address group. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
max_capacity	Integer	**Definition**: Maximum number of IP address entries in an IP address group. **Range**: The value can be from 0 to 20. The default value is 20.
ip_set	Array of strings	**Definition**: IP address entries in an IP address group. Both IPv4 and IPv6 address entries are supported. **Range**: An IP address entry in an IP address set can be: ● A single IP address, for example, 192.168.21.25 ● An IP address range, for example, 192.168.21.25-192.168.21.30 ● A CIDR block, for example, 192.168.21.0/24
ip_version	Integer	**Definition**: IP address version of an IP address group. **Range**: ● **4**: IPv4 address group ● **6**: IPv6 address group
created_at	String	**Definition**: Time when an IP address group was created. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ss*.
updated_at	String	**Definition**: Time when an IP address group was last updated. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ss*.

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Parameter	Type	Description
tenant_id	String	**Definition**: ID of the project that an IP address group belongs to. **Range**: N/A
enterprise_project_id	String	**Definition**: ID of the enterprise project that an IP address group belongs to. **Range**: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.
tags	Array of **ResponseTag** objects	**Definition**: Tags of an IP address group, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
status	String	**Definition**: Status of an IP address group. If the IP address group is in the **UPDATING** state, it cannot be updated again. **Range**: • **NORMAL**: normal (default value) • **UPDATING**: being updated • **UPDATE_FAILED**: update failed
status_message	String	**Definition**: Details about the IP address group status. **Range**: N/A
ip_extra_set	Array of **IpExtraSetRespOption** objects	**Definition**: IP address entries in an IP address group and their remarks. **Range**: N/A

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Table 5-79 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-80 IpExtraSetRespOption

Parameter	Type	Description
ip	String	**Definition**: IP address entries in an IP address group. Both IPv4 and IPv6 address entries are supported. **Range**: • A single IP address, for example, 192.168.21.25 • An IP address range, for example, 192.168.21.25-192.168.21.30 • A CIDR block, for example, 192.168.21.0/24
remarks	String	**Definition**: Remarks of an IP address entry. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

Example Requests

Create an IP address group named **AutoTester746010.580123789**, set the IP address version to IPv4, and the IP set to 192.168.3.2, 192.168.3.40, 192.168.3.20-192.168.3.100, and 192.168.5.0/24.

```
POST https://{{endpoint}}/v3/b2782e6708b8475c993e6064bc456bf8/vpc/address-groups

{
  "address_group" : {
    "ip_version" : 4,
    "name" : "AutoTester746010.580123789",
    "ip_set" : [ "192.168.3.2", "192.168.3.40", "192.168.3.20-192.168.3.100", "192.168.5.0/24" ],
    "description" : "test",
    "enterprise_project_id" : "0aad99bc-f5f6-4f78-8404-c598d76b0ed2",
    "max_capacity" : 20
  }
}
```

Example Responses

Status code: 201

Normal response to the POST operation. For more status codes, see **Status Codes**.

```
{
  "address_group" : {
    "id" : "dd18a501-fcd5-4adc-acfe-b0e2384baf08",
    "name" : "AutoTester746010.580123789",
    "tenant_id" : "b2782e6708b8475c993e6064bc456bf8",
    "ip_version" : 4,
    "max_capacity" : 20,
```


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```
    "ip_set" : [ "192.168.5.0/24", "192.168.3.20-192.168.3.100", "192.168.3.40", "192.168.3.2" ],
    "ip_extra_set" : [ {
      "ip" : "192.168.5.0/24",
      "remarks" : null
    }, {
      "ip" : "192.168.3.20-192.168.3.100",
      "remarks" : null
    }, {
      "ip" : "192.168.3.40",
      "remarks" : null
    }, {
      "ip" : "192.168.3.2",
      "remarks" : null
    } ],
    "enterprise_project_id" : "0aad99bc-f5f6-4f78-8404-c598d76b0ed2",
    "created_at" : "2019-06-28T02:06:38.000+00:00",
    "updated_at" : "2019-06-28T02:06:38.000+00:00",
    "description" : "test",
    "status" : "NORMAL",
    "status_message" : "",
    "tags" : [ ]
  },
  "request_id" : "f568db7a-2675-4271-8747-3e3f1c6381ba"
}
```


Status Codes

Status Code	Description
201	Normal response to the POST operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.4.2 Querying IP Address Groups

Function

This API is used to query information about all IP address groups, including the IP address group name and IP addresses.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/vpc/address-groups

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Table 5-81 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Definition**: ID of the project that an IP address group belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Table 5-82 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	**Definition**: Number of resources on each page. **Range**: 0 to 2000
marker	No	String	**Definition**: Start resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried. **Range**: ID of an IP address group.
id	No	Array of strings	**Definition**: ID of an IP address group. This field can be used to precisely filter IP address groups. Multiple IDs can be specified for filtering. **Range**: N/A
name	No	Array of strings	**Definition**: The name of an IP address group. This field can be used to precisely filter IP address groups. Multiple names can be specified for filtering. **Range**: N/A

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Parameter	Mandatory	Type	Description
ip_version	No	Integer	**Definition**: IP address version of an IP address group. This field can be used to filter IP address groups. **Range**: • **4**: IPv4 address groups will be filtered. • **6**: IPv6 address groups will be filtered.
description	No	Array of strings	**Definition**: Description about an IP address group. This field can be used to precisely filter IP address groups. Multiple descriptions can be specified for filtering. **Range**: N/A

Request Parameters

None

Response Parameters

Status code: 200

Table 5-83 Response body parameters

Parameter	Type	Description
request_id	String	**Definition**: Request ID. **Range**: N/A
address_groups	Array of **AddressGroup** objects	**Definition**: Response body for querying IP address groups. **Range**: N/A

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Parameter	Type	Description
page_info	PageInfo object	**Definition**: Pagination information. **Range**: N/A

Table 5-84 AddressGroup

Parameter	Type	Description
id	String	**Definition**: ID of an IP address group. After an IP address group is created, an IP address group ID is generated, which uniquely identifies the IP address group. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: The name of an IP address group. **Range**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Description about an IP address group. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
max_capacity	Integer	**Definition**: Maximum number of IP address entries in an IP address group. **Range**: The value can be from 0 to 20. The default value is 20.

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Parameter	Type	Description
ip_set	Array of strings	**Definition**: IP address entries in an IP address group. Both IPv4 and IPv6 address entries are supported. **Range**: An IP address entry in an IP address set can be: ● A single IP address, for example, 192.168.21.25 ● An IP address range, for example, 192.168.21.25-192.168.21.30 ● A CIDR block, for example, 192.168.21.0/24
ip_version	Integer	**Definition**: IP address version of an IP address group. **Range**: ● **4**: IPv4 address group ● **6**: IPv6 address group
created_at	String	**Definition**: Time when an IP address group was created. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ss*.
updated_at	String	**Definition**: Time when an IP address group was last updated. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ss*.
tenant_id	String	**Definition**: ID of the project that an IP address group belongs to. **Range**: N/A

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Parameter	Type	Description
enterprise_project_id	String	**Definition**: ID of the enterprise project that an IP address group belongs to. **Range**: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.
tags	Array of **ResponseTag** objects	**Definition**: Tags of an IP address group, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
status	String	**Definition**: Status of an IP address group. If the IP address group is in the **UPDATING** state, it cannot be updated again. **Range**: • **NORMAL**: normal (default value) • **UPDATING**: being updated • **UPDATE_FAILED**: update failed
status_message	String	**Definition**: Details about the IP address group status. **Range**: N/A
ip_extra_set	Array of **IpExtraSetRespOption** objects	**Definition**: IP address entries in an IP address group and their remarks. **Range**: N/A

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Table 5-85 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-86 IpExtraSetRespOption

Parameter	Type	Description
ip	String	**Definition**: IP address entries in an IP address group. Both IPv4 and IPv6 address entries are supported. **Range**: • A single IP address, for example, 192.168.21.25 • An IP address range, for example, 192.168.21.25-192.168.21.30 • A CIDR block, for example, 192.168.21.0/24
remarks	String	**Definition**: Remarks of an IP address entry. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

Table 5-87 PageInfo

Parameter	Type	Description
previous_marker	String	**Definition**: The first record on the current page. **Range**: N/A
current_count	Integer	**Definition**: Total number of resources on the current page. **Range**: N/A
next_marker	String	**Definition**: The last record on the current page. The **next_marker** field does not exist if the page is the last one. **Range**: N/A

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Example Requests

Query IP address groups based on combined filters.

```
GET https://{{endpoint}}/v3/b2782e6708b8475c993e6064bc456bf8/vpc/address-groups?name=ipGroup-test&description=test&ip_version=4
```

Example Responses

Status code: 200

Normal response to the GET operation. For more status codes, see **Status Codes**.

```
{
  "address_groups" : [ {
    "id" : "dd18a501-fcd5-4adc-acfe-b0e2384baf08",
    "name" : "ipGroup-test",
    "tenant_id" : "b2782e6708b8475c993e6064bc456bf8",
    "ip_version" : 4,
    "max_capacity" : 20,
    "ip_set" : [ "192.168.5.0/24", "192.168.3.20-192.168.3.100", "192.168.3.40", "192.168.3.2" ],
    "ip_extra_set" : [ {
      "ip" : "192.168.5.0/24",
      "remarks" : null
    }, {
      "ip" : "192.168.3.20-192.168.3.100",
      "remarks" : null
    }, {
      "ip" : "192.168.3.40",
      "remarks" : null
    }, {
      "ip" : "192.168.3.2",
      "remarks" : null
    } ],
    "enterprise_project_id" : "0aad99bc-f5f6-4f78-8404-c598d76b0ed2",
    "created_at" : "2019-06-28T02:06:38.000+00:00",
    "updated_at" : "2019-06-28T02:06:38.000+00:00",
    "description" : "test",
    "status" : "NORMAL",
    "status_message" : "",
    "tags" : [ ]
  } ],
  "page_info" : {
    "previous_marker" : "dd18a501-fcd5-4adc-acfe-b0e2384baf08",
    "current_count" : 1
  },
  "request_id" : "e51fa17c-3259-4122-afb1-9c03d4ef5408"
}
```

Status Codes

Status Code	Description
200	Normal response to the GET operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

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5.4.3 Querying an IP Address Group

Function

This API is used to query information about an IP address group, including the IP address group name and IP addresses.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/vpc/address-groups/{address_group_id}

Table 5-88 Path Parameters

Parameter	Mandatory	Type	Description
address_group_id	Yes	String	**Definition**: ID of an IP address group. **Range**: N/A
project_id	Yes	String	**Definition**: ID of the project that an IP address group belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

None

Response Parameters

Status code: 200

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Table 5-89 Response body parameters

Parameter	Type	Description
request_id	String	**Definition**: Request ID. **Range**: N/A
address_group	**AddressGroup** object	**Definition**: Response body for querying details about an IP address group. **Range**: N/A

Table 5-90 AddressGroup

Parameter	Type	Description
id	String	**Definition**: ID of an IP address group. After an IP address group is created, an IP address group ID is generated, which uniquely identifies the IP address group. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: The name of an IP address group. **Range**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Description about an IP address group. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
max_capacity	Integer	**Definition**: Maximum number of IP address entries in an IP address group. **Range**: The value can be from 0 to 20. The default value is 20.
ip_set	Array of strings	**Definition**: IP address entries in an IP address group. Both IPv4 and IPv6 address entries are supported. **Range**: An IP address entry in an IP address set can be: ● A single IP address, for example, 192.168.21.25 ● An IP address range, for example, 192.168.21.25-192.168.21.30 ● A CIDR block, for example, 192.168.21.0/24
ip_version	Integer	**Definition**: IP address version of an IP address group. **Range**: ● **4**: IPv4 address group ● **6**: IPv6 address group
created_at	String	**Definition**: Time when an IP address group was created. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ss*.
updated_at	String	**Definition**: Time when an IP address group was last updated. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ss*.

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Parameter	Type	Description
tenant_id	String	**Definition**: ID of the project that an IP address group belongs to. **Range**: N/A
enterprise_project_id	String	**Definition**: ID of the enterprise project that an IP address group belongs to. **Range**: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.
tags	Array of **ResponseTag** objects	**Definition**: Tags of an IP address group, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
status	String	**Definition**: Status of an IP address group. If the IP address group is in the **UPDATING** state, it cannot be updated again. **Range**: • **NORMAL**: normal (default value) • **UPDATING**: being updated • **UPDATE_FAILED**: update failed
status_message	String	**Definition**: Details about the IP address group status. **Range**: N/A
ip_extra_set	Array of **IpExtraSetRespOption** objects	**Definition**: IP address entries in an IP address group and their remarks. **Range**: N/A

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Table 5-91 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-92 IpExtraSetRespOption

Parameter	Type	Description
ip	String	**Definition**: IP address entries in an IP address group. Both IPv4 and IPv6 address entries are supported. **Range**: • A single IP address, for example, 192.168.21.25 • An IP address range, for example, 192.168.21.25-192.168.21.30 • A CIDR block, for example, 192.168.21.0/24
remarks	String	**Definition**: Remarks of an IP address entry. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

Example Requests

Querying the details of an IP address group

```
GET https://{Endpoint}/v3/2bc7a67b35a64a79ad1d3bb8b5f61fc9/vpc/address-groups/dd18a501-fcd5-4adc-acfe-b0e2384baf08
```

Example Responses

Status code: 200

Normal response to the GET operation. For more status codes, see **Status Codes**.

```
{
  "address_group" : {
    "id" : "dd18a501-fcd5-4adc-acfe-b0e2384baf08",
    "name" : "AutoTester746010.580123789",
    "tenant_id" : "b2782e6708b8475c993e6064bc456bf8",
    "ip_version" : 4,
    "max_capacity" : 20,
    "ip_set" : [ "192.168.5.0/24", "192.168.3.20-192.168.3.100", "192.168.3.40", "192.168.3.2" ],
    "ip_extra_set" : [ {
      "ip" : "192.168.5.0/24",
      "remarks" : null
    }, {
      "ip" : "192.168.3.20-192.168.3.100",
      "remarks" : null
    }, {
      "ip" : "192.168.3.40",
      "remarks" : null
    }, {
      "ip" : "192.168.3.2",
      "remarks" : null
```


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```
  } ],
  "enterprise_project_id" : "0aad99bc-f5f6-4f78-8404-c598d76b0ed2",
  "created_at" : "2019-06-28T02:06:38.000+00:00",
  "updated_at" : "2019-06-28T02:06:38.000+00:00",
  "description" : "10.10.4.0/23",
  "status" : "NORMAL",
  "status_message" : "",
  "tags" : [ ]
 },
 "request_id" : "ce6c359b-9002-41e5-a0b1-232759bd6637"
}
```


Status Codes

Status Code	Description
200	Normal response to the GET operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.4.4 Updating an IP Address Group

Function

This API is used to update information about an IP address group, including the IP address group name and IP addresses.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/vpc/address-groups/{address_group_id}

Table 5-93 Path Parameters

Parameter	Mandatory	Type	Description
address_group_id	Yes	String	**Definition**: ID of an IP address group. **Range**: N/A

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Parameter	Mandatory	Type	Description
project_id	Yes	String	**Definition**: ID of the project that an IP address group belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

Table 5-94 Request body parameters

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • **true**: A check request will be sent and the IP address group will not be updated. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • **false**: A request will be sent and the IP address group will be updated. **Default Value**: **false**

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Parameter	Mandatory	Type	Description
address_group	Yes	UpdateAddressGroupOption object	**Definition**: Request body for updating an IP address group. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

Table 5-95 UpdateAddressGroupOption

Parameter	Mandatory	Type	Description
name	No	String	**Definition**: The name of an IP address group. **Constraints**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods. **Range**: N/A **Default Value**: N/A
description	No	String	**Definition**: Description about an IP address group. **Constraints**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >). **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
ip_set	No	Array of strings	**Definition**: IP address entries in an IP address group. Both IPv4 and IPv6 address entries are supported. **Constraints**: ● The default maximum number of IP address sets, including IP addresses, IP address ranges, and CIDR blocks, in an IP address group is 20. ● **ip_set** and **ip_extra_set** cannot be both specified in a request. **Range**: An IP address entry in an IP address set can be: ● A single IP address, for example, 192.168.21.25 ● An IP address range, for example, 192.168.21.25-192.168.21.30 ● A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A
max_capacity	No	Integer	**Definition**: Maximum number of IP address entries in an IP address group. **Constraints**: N/A **Range**: 0 to 20 **Default Value**: 20

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Parameter	Mandatory	Type	Description
ip_extra_set	No	Array of **IpExtraSetOption** objects	**Definition**: IP address entries in an IP address group and their remarks. **Constraints**: • By default, the maximum number of IP address entries is 20. • **ip_set** and **ip_extra_set** cannot be both specified in a request. **Range**: N/A **Default Value**: N/A

Table 5-96 IpExtraSetOption

Parameter	Mandatory	Type	Description
ip	Yes	String	**Definition**: IP address entries in an IP address group. Both IPv4 and IPv6 address entries are supported. **Constraints**: N/A **Range**: • A single IP address, for example, 192.168.21.25 • An IP address range, for example, 192.168.21.25-192.168.21.30 • A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A

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Parameter	Mandatory	Type	Description
remarks	No	String	**Definition**: Remarks of an IP address entry. **Constraints**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >). **Range**: N/A **Default Value**: N/A

Response Parameters

Status code: 200

Table 5-97 Response body parameters

Parameter	Type	Description
request_id	String	**Definition**: Request ID. **Range**: N/A
address_group	**AddressGroup** object	**Definition**: Response body for updating an IP address group. **Range**: N/A

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Table 5-98 AddressGroup

Parameter	Type	Description
id	String	**Definition**: ID of an IP address group. After an IP address group is created, an IP address group ID is generated, which uniquely identifies the IP address group. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: The name of an IP address group. **Range**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Description about an IP address group. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
max_capacity	Integer	**Definition**: Maximum number of IP address entries in an IP address group. **Range**: The value can be from 0 to 20. The default value is 20.
ip_set	Array of strings	**Definition**: IP address entries in an IP address group. Both IPv4 and IPv6 address entries are supported. **Range**: An IP address entry in an IP address set can be: • A single IP address, for example, 192.168.21.25 • An IP address range, for example, 192.168.21.25-192.168.21.30 • A CIDR block, for example, 192.168.21.0/24

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Parameter	Type	Description
ip_version	Integer	**Definition**: IP address version of an IP address group. **Range**: • **4**: IPv4 address group • **6**: IPv6 address group
created_at	String	**Definition**: Time when an IP address group was created. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ss*.
updated_at	String	**Definition**: Time when an IP address group was last updated. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ss*.
tenant_id	String	**Definition**: ID of the project that an IP address group belongs to. **Range**: N/A
enterprise_project_id	String	**Definition**: ID of the enterprise project that an IP address group belongs to. **Range**: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.
tags	Array of **ResponseTag** objects	**Definition**: Tags of an IP address group, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A

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Parameter	Type	Description
status	String	**Definition**: Status of an IP address group. If the IP address group is in the **UPDATING** state, it cannot be updated again. **Range**: • **NORMAL**: normal (default value) • **UPDATING**: being updated • **UPDATE_FAILED**: update failed
status_message	String	**Definition**: Details about the IP address group status. **Range**: N/A
ip_extra_set	Array of **IpExtraSetRespOption** objects	**Definition**: IP address entries in an IP address group and their remarks. **Range**: N/A

Table 5-99 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Parameter	Type	Description
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

Table 5-100 IpExtraSetRespOption

Parameter	Type	Description
ip	String	**Definition**: IP address entries in an IP address group. Both IPv4 and IPv6 address entries are supported. **Range**: • A single IP address, for example, 192.168.21.25 • An IP address range, for example, 192.168.21.25-192.168.21.30 • A CIDR block, for example, 192.168.21.0/24
remarks	String	**Definition**: Remarks of an IP address entry. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

Example Requests

Change the IP set and description of the IP address group whose ID is **dd18a501-fcd5-4adc-acfe-b0e2384baf08**. Change the IP address group name to **vkvgykvsvhjaaaa1**.

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```
PUT https://{endpoint}/v3/b2782e6708b8475c993e6064bc456bf8/vpc/address-groups/dd18a501-fcd5-4adc-acfe-b0e2384baf08

{
  "address_group" : {
    "name" : "vkvgykvsvhjaaaa1",
    "ip_set" : [ "192.168.3.2", "192.168.3.43", "192.168.3.20-192.168.3.100", "192.168.5.0/24" ],
    "description" : "xxxxxxxxxx"
  }
}
```

Example Responses

Status code: 200

Normal response to the PUT operation. For more status codes, see **Status Codes**.

```
{
  "address_group" : {
    "id" : "dd18a501-fcd5-4adc-acfe-b0e2384baf08",
    "name" : "vkvgykvsvhjaaaa1",
    "tenant_id" : "b2782e6708b8475c993e6064bc456bf8",
    "ip_version" : 4,
    "max_capacity" : 20,
    "ip_set" : [ "192.168.5.0/24", "192.168.3.20-192.168.3.100", "192.168.3.43", "192.168.3.2" ],
    "ip_extra_set" : [ {
      "ip" : "192.168.5.0/24",
      "remarks" : null
    }, {
      "ip" : "192.168.3.20-192.168.3.100",
      "remarks" : null
    }, {
      "ip" : "192.168.3.43",
      "remarks" : null
    }, {
      "ip" : "192.168.3.2",
      "remarks" : null
    } ],
    "enterprise_project_id" : "0aad99bc-f5f6-4f78-8404-c598d76b0ed2",
    "created_at" : "2019-06-28T02:06:38.000+00:00",
    "updated_at" : "2019-06-28T02:14:01.000+00:00",
    "description" : "xxxxxxxxxx",
    "status" : "NORMAL",
    "status_message" : "",
    "tags" : [ ]
  },
  "request_id" : "5bbd1640-fa68-4362-9a5c-30c4809958e0"
}
```

Status Codes

Status Code	Description
200	Normal response to the PUT operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

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5.4.5 Deleting an IP Address Group

Function

This API can be used to delete an IP address group that is no longer used. This API does not forcibly delete an IP address group. Before deleting an IP address group, ensure that no resource is using this group.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/vpc/address-groups/{address_group_id}

Table 5-101 Path Parameters

Parameter	Mandatory	Type	Description
address_group_id	Yes	String	**Definition**: ID of an IP address group. **Range**: N/A
project_id	Yes	String	**Definition**: ID of the project that an IP address group belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

None

Response Parameters

Status code: 204

Normal response to the DELETE operation. For more status codes, see **Status Codes**.

None

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Example Requests

Delete the IP address group whose ID is **dd18a501-fcd5-4adc-acfe-b0e2384baf08**.

```
DELETE https://{{endpoint}}/v3/{{tenant_id}}/vpc/address-groups/dd18a501-fcd5-4adc-acfe-b0e2384baf08
```

Example Responses

None

Status Codes

Status Code	Description
204	Normal response to the DELETE operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.4.6 Forcibly Deleting an IP Address Group

Function

You can call this API to delete an IP address group that is no longer used. This API is used to forcibly delete an IP address group. If the IP address group to be deleted is associated with security group rules or network ACL rules, the IP address group and its associated rules will be deleted together.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/vpc/address-groups/{address_group_id}/force

Table 5-102 Path Parameters

Parameter	Mandatory	Type	Description
address_group_id	Yes	String	**Definition**: ID of an IP address group. **Range**: N/A

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Parameter	Mandatory	Type	Description
project_id	Yes	String	**Definition**: ID of the project that an IP address group belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

None

Response Parameters

Status code: 204

Normal response to the DELETE operation. For more status codes, see **Status Codes**.

None

Example Requests

Forcibly delete the address group whose ID is **dd18a501-fcd5-4adc-acfe-b0e2384baf08**.

```
DELETE https://{{endpoint}}/v3/{{tenant_id}}/vpc/address-groups/dd18a501-fcd5-4adc-acfe-b0e2384baf08/force
```

Example Responses

None

Status Codes

Status Code	Description
204	Normal response to the DELETE operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

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5.5 Supplementary Network Interface

5.5.1 Creating a Supplementary Network Interface

Function

Supplementary network interfaces can be attached to an elastic network interface to allow a cloud server to have more network interfaces for flexible and high-availability network configuration.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/vpc/sub-network-interfaces

Table 5-103 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Definition**: ID of the project that a supplementary network interface belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

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Request Parameters

Table 5-104 Request body parameters

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • **true**: A check request will be sent and no supplementary network interface will be created. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • **false**: A request will be sent and a supplementary network interface will be created. **Default Value**: **false**
sub_network_interface	Yes	**CreateSubNetworkInterfaceOption** object	**Definition**: Request body for creating a supplementary network interface. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Table 5-105 CreateSubNetworkInterfaceOption

Parameter	Mandatory	Type	Description
virsubnet_id	Yes	String	**Definition**: ID of the virtual subnet that a supplementary network interface is located. **Constraints**: The value is in UUID format with hyphens (-). **Range**: N/A **Default Value**: N/A
vlan_id	No	String	**Definition**: VLAN ID of a supplementary network interface. **Constraints**: The VLAN IDs of supplementary network interfaces attached to the same network interface must be unique. **Range**: 1 to 4094 **Default Value**: N/A
parent_id	Yes	String	**Definition**: ID of the elastic network interface that a supplementary network interface is attached to. **Constraints**: The value must be an existing elastic network interface ID. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
description	No	String	**Definition**: Description of a supplementary network interface. **Constraints**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >). **Range**: N/A **Default Value**: N/A
ipv6_enable	No	Boolean	**Definition**: Whether IPv6 is enabled for a supplementary network interface. **Constraints**: N/A **Range**: • **true**: IPv6 is enabled. • **false**: IPv6 is disabled. **Default Value**: **false**
private_ip_address	No	String	**Definition**: Private IPv4 address of a supplementary network interface. **Constraints**: The value must be in the virtual subnet. If this parameter is left blank, an IP address will be randomly assigned from the virtual subnet. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
ipv6_ip_address	No	String	**Definition**: Private IPv6 address of a supplementary network interface. **Constraints**: The value must be in the virtual subnet. If this parameter is left blank, an IP address will be randomly assigned from the virtual subnet. **Range**: N/A **Default Value**: N/A
security_groups	No	Array of strings	**Definition**: IDs of the security groups that a supplementary network interface is associated with. For example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. **Constraints**: If this parameter is not specified in the request, the supplementary network interface is automatically associated with the default security group after being created. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
project_id	No	String	**Definition**: ID of the project that a supplementary network interface belongs to. **Constraints**: This parameter can only be set to the tenant ID of the current tenant. If this parameter is not specified, the project ID of the current tenant is used by default. **Range**: N/A **Default Value**: N/A
allowed_address_pairs	No	Array of **AllowedAddressPair** objects	**Definition**: IP/MAC address pair list of a supplementary network interface. For details, see the **AllowedAddressPair** object list. **Constraints**: • Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. • In the hardware SDN networking plan, the **ip_address** attribute value cannot be in CIDR format. **Range**: N/A **Default Value**: N/A

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Table 5-106 AllowedAddressPair

Parameter	Mandatory	Type	Description
ip_address	No	String	**Definition**: IP address. **Constraints**: Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. **Range**: Single IP address, for example, 192.168.21.25 A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A
mac_address	No	String	**Definition**: MAC address. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

Response Parameters

Status code: 201

Table 5-107 Response body parameters

Parameter	Type	Description
request_id	String	**Definition**: Request ID. **Range**: N/A

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Parameter	Type	Description
sub_network_interface	SubNetworkInterface object	**Definition**: Response body for creating a supplementary network interface. **Range**: N/A

Table 5-108 SubNetworkInterface

Parameter	Type	Description
id	String	**Definition**: ID of a supplementary network interface. After a supplementary network interface is created, a supplementary network interface ID is generated, which uniquely identifies the supplementary network interface. **Range**: The value is in UUID format with hyphens (-).
virsubnet_id	String	**Definition**: ID of the virtual subnet that a supplementary network interface is located. **Range**: The value is in UUID format with hyphens (-).
private_ip_address	String	**Definition**: Private IPv4 address of a supplementary network interface. **Range**: N/A
ipv6_ip_address	String	**Definition**: Private IPv6 address of a supplementary network interface. **Range**: N/A

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Parameter	Type	Description
mac_address	String	**Definition**: MAC address of a supplementary network interface. **Range**: The value is a valid MAC address assigned by the system randomly.
parent_device_id	String	**Definition**: Device ID of the host network interface that a supplementary network interface is attached to. **Range**: The value is in UUID format with hyphens (-).
parent_id	String	**Definition**: ID of the elastic network interface that a supplementary network interface is attached to. **Range**: The value is in UUID format with hyphens (-).
description	String	**Definition**: Description of a supplementary network interface. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
vpc_id	String	**Definition**: ID of the VPC that a supplementary network interface belongs to. **Range**: The value is in UUID format with hyphens (-).
vlan_id	Integer	**Definition**: VLAN ID of a supplementary network interface. **Range**: 1 to 4094

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Parameter	Type	Description
security_groups	Array of strings	**Definition**: IDs of the security groups that a supplementary network interface is associated with. For example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. **Range**: If this parameter is not specified in the request, the supplementary network interface is automatically associated with the default security group after being created.
tags	Array of **ResponseTag** objects	**Definition**: Tags of a supplementary network interface, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
project_id	String	**Definition**: ID of the project that a supplementary network interface belongs to. **Range**: N/A
created_at	String	**Definition**: Time when a supplementary network interface was created. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
allowed_address_pairs	Array of **AllowedAddressPair** objects	**Definition**: IP/MAC address pair list of a supplementary network interface. For details, see the **AllowedAddressPair** object list. **Range**: N/A

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Parameter	Type	Description
state	String	**Definition**: Status of a supplementary network interface. **Range**: • **NORMAL**: The supplementary network interface is attached to an elastic network interface. • **UNBOUND**: The supplementary network interface is not attached to an elastic network interface.
instance_id	String	**Definition**: ID of the cloud service instance that a supplementary network interface is attached to, for example, RDS instance ID. **Range**: N/A
instance_type	String	**Definition**: Type of the cloud service instance that a supplementary network interface is attached to, for example, RDS. **Range**: N/A
scope	String	**Definition**: Public network egress information of the site where a supplementary network interface works. **Range**: • **center**: default value, indicating the central AZ. • *AZ ID*: a specific AZ
security_enabled	Boolean	**Definition**: Whether the security option is enabled for a supplementary network interface. If the option is not enabled, the security group does not take effect. **Range**: N/A

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Table 5-109 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-110 AllowedAddressPair

Parameter	Type	Description
ip_address	String	**Definition**: IP address. **Constraints**: Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. **Range**: Single IP address, for example, 192.168.21.25 A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A
mac_address	String	**Definition**: MAC address. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

Example Requests

Create a supplementary network interface. Set its virtual subnet ID to 08278e6c-61ca-46c1-9fc3-0d4f6c12f193, elastic network interface ID to 637748df-2986-4350-8303-95d259580fb3, and associated security group to 6727c950-9f01-47a2-a7aa-7d3686c4c95b.

```
POST https://{Endpoint}/v3/8c6fb137a48a428aaf9a0229dca4edb3/vpc/sub-network-interfaces

{
  "sub_network_interface" : {
    "virsubnet_id" : "08278e6c-61ca-46c1-9fc3-0d4f6c12f193",
    "parent_id" : "637748df-2986-4350-8303-95d259580fb3",
    "security_groups" : [ "6727c950-9f01-47a2-a7aa-7d3686c4c95b" ]
  }
}
```

Example Responses

Status code: 201

Normal response to the POST operation. For more status codes, see **Status Codes**.

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```
{
  "sub_network_interface" : {
    "id" : "1f5fca65-6a75-47c8-942b-db1bbb81a22a",
    "project_id" : "8c6fb137a48a428aaf9a0229dca4edb3",
    "virsubnet_id" : "08278e6c-61ca-46c1-9fc3-0d4f6c12f193",
    "private_ip_address" : "192.168.0.219",
    "ipv6_ip_address" : "2407:c080:1200:2038:53a4:ad1c:ef34:f4ef",
    "mac_address" : "fa:16:3e:26:7e:59",
    "parent_device_id" : "285b2e45-2968-4f4c-8992-54e0d4c8da1d",
    "security_enabled" : true,
    "security_groups" : [ "6727c950-9f01-47a2-a7aa-7d3686c4c95b" ],
    "allowed_address_pairs" : [ ],
    "vpc_id" : "c10e1e02-9db2-4bd0-89ef-52536952627e",
    "instance_id" : "",
    "instance_type" : "",
    "description" : "",
    "parent_id" : "637748df-2986-4350-8303-95d259580fb3",
    "vlan_id" : 551,
    "state" : "NORMAL",
    "tags" : [ ],
    "scope" : "center",
    "created_at" : "2025-02-10T08:17:16Z"
  },
  "request_id" : "f0893730b622bf32beea6fa5b387a5dc"
}
```


Status Codes

Status Code	Description
201	Normal response to the POST operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.5.2 Creating Supplementary Network Interfaces in Batches

Function

A supplementary network interface is a derivative resource based on an elastic network interface. You can use this API to create supplementary network interfaces in batches.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/vpc/sub-network-interfaces/batch-create

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Table 5-111 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Definition**: ID of the project that a supplementary network interface belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

Table 5-112 Request body parameters

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • **true**: A check request will be sent and no supplementary network interface will be created. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • **false**: A request will be sent and a supplementary network interface will be created. **Default Value**: **false**

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Parameter	Mandatory	Type	Description
sub_network_interface	Yes	BatchCreateSubNetworkInterfaceOption object	**Definition**: Request body for creating a supplementary network interface. **Constraints**: N/A **Range**: N/A **Default Value**: N/A
count	Yes	Integer	**Definition**: Number of supplementary network interfaces to be created in batches. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

Table 5-113 BatchCreateSubNetworkInterfaceOption

Parameter	Mandatory	Type	Description
virsubnet_id	Yes	String	**Definition**: ID of the virtual subnet that a supplementary network interface is located. **Constraints**: The value is in UUID format with hyphens (-). **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
parent_id	Yes	String	**Definition**: ID of the elastic network interface that a supplementary network interface is attached to. **Constraints**: The value must be an existing elastic network interface ID. **Range**: N/A **Default Value**: N/A
security_groups	No	Array of strings	**Definition**: IDs of the security groups that a supplementary network interface is associated with. For example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. **Constraints**: If this parameter is not specified in the request, the supplementary network interface is automatically associated with the default security group after being created. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
description	No	String	**Definition**: Description of a supplementary network interface. **Constraints**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >). **Range**: N/A **Default Value**: N/A
ipv6_enable	No	Boolean	**Definition**: Whether IPv6 is enabled for a supplementary network interface. **Constraints**: N/A **Range**: • **true**: IPv6 is enabled. • **false**: IPv6 is disabled. **Default Value**: **false**
project_id	No	String	**Definition**: ID of the project that a supplementary network interface belongs to. **Constraints**: This parameter can only be set to the tenant ID of the current tenant. If this parameter is not specified, the project ID of the current tenant is used by default. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
allowed_address_pairs	No	Array of **AllowedAddressPair** objects	**Definition**: IP/MAC address pair list of a supplementary network interface. For details, see the **AllowedAddressPair** object list. **Constraints**: • Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. • In the hardware SDN networking plan, the **ip_address** attribute value cannot be in CIDR format. **Range**: N/A **Default Value**: N/A

Table 5-114 AllowedAddressPair

Parameter	Mandatory	Type	Description
ip_address	No	String	**Definition**: IP address. **Constraints**: Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. **Range**: Single IP address, for example, 192.168.21.25 A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A

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Parameter	Mandatory	Type	Description
mac_address	No	String	**Definition**: MAC address. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

Response Parameters

Status code: 201

Table 5-115 Response body parameters

Parameter	Type	Description
request_id	String	**Definition**: Request ID. **Range**: N/A
sub_network_interfaces	Array of **SubNetworkInterface** objects	**Definition**: Response body for creating supplementary network interfaces in batches. **Range**: N/A

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Table 5-116 SubNetworkInterface

Parameter	Type	Description
id	String	**Definition**: ID of a supplementary network interface. After a supplementary network interface is created, a supplementary network interface ID is generated, which uniquely identifies the supplementary network interface. **Range**: The value is in UUID format with hyphens (-).
virsubnet_id	String	**Definition**: ID of the virtual subnet that a supplementary network interface is located. **Range**: The value is in UUID format with hyphens (-).
private_ip_address	String	**Definition**: Private IPv4 address of a supplementary network interface. **Range**: N/A
ipv6_ip_address	String	**Definition**: Private IPv6 address of a supplementary network interface. **Range**: N/A
mac_address	String	**Definition**: MAC address of a supplementary network interface. **Range**: The value is a valid MAC address assigned by the system randomly.
parent_device_id	String	**Definition**: Device ID of the host network interface that a supplementary network interface is attached to. **Range**: The value is in UUID format with hyphens (-).

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Parameter	Type	Description
parent_id	String	**Definition**: ID of the elastic network interface that a supplementary network interface is attached to. **Range**: The value is in UUID format with hyphens (-).
description	String	**Definition**: Description of a supplementary network interface. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
vpc_id	String	**Definition**: ID of the VPC that a supplementary network interface belongs to. **Range**: The value is in UUID format with hyphens (-).
vlan_id	Integer	**Definition**: VLAN ID of a supplementary network interface. **Range**: 1 to 4094
security_groups	Array of strings	**Definition**: IDs of the security groups that a supplementary network interface is associated with. For example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. **Range**: If this parameter is not specified in the request, the supplementary network interface is automatically associated with the default security group after being created.

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Parameter	Type	Description
tags	Array of **ResponseTag** objects	**Definition**: Tags of a supplementary network interface, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
project_id	String	**Definition**: ID of the project that a supplementary network interface belongs to. **Range**: N/A
created_at	String	**Definition**: Time when a supplementary network interface was created. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
allowed_address_pairs	Array of **AllowedAddressPair** objects	**Definition**: IP/MAC address pair list of a supplementary network interface. For details, see the **AllowedAddressPair** object list. **Range**: N/A
state	String	**Definition**: Status of a supplementary network interface. **Range**: • **NORMAL**: The supplementary network interface is attached to an elastic network interface. • **UNBOUND**: The supplementary network interface is not attached to an elastic network interface.

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Parameter	Type	Description
instance_id	String	**Definition**: ID of the cloud service instance that a supplementary network interface is attached to, for example, RDS instance ID. **Range**: N/A
instance_type	String	**Definition**: Type of the cloud service instance that a supplementary network interface is attached to, for example, RDS. **Range**: N/A
scope	String	**Definition**: Public network egress information of the site where a supplementary network interface works. **Range**: ● **center**: default value, indicating the central AZ. ● *AZ ID*: a specific AZ
security_enabled	Boolean	**Definition**: Whether the security option is enabled for a supplementary network interface. If the option is not enabled, the security group does not take effect. **Range**: N/A

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Table 5-117 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-118 AllowedAddressPair

Parameter	Type	Description
ip_address	String	**Definition**: IP address. **Constraints**: Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. **Range**: Single IP address, for example, 192.168.21.25 A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A
mac_address	String	**Definition**: MAC address. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

Example Requests

Create two supplementary network interfaces in batches. Set the virtual subnet ID to 115b5a84-31dc-4b1e-8de9-bf5a75d2c566, elastic network interface ID to 8b6c46f1-c68d-4bba-a922-2d97da185af5, and associated security group to 6727c950-9f01-47a2-a7aa-7d3686c4c95b.

```
POST https://{Endpoint}/v3/8c6fb137a48a428aaf9a0229dca4edb3/vpc/sub-network-interfaces/batch-create

{
  "sub_network_interface" : {
    "virsubnet_id" : "115b5a84-31dc-4b1e-8de9-bf5a75d2c566",
    "security_groups" : [ "6727c950-9f01-47a2-a7aa-7d3686c4c95b" ],
    "parent_id" : "8b6c46f1-c68d-4bba-a922-2d97da185af5"
  },
  "count" : 2
}
```

Example Responses

Status code: 201

Normal response to the POST operation. For more status codes, see **Status Codes**.

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```
{
  "sub_network_interfaces" : [ {
    "id" : "4c2b455a-4c75-4c4d-bada-727be4d0f7b5",
    "project_id" : "8c6fb137a48a428aaf9a0229dca4edb3",
    "virsubnet_id" : "115b5a84-31dc-4b1e-8de9-bf5a75d2c566",
    "private_ip_address" : "192.168.0.160",
    "ipv6_ip_address" : null,
    "mac_address" : "fa:16:3e:26:7e:1e",
    "parent_device_id" : "285b2e45-2968-4f4c-8992-54e0d4c8da1d",
    "security_enabled" : true,
    "security_groups" : [ "6727c950-9f01-47a2-a7aa-7d3686c4c95b" ],
    "allowed_address_pairs" : [ ],
    "vpc_id" : "c10e1e02-9db2-4bd0-89ef-52536952627e",
    "instance_id" : "",
    "instance_type" : "",
    "description" : "",
    "parent_id" : "8b6c46f1-c68d-4bba-a922-2d97da185af5",
    "vlan_id" : 3413,
    "state" : "NORMAL",
    "tags" : [ ],
    "scope" : "center",
    "created_at" : "2025-02-10T08:21:16Z"
  }, {
    "id" : "a9ecbff0-d24f-493d-b62c-ee9b916db23a",
    "project_id" : "8c6fb137a48a428aaf9a0229dca4edb3",
    "virsubnet_id" : "115b5a84-31dc-4b1e-8de9-bf5a75d2c566",
    "private_ip_address" : "192.168.0.20",
    "ipv6_ip_address" : null,
    "mac_address" : "fa:16:3e:26:7e:92",
    "parent_device_id" : "285b2e45-2968-4f4c-8992-54e0d4c8da1d",
    "security_enabled" : true,
    "security_groups" : [ "6727c950-9f01-47a2-a7aa-7d3686c4c95b" ],
    "allowed_address_pairs" : [ ],
    "vpc_id" : "c10e1e02-9db2-4bd0-89ef-52536952627e",
    "instance_id" : "",
    "instance_type" : "",
    "description" : "",
    "parent_id" : "8b6c46f1-c68d-4bba-a922-2d97da185af5",
    "vlan_id" : 595,
    "state" : "NORMAL",
    "tags" : [ ],
    "scope" : "center",
    "created_at" : "2025-02-10T08:21:16Z"
  } ],
  "request_id" : "3f8a9620bea08c3e6ce0d4004d71f0c8"
}
```


Status Codes

Status Code	Description
201	Normal response to the POST operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

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5.5.3 Querying Supplementary Network Interfaces

Function

This API is used to query information about all supplementary network interfaces, including their IP addresses and VLAN IDs.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/vpc/sub-network-interfaces

Table 5-119 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Definition**: ID of the project that the supplementary network interface belongs to. You can use this field to filter supplementary network interfaces. Multiple project IDs can be specified for filtering. **Range**: N/A

Table 5-120 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	**Definition**: Number of resources on each page. **Range**: 0 to 2000
marker	No	String	**Definition**: Start resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried. **Range**: ID of a supplementary network interface.

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Parameter	Mandatory	Type	Description
id	No	Array of strings	**Definition**: Supplementary network interface ID. You can use this field to filter supplementary network interfaces. Multiple IDs can be specified for filtering. **Range**: N/A
description	No	Array of strings	**Definition**: Description of a supplementary network interface. You can use this field to filter supplementary network interfaces. Multiple descriptions can be specified for filtering. **Range**: N/A
vpc_id	No	Array of strings	**Definition**: ID of the VPC that a supplementary network interface belongs to. You can use this field to filter supplementary network interfaces in one or more VPCs. Multiple VPC IDs can be specified for filtering. **Range**: N/A
virsubnet_id	No	Array of strings	**Definition**: ID of the virtual subnet that a supplementary network interface belongs to. You can use this field to filter supplementary network interfaces in one or more virtual subnets. Multiple virtual subnet IDs can be specified for filtering. **Range**: N/A

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Parameter	Mandatory	Type	Description
parent_id	No	Array of strings	**Definition**: ID of the elastic network interface that a supplementary network interface is attached to. You can use this field to filter supplementary network interfaces attached to one or more elastic network interfaces. Multiple elastic network interface IDs can be specified for filtering. **Range**: N/A
private_ip_address	No	Array of strings	**Definition**: Private IPv4 address of a supplementary network interface. You can use this field to filter supplementary network interfaces. Multiple IP addresses can be specified for filtering. **Range**: N/A
mac_address	No	Array of strings	**Definition**: MAC address of a supplementary network interface. You can use this field to filter supplementary network interfaces. Multiple MAC addresses can be specified for filtering. **Range**: N/A
enable_eip	No	Boolean	**Definition**: Whether to filter a supplementary network interface with an EIP bound. You can use this field to filter supplementary network interfaces. Only one value can be specified for filtering. **Range**: **true** and **false**

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Parameter	Mandatory	Type	Description
scope	No	String	**Definition**: Public network egress information of the site where a supplementary network interface works. You can use this field to filter supplementary network interfaces. **Range**: N/A
security_groups	No	Array of strings	**Definition**: ID of the security group that a supplementary network interface is associated with. You can use this field to filter supplementary network interfaces. Multiple IDs can be specified for filtering. **Range**: N/A
parent_device_id	No	Array of strings	**Definition**: Device ID of the host network interface that a supplementary network interface is attached to. You can use this field to filter supplementary network interfaces. Multiple IDs can be specified for filtering. **Range**: N/A
vlan_id	No	Array of integers	**Definition**: VLAN ID of a supplementary network interface. You can use this field to filter supplementary network interfaces. Multiple VLAN IDs can be specified for filtering. **Range**: 1 to 4094

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Parameter	Mandatory	Type	Description
state	No	Array of strings	**Definition**: Status of a supplementary network interface. You can use this field to filter supplementary network interfaces. Multiple statuses can be specified for filtering. **Range**: **NORMAL** and **UNBOUND**
ipv6_ip_address	No	Array of strings	**Definition**: IPv6 address of a supplementary network interface. You can use this field to filter supplementary network interfaces. Multiple IP addresses can be specified for filtering. **Range**: N/A
instance_id	No	Array of strings	**Definition**: ID of the cloud service instance that a supplementary network interface is attached to, for example, RDS instance ID. You can use this field to filter supplementary network interfaces. Multiple IDs can be specified for filtering. **Range**: N/A
instance_type	No	Array of strings	**Definition**: Type of the cloud service instance that a supplementary network interface is attached to, for example, RDS. You can use this field to filter supplementary network interfaces. Multiple instance types can be specified for filtering. **Range**: N/A

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Request Parameters

None

Response Parameters

Status code: 200

Table 5-121 Response body parameters

Parameter	Type	Description
request_id	String	**Definition**: Request ID. **Range**: N/A
sub_network_interfaces	Array of **SubNetworkInterface** objects	**Definition**: Response body for querying supplementary network interfaces. **Range**: N/A
page_info	**PageInfo** object	**Definition**: Pagination information. **Range**: N/A

Table 5-122 SubNetworkInterface

Parameter	Type	Description
id	String	**Definition**: ID of a supplementary network interface. After a supplementary network interface is created, a supplementary network interface ID is generated, which uniquely identifies the supplementary network interface. **Range**: The value is in UUID format with hyphens (-).

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Parameter	Type	Description
virsubnet_id	String	**Definition**: ID of the virtual subnet that a supplementary network interface is located. **Range**: The value is in UUID format with hyphens (-).
private_ip_address	String	**Definition**: Private IPv4 address of a supplementary network interface. **Range**: N/A
ipv6_ip_address	String	**Definition**: Private IPv6 address of a supplementary network interface. **Range**: N/A
mac_address	String	**Definition**: MAC address of a supplementary network interface. **Range**: The value is a valid MAC address assigned by the system randomly.
parent_device_id	String	**Definition**: Device ID of the host network interface that a supplementary network interface is attached to. **Range**: The value is in UUID format with hyphens (-).
parent_id	String	**Definition**: ID of the elastic network interface that a supplementary network interface is attached to. **Range**: The value is in UUID format with hyphens (-).

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Parameter	Type	Description
description	String	**Definition**: Description of a supplementary network interface. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
vpc_id	String	**Definition**: ID of the VPC that a supplementary network interface belongs to. **Range**: The value is in UUID format with hyphens (-).
vlan_id	Integer	**Definition**: VLAN ID of a supplementary network interface. **Range**: 1 to 4094
security_groups	Array of strings	**Definition**: IDs of the security groups that a supplementary network interface is associated with. For example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. **Range**: If this parameter is not specified in the request, the supplementary network interface is automatically associated with the default security group after being created.
tags	Array of **ResponseTag** objects	**Definition**: Tags of a supplementary network interface, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A

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Parameter	Type	Description
project_id	String	**Definition**: ID of the project that a supplementary network interface belongs to. **Range**: N/A
created_at	String	**Definition**: Time when a supplementary network interface was created. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
allowed_address_pairs	Array of **AllowedAddressPair** objects	**Definition**: IP/MAC address pair list of a supplementary network interface. For details, see the **AllowedAddressPair** object list. **Range**: N/A
state	String	**Definition**: Status of a supplementary network interface. **Range**: • **NORMAL**: The supplementary network interface is attached to an elastic network interface. • **UNBOUND**: The supplementary network interface is not attached to an elastic network interface.
instance_id	String	**Definition**: ID of the cloud service instance that a supplementary network interface is attached to, for example, RDS instance ID. **Range**: N/A
instance_type	String	**Definition**: Type of the cloud service instance that a supplementary network interface is attached to, for example, RDS. **Range**: N/A

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Parameter	Type	Description
scope	String	**Definition**: Public network egress information of the site where a supplementary network interface works. **Range**: • **center**: default value, indicating the central AZ. • *AZ ID*: a specific AZ
security_enabled	Boolean	**Definition**: Whether the security option is enabled for a supplementary network interface. If the option is not enabled, the security group does not take effect. **Range**: N/A

Table 5-123 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Parameter	Type	Description
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

Table 5-124 AllowedAddressPair

Parameter	Type	Description
ip_address	String	**Definition**: IP address. **Constraints**: Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. **Range**: Single IP address, for example, 192.168.21.25 A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A
mac_address	String	**Definition**: MAC address. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Table 5-125 PageInfo

Parameter	Type	Description
previous_marker	String	**Definition**: The first record on the current page. **Range**: N/A
current_count	Integer	**Definition**: Total number of resources on the current page. **Range**: N/A
next_marker	String	**Definition**: The last record on the current page. The **next_marker** field does not exist if the page is the last one. **Range**: N/A

Example Requests

- Querying supplementary network interfaces by its ID

  ```
  GET https://{Endpoint}/v3/8c6fb137a48a428aaf9a0229dca4edb3/vpc/sub-network-interfaces?id=022b5c53-20e1-4f4b-b90c-0575a5e97412&id=056d6cb4-b436-460d-9a63-67666bf3ea9c
  ```

- Querying supplementary network interfaces by combined filters

  ```
  https://{Endpoint}/v3/8c6fb137a48a428aaf9a0229dca4edb3/vpc/sub-network-interfaces?virsubnet_id=3eae2c96-de45-4c41-bf2d-e4ad53a2acb4&private_ip_address=192.168.22.177&parent_id=5eb9dc59-8159-4197-88ea-f3507ad8e0a7
  ```

- Querying supplementary network interfaces by page

  ```
  GET https://{Endpoint}/v3/8c6fb137a48a428aaf9a0229dca4edb3/vpc/sub-network-interfaces?limit=2
  ```

Example Responses

Status code: 200

Normal response to the GET operation. For more status codes, see **Status Codes**.

```
{
  "request_id" : "db2bd86cad7519610d9d405228e63076",
  "sub_network_interfaces" : [ {
    "id" : "022b5c53-20e1-4f4b-b90c-0575a5e97412",
    "project_id" : "8c6fb137a48a428aaf9a0229dca4edb3",
    "virsubnet_id" : "3c15c3b0-0df4-4115-9c18-e67a8a0d7702",
    "private_ip_address" : "192.168.0.160",
    "ipv6_ip_address" : null,
    "mac_address" : "fa:16:3e:26:7e:1e",
    "parent_device_id" : "285b2e45-2968-4f4c-8992-54e0d4c8da1d",
    "security_enabled" : false,
    "security_groups" : [ ],
    "allowed_address_pairs" : [ ],
```


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```
    "vpc_id" : "c10e1e02-9db2-4bd0-89ef-52536952627e",
    "instance_id" : "",
    "instance_type" : "",
    "description" : "",
    "parent_id" : "00336617-4552-48c5-9856-f539f4e9aca2",
    "vlan_id" : 3413,
    "state" : null,
    "tags" : [ ],
    "scope" : "center",
    "created_at" : "2025-02-10T08:21:16Z"
  }, {
    "id" : "056d6cb4-b436-460d-9a63-67666bf3ea9c",
    "project_id" : "8c6fb137a48a428aaf9a0229dca4edb3",
    "virsubnet_id" : "3c15c3b0-0df4-4115-9c18-e67a8a0d7702",
    "private_ip_address" : "192.168.0.20",
    "ipv6_ip_address" : null,
    "mac_address" : "fa:16:3e:26:7e:92",
    "parent_device_id" : "285b2e45-2968-4f4c-8992-54e0d4c8da1d",
    "security_enabled" : false,
    "security_groups" : [ ],
    "allowed_address_pairs" : [ ],
    "vpc_id" : "c10e1e02-9db2-4bd0-89ef-52536952627e",
    "instance_id" : "",
    "instance_type" : "",
    "description" : "",
    "parent_id" : "00336617-4552-48c5-9856-f539f4e9aca2",
    "vlan_id" : 595,
    "state" : null,
    "tags" : [ ],
    "scope" : "center",
    "created_at" : "2025-02-10T08:21:16Z"
  } ],
  "page_info" : {
    "previous_marker" : "4c2b455a-4c75-4c4d-bada-727be4d0f7b5",
    "current_count" : 2
  }
}
```


Status Codes

Status Code	Description
200	Normal response to the GET operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.5.4 Querying the Details of a Supplementary Network Interface

Function

This API is used to query information about a supplementary network interface, including the IP address and VLAN ID.

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Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/vpc/sub-network-interfaces/{sub_network_interface_id}

Table 5-126 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Definition**: ID of the project that a supplementary network interface belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A
sub_network_interface_id	Yes	String	**Definition**: ID of a supplementary network interface. **Range**: N/A

Request Parameters

None

Response Parameters

Status code: 200

Table 5-127 Response body parameters

Parameter	Type	Description
request_id	String	**Definition**: Request ID. **Range**: N/A

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Parameter	Type	Description
sub_network_interface	SubNetworkInterface object	**Definition**: Response body for querying details about a supplementary network interface. **Range**: N/A

Table 5-128 SubNetworkInterface

Parameter	Type	Description
id	String	**Definition**: ID of a supplementary network interface. After a supplementary network interface is created, a supplementary network interface ID is generated, which uniquely identifies the supplementary network interface. **Range**: The value is in UUID format with hyphens (-).
virsubnet_id	String	**Definition**: ID of the virtual subnet that a supplementary network interface is located. **Range**: The value is in UUID format with hyphens (-).
private_ip_address	String	**Definition**: Private IPv4 address of a supplementary network interface. **Range**: N/A
ipv6_ip_address	String	**Definition**: Private IPv6 address of a supplementary network interface. **Range**: N/A

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Parameter	Type	Description
mac_address	String	**Definition**: MAC address of a supplementary network interface. **Range**: The value is a valid MAC address assigned by the system randomly.
parent_device_id	String	**Definition**: Device ID of the host network interface that a supplementary network interface is attached to. **Range**: The value is in UUID format with hyphens (-).
parent_id	String	**Definition**: ID of the elastic network interface that a supplementary network interface is attached to. **Range**: The value is in UUID format with hyphens (-).
description	String	**Definition**: Description of a supplementary network interface. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
vpc_id	String	**Definition**: ID of the VPC that a supplementary network interface belongs to. **Range**: The value is in UUID format with hyphens (-).
vlan_id	Integer	**Definition**: VLAN ID of a supplementary network interface. **Range**: 1 to 4094

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Parameter	Type	Description
security_groups	Array of strings	**Definition**: IDs of the security groups that a supplementary network interface is associated with. For example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. **Range**: If this parameter is not specified in the request, the supplementary network interface is automatically associated with the default security group after being created.
tags	Array of **ResponseTag** objects	**Definition**: Tags of a supplementary network interface, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
project_id	String	**Definition**: ID of the project that a supplementary network interface belongs to. **Range**: N/A
created_at	String	**Definition**: Time when a supplementary network interface was created. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
allowed_address_pairs	Array of **AllowedAddressPair** objects	**Definition**: IP/MAC address pair list of a supplementary network interface. For details, see the **AllowedAddressPair** object list. **Range**: N/A

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Parameter	Type	Description
state	String	**Definition**: Status of a supplementary network interface. **Range**: • **NORMAL**: The supplementary network interface is attached to an elastic network interface. • **UNBOUND**: The supplementary network interface is not attached to an elastic network interface.
instance_id	String	**Definition**: ID of the cloud service instance that a supplementary network interface is attached to, for example, RDS instance ID. **Range**: N/A
instance_type	String	**Definition**: Type of the cloud service instance that a supplementary network interface is attached to, for example, RDS. **Range**: N/A
scope	String	**Definition**: Public network egress information of the site where a supplementary network interface works. **Range**: • **center**: default value, indicating the central AZ. • *AZ ID*: a specific AZ
security_enabled	Boolean	**Definition**: Whether the security option is enabled for a supplementary network interface. If the option is not enabled, the security group does not take effect. **Range**: N/A

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Table 5-129 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-130 AllowedAddressPair

Parameter	Type	Description
ip_address	String	**Definition**: IP address. **Constraints**: Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. **Range**: Single IP address, for example, 192.168.21.25 A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A
mac_address	String	**Definition**: MAC address. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

Example Requests

Query the details of the supplementary network interfaces whose ID is **2be868f2-f7c9-48db-abc0-eea0b9105b0**.

```
GET https://{Endpoint}/v3/8c6fb137a48a428aaf9a0229dca4edb3/vpc/sub-network-interfaces/2be868f2-f7c9-48db-abc0-eea0b9105b0d
```

Example Responses

Status code: 200

Normal response to the GET operation. For more status codes, see **Status Codes**.

```
{
  "sub_network_interface" : {
    "id" : "2be868f2-f7c9-48db-abc0-eea0b9105b0d",
    "project_id" : "8c6fb137a48a428aaf9a0229dca4edb3",
    "virsubnet_id" : "3c15c3b0-0df4-4115-9c18-e67a8a0d7702",
    "private_ip_address" : "192.168.0.160",
    "ipv6_ip_address" : null,
    "mac_address" : "fa:16:3e:26:7e:1e",
    "parent_device_id" : "285b2e45-2968-4f4c-8992-54e0d4c8da1d",
```


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```
    "security_enabled" : false,
    "security_groups" : [ ],
    "allowed_address_pairs" : [ ],
    "vpc_id" : "c10e1e02-9db2-4bd0-89ef-52536952627e",
    "instance_id" : "",
    "instance_type" : "",
    "description" : "",
    "parent_id" : "00336617-4552-48c5-9856-f539f4e9aca2",
    "vlan_id" : 3413,
    "state" : null,
    "tags" : [ ],
    "scope" : "center",
    "created_at" : "2025-02-10T08:21:16Z"
  },
  "request_id" : "16fe2bcb91bd7ad03a895adbc63bf44e"
}
```


Status Codes

Status Code	Description
200	Normal response to the GET operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.5.5 Querying the Number of Supplementary Network Interfaces

Function

This API is used to query the number of supplementary network interfaces of a tenant.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/vpc/sub-network-interfaces/count

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Table 5-131 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Definition**: ID of the project that a supplementary network interface belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

None

Response Parameters

Status code: 200

Table 5-132 Response body parameters

Parameter	Type	Description
request_id	String	**Definition**: Request ID. **Range**: N/A
sub_network_interfaces	Integer	**Definition**: Number of supplementary network interfaces. **Range**: N/A

Example Requests

Querying the number of supplementary network interfaces

```
GET https://{Endpoint}/v3/8c6fb137a48a428aaf9a0229dca4edb3/vpc/sub-network-interfaces/count
```

Example Responses

Status code: 200

Normal response to the GET operation. For more status codes, see **Status Codes**.

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```
{
  "sub_network_interfaces" : 2,
  "request_id" : "4a79f1f7-67eb-43be-a8be-eb57ba894f90"
}
```

Status Codes

Status Code	Description
200	Normal response to the GET operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.5.6 Updating a Supplementary Network Interface

Function

This API is used to update the basic information about a supplementary network interface, such as the associated security group and description.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/vpc/sub-network-interfaces/{sub_network_interface_id}

Table 5-133 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Definition**: ID of the project that a supplementary network interface belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

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Parameter	Mandatory	Type	Description
sub_network_interface_id	Yes	String	**Definition**: ID of a supplementary network interface. **Range**: N/A

Request Parameters

Table 5-134 Request body parameters

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • **true**: A check request will be sent and the supplementary network interface will not be updated. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • **false**: A request will be sent and the supplementary network interface will be updated. **Default Value**: **false**

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Parameter	Mandatory	Type	Description
sub_network_interface	Yes	**UpdateSubNetworkInterfaceOption** object	**Definition**: Request body for updating a supplementary network interface. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

Table 5-135 UpdateSubNetworkInterfaceOption

Parameter	Mandatory	Type	Description
description	No	String	**Definition**: Description of a supplementary network interface. **Constraints**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >). **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
security_groups	No	Array of strings	**Definition**: IDs of the security groups that a supplementary network interface is associated with. For example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. **Constraints**: N/A **Range**: N/A **Default Value**: N/A
allowed_address_pairs	No	Array of **AllowedAddressPair** objects	**Definition**: IP/MAC address pair list of a supplementary network interface. For details, see the **AllowedAddressPair** object list. **Constraints**: • Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. • In the hardware SDN networking plan, the **ip_address** attribute value cannot be in CIDR format. **Range**: N/A **Default Value**: N/A

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Table 5-136 AllowedAddressPair

Parameter	Mandatory	Type	Description
ip_address	No	String	**Definition**: IP address. **Constraints**: Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. **Range**: Single IP address, for example, 192.168.21.25 A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A
mac_address	No	String	**Definition**: MAC address. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

Response Parameters

Status code: 200

Table 5-137 Response body parameters

Parameter	Type	Description
request_id	String	**Definition**: Request ID. **Range**: N/A

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Parameter	Type	Description
sub_network_interface	SubNetworkInterface object	**Definition**: Response body for updating a supplementary network interface. **Range**: N/A

Table 5-138 SubNetworkInterface

Parameter	Type	Description
id	String	**Definition**: ID of a supplementary network interface. After a supplementary network interface is created, a supplementary network interface ID is generated, which uniquely identifies the supplementary network interface. **Range**: The value is in UUID format with hyphens (-).
virsubnet_id	String	**Definition**: ID of the virtual subnet that a supplementary network interface is located. **Range**: The value is in UUID format with hyphens (-).
private_ip_address	String	**Definition**: Private IPv4 address of a supplementary network interface. **Range**: N/A
ipv6_ip_address	String	**Definition**: Private IPv6 address of a supplementary network interface. **Range**: N/A

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Parameter	Type	Description
mac_address	String	**Definition**: MAC address of a supplementary network interface. **Range**: The value is a valid MAC address assigned by the system randomly.
parent_device_id	String	**Definition**: Device ID of the host network interface that a supplementary network interface is attached to. **Range**: The value is in UUID format with hyphens (-).
parent_id	String	**Definition**: ID of the elastic network interface that a supplementary network interface is attached to. **Range**: The value is in UUID format with hyphens (-).
description	String	**Definition**: Description of a supplementary network interface. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
vpc_id	String	**Definition**: ID of the VPC that a supplementary network interface belongs to. **Range**: The value is in UUID format with hyphens (-).
vlan_id	Integer	**Definition**: VLAN ID of a supplementary network interface. **Range**: 1 to 4094

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Parameter	Type	Description
security_groups	Array of strings	**Definition**: IDs of the security groups that a supplementary network interface is associated with. For example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. **Range**: If this parameter is not specified in the request, the supplementary network interface is automatically associated with the default security group after being created.
tags	Array of **ResponseTag** objects	**Definition**: Tags of a supplementary network interface, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
project_id	String	**Definition**: ID of the project that a supplementary network interface belongs to. **Range**: N/A
created_at	String	**Definition**: Time when a supplementary network interface was created. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
allowed_address_pairs	Array of **AllowedAddressPair** objects	**Definition**: IP/MAC address pair list of a supplementary network interface. For details, see the **AllowedAddressPair** object list. **Range**: N/A

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Parameter	Type	Description
state	String	**Definition**: Status of a supplementary network interface. **Range**: • **NORMAL**: The supplementary network interface is attached to an elastic network interface. • **UNBOUND**: The supplementary network interface is not attached to an elastic network interface.
instance_id	String	**Definition**: ID of the cloud service instance that a supplementary network interface is attached to, for example, RDS instance ID. **Range**: N/A
instance_type	String	**Definition**: Type of the cloud service instance that a supplementary network interface is attached to, for example, RDS. **Range**: N/A
scope	String	**Definition**: Public network egress information of the site where a supplementary network interface works. **Range**: • **center**: default value, indicating the central AZ. • *AZ ID*: a specific AZ
security_enabled	Boolean	**Definition**: Whether the security option is enabled for a supplementary network interface. If the option is not enabled, the security group does not take effect. **Range**: N/A

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Table 5-139 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-140 AllowedAddressPair

Parameter	Type	Description
ip_address	String	**Definition**: IP address. **Constraints**: Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. **Range**: Single IP address, for example, 192.168.21.25 A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A
mac_address	String	**Definition**: MAC address. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

Example Requests

Change the security group that is associated with the supplementary network interface whose ID is **2be868f2-f7c9-48db-abc0-eea0b9105b0d**.

```
PUT https://{Endpoint}/v3/8c6fb137a48a428aaf9a0229dca4edb3/vpc/sub-network-interfaces/2be868f2-f7c9-48db-abc0-eea0b9105b0d

{
  "sub_network_interface" : {
    "security_groups" : [ "6727c950-9f01-47a2-a7aa-7d3686c4c95b" ],
    "allowed_address_pairs" : [ {
      "ip_address" : "1.1.1.1/0"
    } ]
  }
}
```

Example Responses

Status code: 200

Normal response to the PUT operation. For more status codes, see **Status Codes**.

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```
{
  "sub_network_interface" : {
    "id" : "2be868f2-f7c9-48db-abc0-eea0b9105b0d",
    "project_id" : "6b32266bded64091a138e9ec19cff361",
    "virsubnet_id" : "3c15c3b0-0df4-4115-9c18-e67a8a0d7702",
    "private_ip_address" : "192.168.0.160",
    "ipv6_ip_address" : null,
    "mac_address" : "fa:16:3e:26:7e:1e",
    "parent_device_id" : "285b2e45-2968-4f4c-8992-54e0d4c8da1d",
    "security_enabled" : false,
    "security_groups" : [ "6727c950-9f01-47a2-a7aa-7d3686c4c95b" ],
    "allowed_address_pairs" : [ {
      "ip_address" : "1.1.1.1/0",
      "mac_address" : "fa:16:3e:26:7e:1e"
    } ],
    "vpc_id" : "c10e1e02-9db2-4bd0-89ef-52536952627e",
    "instance_id" : "",
    "instance_type" : "",
    "description" : "aaa",
    "parent_id" : "00336617-4552-48c5-9856-f539f4e9aca2",
    "vlan_id" : 3413,
    "state" : null,
    "tags" : [ ],
    "scope" : "center",
    "created_at" : "2025-02-10T08:21:16Z"
  },
  "request_id" : "d346a69661d82c7b14bdc7ac0cd62cbd"
}
```


Status Codes

Status Code	Description
200	Normal response to the PUT operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.5.7 Deleting a Supplementary Network Interface

Function

This API is used to delete a supplementary network interface that is no longer required.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/vpc/sub-network-interfaces/{sub_network_interface_id}

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Table 5-141 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Definition**: ID of the project that a supplementary network interface belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A
sub_network_interface_id	Yes	String	**Definition**: ID of a supplementary network interface. **Range**: N/A

Request Parameters

None

Response Parameters

Status code: 204

Normal response to the DELETE operation. For more status codes, see **Status Codes**.

None

Example Requests

Delete the supplementary network interfaces whose ID is **2be868f2-f7c9-48db-abc0-eea0b9105b0**.

```
DELETE https://{Endpoint}/v3/8c6fb137a48a428aaf9a0229dca4edb3/vpc/sub-network-interfaces/2be868f2-f7c9-48db-abc0-eea0b9105b0d
```

Example Responses

None

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Status Codes

Status Code	Description
204	Normal response to the DELETE operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.6 Network ACL

5.6.1 Creating a Network ACL

Function

A network ACL is an optional layer of security for your subnets. You can add inbound and outbound rules to a network ACL and associate subnets with it to control traffic in and out of the subnets.

Calling Method

For details, see **Calling APIs**.

URI

POST /v3/{project_id}/vpc/firewalls

Table 5-142 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Definition**: ID of the project that the network ACL belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

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Request Parameters

Table 5-143 Request body parameters

Parameter	Mandatory	Type	Description
firewall	Yes	CreateFirewallOption object	**Definition**: Request body for creating a network ACL. **Constraints**: N/A **Range**: N/A **Default Value**: N/A
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • **true**: A check request will be sent and no network ACL will not be created. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • false: A request will be sent and a network ACL will be created. **Default Value**: false

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Table 5-144 CreateFirewallOption

Parameter	Mandatory	Type	Description
name	Yes	String	**Definition**: Name of the network ACL. **Constraints**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods. **Range**: N/A **Default Value**: N/A
description	No	String	**Definition**: Supplementary information about the network ACL. **Constraints**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >). **Range**: N/A **Default Value**: N/A
enterprise_project_id	No	String	**Definition**: ID of the enterprise project that the network ACL belongs to. **Constraints**: • The value can contain a maximum of 36 bytes. • The value is **0** or a string in UUID format with hyphens (-). **Range**: N/A **Default Value**: **0** indicates the default enterprise project.

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Parameter	Mandatory	Type	Description
tags	No	Array of **RequestTag** objects	**Definition**: Tags of a network ACL, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Constraints**: A maximum of 20 tag key-value pairs are supported. **Range**: N/A **Default Value**: N/A
admin_state_up	No	Boolean	**Definition**: Network ACL administrative status. **Constraints**: N/A **Range**: • true: The network ACL is enabled. • false: The network ACL is disabled. **Default Value**: true

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Table 5-145 RequestTag

Parameter	Mandatory	Type	Description
key	Yes	String	**Definition**: Tag key. **Constraints**: N/A **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters **Default Value**: N/A

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Parameter	Mandatory	Type	Description
value	Yes	String	**Definition**: Tag value. **Constraints**: N/A **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters **Default Value**: N/A

Response Parameters

Status code: 201

Table 5-146 Response body parameters

Parameter	Type	Description
firewall	FirewallDetail object	**Definition**: Response body for creating a network ACL. **Range**: N/A
request_id	String	**Definition**: Request ID. **Range**: N/A

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Table 5-147 FirewallDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL ID. Each network ACL comes with an ID, which uniquely identifies the network ACL. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Name of the network ACL. **Range**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
project_id	String	**Definition**: ID of the project that the network ACL belongs to. **Range**: N/A
created_at	String	**Definition**: Time when the network ACL was created. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
updated_at	String	**Definition**: Time when the network ACL was last updated. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.

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Parameter	Type	Description
admin_state_up	Boolean	**Definition**: Network ACL administrative status. **Range** • true: The network ACL is enabled. • false: The network ACL is disabled.
status	String	**Definition**: Network ACL status. **Range** • ACTIVE: The network ACL is associated with a subnet. • INACTIVE: The network ACL is not associated with a subnet.
enterprise_project_id	String	**Definition**: ID of the enterprise project that the network ACL belongs to. **Range**: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.
tags	Array of **ResponseTag** objects	**Definition**: Tags of a network ACL, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
associations	Array of **FirewallAssociation** objects	**Definition**: Subnets associated with the network ACL. **Range**: N/A
ingress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL inbound rules. **Range**: N/A

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Parameter	Type	Description
egress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL outbound rules. **Range**: N/A

Table 5-148 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-149 FirewallAssociation

Parameter	Type	Description
virsubnet_id	String	**Definition**: ID of the subnet associated with the network ACL. **Range**: • If the network ACL type is normal, it can only be associated with common subnets. • If the network ACL type is CloudDCN, it can only be associated with CloudDCN subnets.

Table 5-150 FirewallRuleDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL rule ID. Each network ACL rule comes with an ID, which uniquely identifies the network ACL rule. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Network ACL rule name. **Range**: The value can contain 0 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL rule. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
action	String	**Definition**: Whether a network ACL rule allows or denies traffic. **Range**: ● allow: A network ACL rule allows traffic. ● deny: A network ACL rule denies traffic.
project_id	String	**Definition**: ID of the project that the network ACL rule belongs to. **Range**: N/A
protocol	String	**Definition**: Communication protocol of a network ACL rule. **Range**: ● tcp ● udp ● icmp ● icmpv6 ● IP protocol number (0-255) ● any: any protocol
ip_version	Integer	**Definition**: IP address version of a network ACL rule. **Range**: ● 4: IPv4 network ACL rule. ● 6: IPv6 network ACL rule.
source_ip_address	String	**Definition**: Source IP address or source IP address range of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_ip_address	String	**Definition**: Destination IP address or destination IP address range of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
source_port	String	**Definition**: Source port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
destination_port	String	**Definition**: Destination port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
source_address_group_id	String	**Definition**: ID of the source IP address group of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_address_group_id	String	**Definition**: ID of the destination IP address group of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
enabled	Boolean	**Definition**: Whether a network ACL rule is enabled. **Range**: • true: (default value) A network ACL rule is enabled. • false: A network ACL rule is disabled.

Example Requests

Create a network ACL named **network_acl_test1**.

```
POST https://{Endpoint}/v3/{project_id}/vpc/firewalls

{
  "firewall" : {
    "name" : "network_acl_test1",
    "description" : "network_acl_test1",
    "enterprise_project_id" : "158ad39a-dab7-45a3-9b5a-2836b3cf93f9"
  }
}
```

Example Responses

Status code: 201

Normal response to the POST operation. For more status codes, see **Status Codes**.

```
{
  "firewall" : {
    "id" : "e9a7731d-5bd9-4250-a524-b9a076fd5629",
    "name" : "network_acl_test1",
    "description" : "network_acl_test1",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "created_at" : "2022-04-07T07:30:46.000+00:00",
    "updated_at" : "2022-04-07T07:30:46.000+00:00",
    "admin_state_up" : true,
    "enterprise_project_id" : "158ad39a-dab7-45a3-9b5a-2836b3cf93f9",
    "status" : "ACTIVE",
    "tags" : [ ],
    "ingress_rules" : [ ],
    "egress_rules" : [ ],
    "associations" : [ ]
  }
}
```


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Status Codes

Status Code	Description
201	Normal response to the POST operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.6.2 Querying Network ACLs

Function

This API is used to query information about all network ACLs, including the network ACL name and status.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/vpc/firewalls

Table 5-151 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Definition**: ID of the project that the network ACL belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

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Table 5-152 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	**Definition**: Number of resources on each page. **Range**: 0 to 2000
marker	No	String	**Definition**: Start resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried. **Range**: Network ACL ID.
id	No	Array of strings	**Definition**: ID of the network ACL, which can be used to filter the network ACL. Multiple IDs can be specified for filtering. **Range**: N/A
name	No	Array of strings	**Definition**: Name of the network ACL, which can be used to filter the network ACL. Multiple names can be specified for filtering. **Range**: N/A
status	No	String	**Definition**: Network ACL status, which indicates whether the network ACL has been associated with a subnet. This value can be used to filter the network ACL. **Range**: • ACTIVE: Filter network ACLs that have been associated with subnets. • INACTIVE: Filter network ACLs that have not been associated with subnets.

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Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	**Definition**: Administrative status of a network ACL, which indicates whether the network ACL is enabled or disabled and can be used to filter the network ACL. **Range**: • true: Filter network ACLs that are enabled. • false: Filter network ACLs that are disabled.
enterprise_project_id	No	Array of strings	**Definition**: ID of the enterprise project that the network ACL belongs to. You can use this field to filter network ACLs in an enterprise project. **Range**: • The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project. • To obtain network ACLs of all enterprise projects, set this parameter to **all_granted_eps**.

Request Parameters

None

Response Parameters

Status code: 200

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Table 5-153 Response body parameters

Parameter	Type	Description
firewalls	Array of **ListFirewallDetail** objects	**Definition**: Response body for querying network ACLs. **Range**: N/A
page_info	**PageInfo** object	**Definition**: Pagination information. **Range**: N/A
request_id	String	**Definition**: Request ID. **Range**: N/A

Table 5-154 ListFirewallDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL ID. Each network ACL comes with an ID, which uniquely identifies the network ACL. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Name of the network ACL. **Range**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
project_id	String	**Definition**: ID of the project that the network ACL belongs to. **Range**: N/A
created_at	String	**Definition**: Time when the network ACL was created. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
updated_at	String	**Definition**: Time when the network ACL was last updated. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
admin_state_up	Boolean	**Definition**: Network ACL administrative status. **Range**: ● true: The network ACL is enabled. ● false: The network ACL is disabled.
status	String	**Definition**: Network ACL status. **Range**: ● ACTIVE: The network ACL is associated with a subnet. ● INACTIVE: The network ACL is not associated with a subnet.
enterprise_project_id	String	**Definition**: ID of the enterprise project that the network ACL belongs to. **Range**: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.

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Parameter	Type	Description
tags	Array of **ResponseTag** objects	**Definition**: Tags of a network ACL, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
associations	Array of **FirewallAssociation** objects	**Definition**: Subnets associated with the network ACL. **Range**: N/A

Table 5-155 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Parameter	Type	Description
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

Table 5-156 FirewallAssociation

Parameter	Type	Description
virsubnet_id	String	**Definition**: ID of the subnet associated with the network ACL. **Range**: • If the network ACL type is normal, it can only be associated with common subnets. • If the network ACL type is CloudDCN, it can only be associated with CloudDCN subnets.

Table 5-157 PageInfo

Parameter	Type	Description
previous_marker	String	**Definition**: The first record on the current page. **Range**: N/A

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Parameter	Type	Description
current_count	Integer	**Definition**: Total number of resources on the current page. **Range**: N/A
next_marker	String	**Definition**: The last record on the current page. The **next_marker** field does not exist if the page is the last one. **Range**: N/A

Example Requests

Querying network ACLs

```
GET https://{Endpoint}/v3/{project_id}/vpc/firewalls
```

Example Responses

Status code: 200

Normal response to the GET operation. For more status codes, see **Status Codes**.

```
{
  "firewalls" : [ {
    "id" : "e9a7731d-5bd9-4250-a524-b9a076fd5629",
    "name" : "network_acl_test1",
    "description" : "network_acl_test1",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "created_at" : "2022-04-07T07:30:46.000+00:00",
    "updated_at" : "2022-04-07T07:30:46.000+00:00",
    "admin_state_up" : true,
    "enterprise_project_id" : "158ad39a-dab7-45a3-9b5a-2836b3cf93f9",
    "status" : "ACTIVE",
    "tags" : [ ],
    "associations" : [ {
      "virsubnet_id" : "8359e5b0-353f-4ef3-a071-98e67a34a143"
    } ]
  } ]
}
```

Status Codes

Status Code	Description
200	Normal response to the GET operation. For more status codes, see **Status Codes**.

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Error Codes

See **Error Codes**.

5.6.3 Querying the Details of a Network ACL

Function

This API is used to query details about a network ACL, including the network ACL name and status.

Calling Method

For details, see **Calling APIs**.

URI

GET /v3/{project_id}/vpc/firewalls/{firewall_id}

Table 5-158 Path Parameters

Parameter	Mandatory	Type	Description
firewall_id	Yes	String	**Definition**: Network ACL ID. You can call the API **Querying Network ACLs** to obtain the ID of the target network ACL, and then use this API to query details about the network ACL. **Range**: N/A
project_id	Yes	String	**Definition**: ID of the project that the network ACL belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

None

Response Parameters

Status code: 200

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Table 5-159 Response body parameters

Parameter	Type	Description
firewall	**FirewallDetail** object	**Definition**: Response body for querying network ACL details. **Range**: N/A
request_id	String	**Definition**: Request ID. **Range**: N/A

Table 5-160 FirewallDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL ID. Each network ACL comes with an ID, which uniquely identifies the network ACL. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Name of the network ACL. **Range**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
project_id	String	**Definition**: ID of the project that the network ACL belongs to. **Range**: N/A
created_at	String	**Definition**: Time when the network ACL was created. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
updated_at	String	**Definition**: Time when the network ACL was last updated. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
admin_state_up	Boolean	**Definition**: Network ACL administrative status. **Range** ● true: The network ACL is enabled. ● false: The network ACL is disabled.
status	String	**Definition**: Network ACL status. **Range** ● ACTIVE: The network ACL is associated with a subnet. ● INACTIVE: The network ACL is not associated with a subnet.
enterprise_project_id	String	**Definition**: ID of the enterprise project that the network ACL belongs to. **Range**: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.

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Parameter	Type	Description
tags	Array of **ResponseTag** objects	**Definition**: Tags of a network ACL, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
associations	Array of **FirewallAssociation** objects	**Definition**: Subnets associated with the network ACL. **Range**: N/A
ingress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL inbound rules. **Range**: N/A
egress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL outbound rules. **Range**: N/A

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Table 5-161 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-162 FirewallAssociation

Parameter	Type	Description
virsubnet_id	String	**Definition**: ID of the subnet associated with the network ACL. **Range**: • If the network ACL type is normal, it can only be associated with common subnets. • If the network ACL type is CloudDCN, it can only be associated with CloudDCN subnets.

Table 5-163 FirewallRuleDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL rule ID. Each network ACL rule comes with an ID, which uniquely identifies the network ACL rule. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Network ACL rule name. **Range**: The value can contain 0 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL rule. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
action	String	**Definition**: Whether a network ACL rule allows or denies traffic. **Range**: ● allow: A network ACL rule allows traffic. ● deny: A network ACL rule denies traffic.
project_id	String	**Definition**: ID of the project that the network ACL rule belongs to. **Range**: N/A
protocol	String	**Definition**: Communication protocol of a network ACL rule. **Range**: ● tcp ● udp ● icmp ● icmpv6 ● IP protocol number (0-255) ● any: any protocol
ip_version	Integer	**Definition**: IP address version of a network ACL rule. **Range**: ● 4: IPv4 network ACL rule. ● 6: IPv6 network ACL rule.
source_ip_address	String	**Definition**: Source IP address or source IP address range of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_ip_address	String	**Definition**: Destination IP address or destination IP address range of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
source_port	String	**Definition**: Source port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
destination_port	String	**Definition**: Destination port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
source_address_group_id	String	**Definition**: ID of the source IP address group of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_address_group_id	String	**Definition**: ID of the destination IP address group of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
enabled	Boolean	**Definition**: Whether a network ACL rule is enabled. **Range**: • true: (default value) A network ACL rule is enabled. • false: A network ACL rule is disabled.

Example Requests

Querying the details of a network ACL

```
GET https://{Endpoint}/v3/{project_id}/vpc/firewalls/{firewall_id}
```

Example Responses

Status code: 200

Normal response to the GET operation. For more status codes, see **Status Codes**.

```
{
  "firewall" : {
    "id" : "e9a7731d-5bd9-4250-a524-b9a076fd5629",
    "name" : "network_acl_test1",
    "description" : "network_acl_test1",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "created_at" : "2022-04-07T07:30:46.000+00:00",
    "updated_at" : "2022-04-07T07:30:46.000+00:00",
    "admin_state_up" : true,
    "enterprise_project_id" : "158ad39a-dab7-45a3-9b5a-2836b3cf93f9",
    "status" : "ACTIVE",
    "tags" : [ ],
    "ingress_rules" : [ {
      "id" : "774cf578-e70d-ec11-a40c-b864b1cf74ea",
      "name" : "network_acl_rule test",
      "description" : "network_acl_rule test",
      "action" : "allow",
      "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
      "protocol" : "tcp",
      "ip_version" : 4,
      "source_ip_address" : "192.168.3.0/24",
      "destination_ip_address" : "192.168.6.0/24",
      "source_port" : "30-40,60-90",
      "destination_port" : "40-60,70-90"
    } ],
    "egress_rules" : [ {
```


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```
    "id" : "e9a7731d-5bd9-4250-a524-b9a076fd5629",
    "name" : "network_acl_rule test",
    "description" : "network_acl_rule test",
    "action" : "allow",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "protocol" : "tcp",
    "ip_version" : 4,
    "source_ip_address" : "192.168.3.0/24",
    "destination_ip_address" : "192.168.6.0/24",
    "source_port" : "30-40,60-90",
    "destination_port" : "40-60,70-90"
   } ],
   "associations" : [ {
    "virsubnet_id" : "8359e5b0-353f-4ef3-a071-98e67a34a143"
   } ]
  }
}
```

Status Codes

Status Code	Description
200	Normal response to the GET operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.6.4 Updating a Network ACL

Function

This API is used to update the basic information about a network ACL, including the network ACL name and description.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/vpc/firewalls/{firewall_id}

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Table 5-164 Path Parameters

Parameter	Mandatory	Type	Description
firewall_id	Yes	String	**Definition**: Network ACL ID. You can call the API **Querying Network ACLs** to obtain the ID of the target network ACL, and then use this API to update the network ACL. **Range**: N/A
project_id	Yes	String	**Definition**: ID of the project that the network ACL belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

Table 5-165 Request body parameters

Parameter	Mandatory	Type	Description
firewall	Yes	**UpdateFirewallOption** object	**Definition**: Request body for updating a network ACL **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • **true**: A check request will be sent and no network ACL will not be updated. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • false: A request will be sent and a network ACL will be updated. **Default Value**: false

Table 5-166 UpdateFirewallOption

Parameter	Mandatory	Type	Description
name	No	String	**Definition**: Name of the network ACL. **Constraints**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
description	No	String	**Definition**: Supplementary information about the network ACL. **Constraints**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >). **Range**: N/A **Default Value**: N/A
admin_state_up	No	Boolean	**Definition**: Network ACL administrative status. **Constraints**: N/A **Range**: • true: The network ACL is enabled. • false: The network ACL is disabled. **Default Value**: true

Response Parameters

Status code: 200

Table 5-167 Response body parameters

Parameter	Type	Description
firewall	FirewallDetail object	**Definition**: Response body for updating a network ACL **Range**: N/A

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Parameter	Type	Description
request_id	String	**Definition**: Request ID. **Range**: N/A

Table 5-168 FirewallDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL ID. Each network ACL comes with an ID, which uniquely identifies the network ACL. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Name of the network ACL. **Range**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
project_id	String	**Definition**: ID of the project that the network ACL belongs to. **Range**: N/A

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Parameter	Type	Description
created_at	String	**Definition**: Time when the network ACL was created. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
updated_at	String	**Definition**: Time when the network ACL was last updated. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
admin_state_up	Boolean	**Definition**: Network ACL administrative status. **Range** • true: The network ACL is enabled. • false: The network ACL is disabled.
status	String	**Definition**: Network ACL status. **Range** • ACTIVE: The network ACL is associated with a subnet. • INACTIVE: The network ACL is not associated with a subnet.
enterprise_project_id	String	**Definition**: ID of the enterprise project that the network ACL belongs to. **Range**: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.
tags	Array of **ResponseTag** objects	**Definition**: Tags of a network ACL, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A

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Parameter	Type	Description
associations	Array of **FirewallAssociation** objects	**Definition**: Subnets associated with the network ACL. **Range**: N/A
ingress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL inbound rules. **Range**: N/A
egress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL outbound rules. **Range**: N/A

Table 5-169 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Parameter	Type	Description
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

Table 5-170 FirewallAssociation

Parameter	Type	Description
virsubnet_id	String	**Definition**: ID of the subnet associated with the network ACL. **Range**: • If the network ACL type is normal, it can only be associated with common subnets. • If the network ACL type is CloudDCN, it can only be associated with CloudDCN subnets.

Table 5-171 FirewallRuleDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL rule ID. Each network ACL rule comes with an ID, which uniquely identifies the network ACL rule. **Range**: The value is in UUID format with hyphens (-).

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Parameter	Type	Description
name	String	**Definition**: Network ACL rule name. **Range**: The value can contain 0 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL rule. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
action	String	**Definition**: Whether a network ACL rule allows or denies traffic. **Range**: ● allow: A network ACL rule allows traffic. ● deny: A network ACL rule denies traffic.
project_id	String	**Definition**: ID of the project that the network ACL rule belongs to. **Range**: N/A
protocol	String	**Definition**: Communication protocol of a network ACL rule. **Range**: ● tcp ● udp ● icmp ● icmpv6 ● IP protocol number (0-255) ● any: any protocol

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Parameter	Type	Description
ip_version	Integer	**Definition**: IP address version of a network ACL rule. **Range**: ● 4: IPv4 network ACL rule. ● 6: IPv6 network ACL rule.
source_ip_address	String	**Definition**: Source IP address or source IP address range of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.
destination_ip_address	String	**Definition**: Destination IP address or destination IP address range of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
source_port	String	**Definition**: Source port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.

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Parameter	Type	Description
destination_port	String	**Definition**: Destination port of a network ACL rule. **Range**: • Individual port: for example, 22 • Consecutive ports: for example, 22-30 • Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. • All ports: Leave it empty or enter 1-65535.
source_address_group_id	String	**Definition**: ID of the source IP address group of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.
destination_address_group_id	String	**Definition**: ID of the destination IP address group of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
enabled	Boolean	**Definition**: Whether a network ACL rule is enabled. **Range**: • true: (default value) A network ACL rule is enabled. • false: A network ACL rule is disabled.

Example Requests

Change the name and description of the network ACL whose ID is **e9a7731d-5bd9-4250-a524-b9a076fd5629** to **network_acl_test1** and enable the network ACL.

```
PUT https://{Endpoint}/v3/9476ea5a8a9849c38358e43c0c3a9e12/vpc/firewalls/e9a7731d-5bd9-4250-a524-b9a076fd5629
```


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```
{
  "firewall" : {
    "name" : "network_acl_test1",
    "description" : "network_acl_test1",
    "admin_state_up" : true
  }
}
```

Example Responses

Status code: 200

Normal response to the PUT operation. For more status codes, see **Status Codes**.

```
{
  "firewall" : {
    "id" : "e9a7731d-5bd9-4250-a524-b9a076fd5629",
    "name" : "network_acl_test1",
    "description" : "network_acl_test1",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "created_at" : "2022-04-07T07:30:46.000+00:00",
    "updated_at" : "2022-04-07T07:30:46.000+00:00",
    "admin_state_up" : true,
    "enterprise_project_id" : "158ad39a-dab7-45a3-9b5a-2836b3cf93f9",
    "status" : "ACTIVE",
    "tags" : [ ],
    "ingress_rules" : [ {
      "id" : "774cf578-e70d-ec11-a40c-b864b1cf74ea",
      "name" : "network_acl_rule test",
      "description" : "network_acl_rule test",
      "action" : "allow",
      "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
      "protocol" : "tcp",
      "ip_version" : 4,
      "source_ip_address" : "192.168.3.0/24",
      "destination_ip_address" : "192.168.6.0/24",
      "source_port" : "30-40,60-90",
      "destination_port" : "40-60,70-90"
    } ],
    "egress_rules" : [ {
      "id" : "f9a7731d-5bd9-4250-a524-b9a076fd5629",
      "name" : "network_acl_rule test",
      "description" : "network_acl_rule test",
      "action" : "allow",
      "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
      "protocol" : "tcp",
      "ip_version" : 4,
      "source_ip_address" : "192.168.3.0/24",
      "destination_ip_address" : "192.168.6.0/24",
      "source_port" : "30-40,60-90",
      "destination_port" : "40-60,70-90"
    } ],
    "associations" : [ {
      "virsubnet_id" : "8359e5b0-353f-4ef3-a071-98e67a34a143"
    } ]
  }
}
```


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Status Codes

Status Code	Description
200	Normal response to the PUT operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.6.5 Deleting a Network ACL

Function

This API is used to delete a network ACL that is no longer required.

Calling Method

For details, see **Calling APIs**.

URI

DELETE /v3/{project_id}/vpc/firewalls/{firewall_id}

Table 5-172 Path Parameters

Parameter	Mandatory	Type	Description
firewall_id	Yes	String	**Definition**: Network ACL ID. You can call the API **Querying Network ACLs** to obtain the ID of the target network ACL, and then use this API to delete the network ACL. **Range**: N/A
project_id	Yes	String	**Definition**: ID of the project that the network ACL belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

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Request Parameters

None

Response Parameters

Status code: 204

Normal response to the DELETE operation. For more status codes, see **Status Codes**.

None

Example Requests

Deleting a network ACL

```
DELETE https://{Endpoint}/v3/{project_id}/vpc/firewalls/{firewall_id}
```

Example Responses

None

Status Codes

Status Code	Description
204	Normal response to the DELETE operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.6.6 Updating a Network ACL Rule

Function

This API is used to update the basic information about a network ACL rule, such as the source address, destination address, source port, and destination port.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/vpc/firewalls/{firewall_id}/update-rules

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Table 5-173 Path Parameters

Parameter	Mandatory	Type	Description
firewall_id	Yes	String	**Definition**: Network ACL ID. You can call the API **Querying Network ACLs** to obtain the ID of the target network ACL, and then use this API to update network ACL rules. **Range**: N/A
project_id	Yes	String	**Definition**: ID of the project that the network ACL belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

Table 5-174 Request body parameters

Parameter	Mandatory	Type	Description
firewall	Yes	**FirewallUpdateRuleOption** object	**Definition**: Request body for updating a network ACL rule **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • **true**: A check request will be sent and no network ACL rule will not be updated. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • false: A request will be sent and a network ACL rule will be updated. **Default Value**: false

Table 5-175 FirewallUpdateRuleOption

Parameter	Mandatory	Type	Description
ingress_rules	No	Array of **FirewallUpdateRuleItemOption** objects	**Definition**: Inbound network ACL rules to be updated. **Constraints**: • Either **ingress_rules** or **egress_rules** can be specified. That is, either the inbound or outbound rules can be specified for updating rules. • Currently, only one network ACL rule can be updated at a time. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
egress_rules	No	Array of **FirewallUpdateRuleItemOption** objects	**Definition**: Outbound network ACL rules to be updated. **Constraints**: • Either **ingress_rules** or **egress_rules** can be specified. That is, either the inbound or outbound rules can be specified for updating rules. • Currently, only one network ACL rule can be updated at a time. **Range**: N/A **Default Value**: N/A

Table 5-176 FirewallUpdateRuleItemOption

Parameter	Mandatory	Type	Description
id	Yes	String	**Definition**: Network ACL rule ID. **Constraints**: The value is in UUID format with hyphens (-). **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
name	No	String	**Definition**: Network ACL rule name. **Constraints**: The value can contain 0 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods. **Range**: N/A **Default Value**: N/A
description	No	String	**Definition**: Supplementary information about the network ACL rule. **Constraints**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >). **Range**: N/A **Default Value**: N/A
action	No	String	**Definition**: Whether a network ACL rule allows or denies traffic. **Constraints**: N/A **Range**: • allow: A network ACL rule allows traffic. • deny: A network ACL rule denies traffic. **Default Value**: N/A

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Parameter	Mandatory	Type	Description
protocol	No	String	**Definition**: Communication protocol of a network ACL rule. **Constraints**: • The protocol cannot be empty. • If the protocol is **icmpv6**, IP version should be IPv6. • If the protocol is **icmp**, IP version should be IPv4. • tcp • udp • icmp • icmpv6 • IP protocol number (0-255) • any: any protocol **Range**: **Default Value**: N/A
ip_version	No	Integer	**Definition**: IP address version of a network ACL rule. **Constraints**: N/A **Range**: • 4: IPv4 network ACL rule. • 6: IPv6 network ACL rule. **Default Value**: N/A

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Parameter	Mandatory	Type	Description
source_ip_address	No	String	**Definition**: Source IP address or source IP address range of a network ACL rule. **Constraints**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time. **Range**: N/A **Default Value**: N/A
destination_ip_address	No	String	**Definition**: Destination IP address or destination IP address range of a network ACL rule. **Constraints**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
source_port	No	String	**Definition**: Source port of a network ACL rule. **Constraints**: • Individual port: for example, 22 • Consecutive ports: for example, 22-30 • Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. • All ports: Leave it empty or enter 1-65535. **Range**: N/A **Default Value**: N/A
destination_port	No	String	**Definition**: Destination port of a network ACL rule. **Constraints**: • Individual port: for example, 22 • Consecutive ports: for example, 22-30 • Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. • All ports: Leave it empty or enter 1-65535. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
source_address_group_id	No	String	**Definition**: ID of the source IP address group of a network ACL rule. **Constraints**: • **source_ip_address** and **source_address_group_id** cannot be specified at the same time. • **source_address_group_id** and **destination_address_group_id** cannot be specified at the same time. **Range**: N/A **Default Value**: N/A
destination_address_group_id	No	String	**Definition**: ID of the destination IP address group of a network ACL rule. **Constraints**: • **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time. • **destination_address_group_id** and **source_address_group_id** cannot be specified at the same time. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
enabled	No	Boolean	**Definition**: Whether a network ACL rule is enabled. **Constraints**: N/A **Range**: • true: A network ACL rule is enabled. • false: A network ACL rule is disabled. **Default Value**: true

Response Parameters

Status code: 200

Table 5-177 Response body parameters

Parameter	Type	Description
firewall	FirewallDetail object	**Definition**: Response body for updating a network ACL rule **Range**: N/A
request_id	String	**Definition**: Request ID. **Range**: N/A

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Table 5-178 FirewallDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL ID. Each network ACL comes with an ID, which uniquely identifies the network ACL. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Name of the network ACL. **Range**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
project_id	String	**Definition**: ID of the project that the network ACL belongs to. **Range**: N/A
created_at	String	**Definition**: Time when the network ACL was created. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
updated_at	String	**Definition**: Time when the network ACL was last updated. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.

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Parameter	Type	Description
admin_state_up	Boolean	**Definition**: Network ACL administrative status. **Range** • true: The network ACL is enabled. • false: The network ACL is disabled.
status	String	**Definition**: Network ACL status. **Range** • ACTIVE: The network ACL is associated with a subnet. • INACTIVE: The network ACL is not associated with a subnet.
enterprise_project_id	String	**Definition**: ID of the enterprise project that the network ACL belongs to. **Range**: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.
tags	Array of **ResponseTag** objects	**Definition**: Tags of a network ACL, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
associations	Array of **FirewallAssociation** objects	**Definition**: Subnets associated with the network ACL. **Range**: N/A
ingress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL inbound rules. **Range**: N/A

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Parameter	Type	Description
egress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL outbound rules. **Range**: N/A

Table 5-179 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-180 FirewallAssociation

Parameter	Type	Description
virsubnet_id	String	**Definition**: ID of the subnet associated with the network ACL. **Range**: • If the network ACL type is normal, it can only be associated with common subnets. • If the network ACL type is CloudDCN, it can only be associated with CloudDCN subnets.

Table 5-181 FirewallRuleDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL rule ID. Each network ACL rule comes with an ID, which uniquely identifies the network ACL rule. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Network ACL rule name. **Range**: The value can contain 0 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL rule. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
action	String	**Definition**: Whether a network ACL rule allows or denies traffic. **Range**: ● allow: A network ACL rule allows traffic. ● deny: A network ACL rule denies traffic.
project_id	String	**Definition**: ID of the project that the network ACL rule belongs to. **Range**: N/A
protocol	String	**Definition**: Communication protocol of a network ACL rule. **Range**: ● tcp ● udp ● icmp ● icmpv6 ● IP protocol number (0-255) ● any: any protocol
ip_version	Integer	**Definition**: IP address version of a network ACL rule. **Range**: ● 4: IPv4 network ACL rule. ● 6: IPv6 network ACL rule.
source_ip_address	String	**Definition**: Source IP address or source IP address range of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_ip_address	String	**Definition**: Destination IP address or destination IP address range of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
source_port	String	**Definition**: Source port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
destination_port	String	**Definition**: Destination port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
source_address_group_id	String	**Definition**: ID of the source IP address group of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_address_group_id	String	**Definition**: ID of the destination IP address group of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
enabled	Boolean	**Definition**: Whether a network ACL rule is enabled. **Range**: • true: (default value) A network ACL rule is enabled. • false: A network ACL rule is disabled.

Example Requests

Update the inbound rule whose ID is 774cf578-e70d-ec11-a40c-b864b1cf74ea in the network ACL whose ID is e9a7731d-5bd9-4250-a524-b9a076fd5629.

```
PUT https://{Endpoint}/v3/{project_id}/vpc/firewalls/e9a7731d-5bd9-4250-a524-b9a076fd5629/update-rules

{
  "firewall" : {
    "ingress_rules" : [ {
      "id" : "774cf578-e70d-ec11-a40c-b864b1cf74ea",
      "name" : "network_acl_rule test2",
      "description" : "network_acl_rule test2",
      "action" : "allow",
      "protocol" : "tcp",
      "ip_version" : "4",
      "source_ip_address" : "192.168.3.0/24",
      "destination_ip_address" : "192.168.6.0/24",
      "source_port" : "30-40,60-90",
      "destination_port" : "40-60,70-90",
      "source_address_group_id" : null,
      "destination_address_group_id" : null
    } ]
  }
}
```

Example Responses

Status code: 200

Normal response to the PUT operation. For more status codes, see **Status Codes**.

```
{
  "firewall" : {
    "id" : "e9a7731d-5bd9-4250-a524-b9a076fd5629",
    "name" : "network_acl_test1",
    "description" : "network_acl_test1",
```


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```
  "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
  "created_at" : "2022-04-07T07:30:46.000+00:00",
  "updated_at" : "2022-04-07T07:30:46.000+00:00",
  "admin_state_up" : true,
  "enterprise_project_id" : "158ad39a-dab7-45a3-9b5a-2836b3cf93f9",
  "status" : "ACTIVE",
  "tags" : [ ],
  "ingress_rules" : [ {
    "id" : "774cf578-e70d-ec11-a40c-b864b1cf74ea",
    "name" : "network_acl_rule test2",
    "description" : "network_acl_rule test2",
    "action" : "allow",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "protocol" : "tcp",
    "ip_version" : 4,
    "source_ip_address" : "192.168.3.0/24",
    "destination_ip_address" : "192.168.6.0/24",
    "source_port" : "30-40,60-90",
    "destination_port" : "40-60,70-90"
  } ],
  "egress_rules" : [ {
    "id" : "f9a7731d-5bd9-4250-a524-b9a076fd5629",
    "name" : "network_acl_rule test",
    "description" : "network_acl_rule test",
    "action" : "allow",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "protocol" : "tcp",
    "ip_version" : 4,
    "source_ip_address" : "192.168.3.0/24",
    "destination_ip_address" : "192.168.6.0/24",
    "source_port" : "30-40,60-90",
    "destination_port" : "40-60,70-90"
  } ],
  "associations" : [ {
    "virsubnet_id" : "8359e5b0-353f-4ef3-a071-98e67a34a143"
  } ]
 }
}
```


Status Codes

Status Code	Description
200	Normal response to the PUT operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.6.7 Inserting a Network ACL Rule

Function

This API is used to add rules to a network ACL.

Calling Method

For details, see **Calling APIs**.

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URI

PUT /v3/{project_id}/vpc/firewalls/{firewall_id}/insert-rules

Table 5-182 Path Parameters

Parameter	Mandatory	Type	Description
firewall_id	Yes	String	**Definition**: Network ACL ID. You can call the API **Querying Network ACLs** to obtain the ID of the target network ACL, and then use this API to add network ACL rules. **Range**: N/A
project_id	Yes	String	**Definition**: ID of the project that the network ACL belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

Table 5-183 Request body parameters

Parameter	Mandatory	Type	Description
firewall	Yes	**FirewallInsertRuleOption** object	**Definition**: Request body for inserting a network ACL rule. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • true: A check request will be sent and no network ACL rule will be inserted. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • false: A request will be sent and a network ACL rule will be inserted. **Default Value**: false

Table 5-184 FirewallInsertRuleOption

Parameter	Mandatory	Type	Description
ingress_rules	No	Array of **FirewallInsertRuleItemOption** objects	**Definition**: Network ACL inbound rules. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
egress_rules	No	Array of **FirewallInsertRuleItemOption** objects	**Definition**: Network ACL outbound rules. **Constraints**: N/A **Range**: N/A **Default Value**: N/A
insert_after_rule	No	String	**Definition**: ID of an inbound or outbound network ACL rule after which a new rule will be inserted. If not specified, the network ACL rule will be inserted at the beginning of the inbound or outbound rule list. **Constraints**: If **insert_after_rule** is specified, either **ingress_rules** or **egress_rules** can be specified. That is, the new rule must be inserted into either the inbound or outbound rule list. The specified rule must exist in the inbound or outbound network ACL rule list. **Range**: N/A **Default Value**: N/A

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Table 5-185 FirewallInsertRuleItemOption

Parameter	Mandatory	Type	Description
name	No	String	**Definition**: Network ACL rule name. **Constraints**: The value can contain 0 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods. **Range**: N/A **Default Value**: N/A
description	No	String	**Definition**: Supplementary information about the network ACL rule. **Constraints**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >). **Range**: N/A **Default Value**: N/A
action	Yes	String	**Definition**: Whether a network ACL rule allows or denies traffic. **Constraints**: N/A **Range**: • allow: A network ACL rule allows traffic. • deny: A network ACL rule denies traffic. **Default Value**: N/A

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Parameter	Mandatory	Type	Description
protocol	Yes	String	**Definition**: Communication protocol of a network ACL rule. **Constraints**: • The protocol cannot be empty. • If the protocol is **icmpv6**, IP version should be IPv6. • If the protocol is **icmp**, IP version should be IPv4. • tcp • udp • icmp • icmpv6 • IP protocol number (0-255) • any: any protocol **Range**: **Default Value**: N/A
ip_version	Yes	Integer	**Definition**: IP address version of a network ACL rule. **Constraints**: N/A **Range**: • 4: IPv4 network ACL rule. • 6: IPv6 network ACL rule. **Default Value**: N/A

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Parameter	Mandatory	Type	Description
source_ip_address	No	String	**Definition**: Source IP address or source IP address range of a network ACL rule. **Constraints**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time. **Range**: N/A **Default Value**: N/A
destination_ip_address	No	String	**Definition**: Destination IP address or destination IP address range of a network ACL rule. **Constraints**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
source_port	No	String	**Definition**: Source port of a network ACL rule. **Constraints**: • Individual port: for example, 22 • Consecutive ports: for example, 22-30 • Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. • All ports: Leave it empty or enter 1-65535. **Range**: N/A **Default Value**: N/A
destination_port	No	String	**Definition**: Destination port of a network ACL rule. **Constraints**: • Individual port: for example, 22 • Consecutive ports: for example, 22-30 • Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. • All ports: Leave it empty or enter 1-65535. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
source_address_group_id	No	String	**Definition**: ID of the source IP address group of a network ACL rule. **Constraints**: • **source_ip_address** and **source_address_group_id** cannot be specified at the same time. • **source_address_group_id** and **destination_address_group_id** cannot be specified at the same time. **Range**: N/A **Default Value**: N/A
destination_address_group_id	No	String	**Definition**: ID of the destination IP address group of a network ACL rule. **Constraints**: • **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time. • **destination_address_group_id** and **source_address_group_id** cannot be specified at the same time. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
enabled	No	Boolean	**Definition**: Whether a network ACL rule is enabled. **Constraints**: N/A **Range**: • true: A network ACL rule is enabled. • false: A network ACL rule is disabled. **Default Value**: true

Response Parameters

Status code: 200

Table 5-186 Response body parameters

Parameter	Type	Description
firewall	FirewallDetail object	**Definition**: Response body for inserting a network ACL rule. **Range**: N/A
request_id	String	**Definition**: Request ID. **Range**: N/A

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Table 5-187 FirewallDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL ID. Each network ACL comes with an ID, which uniquely identifies the network ACL. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Name of the network ACL. **Range**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
project_id	String	**Definition**: ID of the project that the network ACL belongs to. **Range**: N/A
created_at	String	**Definition**: Time when the network ACL was created. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
updated_at	String	**Definition**: Time when the network ACL was last updated. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.

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Parameter	Type	Description
admin_state_up	Boolean	**Definition**: Network ACL administrative status. **Range** • true: The network ACL is enabled. • false: The network ACL is disabled.
status	String	**Definition**: Network ACL status. **Range** • ACTIVE: The network ACL is associated with a subnet. • INACTIVE: The network ACL is not associated with a subnet.
enterprise_project_id	String	**Definition**: ID of the enterprise project that the network ACL belongs to. **Range**: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.
tags	Array of **ResponseTag** objects	**Definition**: Tags of a network ACL, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
associations	Array of **FirewallAssociation** objects	**Definition**: Subnets associated with the network ACL. **Range**: N/A
ingress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL inbound rules. **Range**: N/A

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Parameter	Type	Description
egress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL outbound rules. **Range**: N/A

Table 5-188 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-189 FirewallAssociation

Parameter	Type	Description
virsubnet_id	String	**Definition**: ID of the subnet associated with the network ACL. **Range**: • If the network ACL type is normal, it can only be associated with common subnets. • If the network ACL type is CloudDCN, it can only be associated with CloudDCN subnets.

Table 5-190 FirewallRuleDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL rule ID. Each network ACL rule comes with an ID, which uniquely identifies the network ACL rule. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Network ACL rule name. **Range**: The value can contain 0 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL rule. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
action	String	**Definition**: Whether a network ACL rule allows or denies traffic. **Range**: ● allow: A network ACL rule allows traffic. ● deny: A network ACL rule denies traffic.
project_id	String	**Definition**: ID of the project that the network ACL rule belongs to. **Range**: N/A
protocol	String	**Definition**: Communication protocol of a network ACL rule. **Range**: ● tcp ● udp ● icmp ● icmpv6 ● IP protocol number (0-255) ● any: any protocol
ip_version	Integer	**Definition**: IP address version of a network ACL rule. **Range**: ● 4: IPv4 network ACL rule. ● 6: IPv6 network ACL rule.
source_ip_address	String	**Definition**: Source IP address or source IP address range of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_ip_address	String	**Definition**: Destination IP address or destination IP address range of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
source_port	String	**Definition**: Source port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
destination_port	String	**Definition**: Destination port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
source_address_group_id	String	**Definition**: ID of the source IP address group of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_address_group_id	String	**Definition**: ID of the destination IP address group of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
enabled	Boolean	**Definition**: Whether a network ACL rule is enabled. **Range**: • true: (default value) A network ACL rule is enabled. • false: A network ACL rule is disabled.

Example Requests

- Insert an inbound rule below the rule whose ID is 774cf578-e70d-ec11-a40c-b864b1cf74ea to the network ACL whose ID is e9a7731d-5bd9-4250-a524-b9a076fd5629.

```
PUT https://{Endpoint}/v3/{project_id}/vpc/firewalls/e9a7731d-5bd9-4250-a524-b9a076fd5629/insert-rules

{
  "firewall" : {
    "ingress_rules" : [ {
      "name" : "network_acl_rule test 2",
      "description" : "network_acl_rule test 2",
      "action" : "allow",
      "protocol" : "tcp",
      "ip_version" : "4",
      "source_ip_address" : "192.168.12.0/24",
      "destination_ip_address" : "192.168.17.0/24",
      "source_port" : "30-40,60-90",
      "destination_port" : "40-60,70-90",
      "source_address_group_id" : null,
      "destination_address_group_id" : null
    } ],
    "insert_after_rule" : "774cf578-e70d-ec11-a40c-b864b1cf74ea"
  }
}
```

- Insert an outbound rule below the rule whose ID is f9a7731d-5bd9-4250-a524-b9a076fd5629 to the network ACL whose ID is e9a7731d-5bd9-4250-a524-b9a076fd5629.

```
PUT https://{Endpoint}/v3/{project_id}/vpc/firewalls/e9a7731d-5bd9-4250-a524-b9a076fd5629/insert-rules

{
  "firewall" : {
    "egress_rules" : [ {
      "name" : "network_acl_rule test 2",
      "description" : "network_acl_rule test 2",
```

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```
    "action" : "allow",
    "protocol" : "tcp",
    "ip_version" : "4",
    "source_ip_address" : "192.168.22.0/24",
    "destination_ip_address" : "192.168.27.0/24",
    "source_port" : "30-40,60-90",
    "destination_port" : "40-60,70-90",
    "source_address_group_id" : null,
    "destination_address_group_id" : null
   } ],
   "insert_after_rule" : "f9a7731d-5bd9-4250-a524-b9a076fd5629"
  }
}
```

Example Responses

Status code: 200

Normal response to the PUT operation. For more status codes, see **Status Codes**.

```
{
  "firewall" : {
    "id" : "e9a7731d-5bd9-4250-a524-b9a076fd5629",
    "name" : "network_acl_test1",
    "description" : "network_acl_test1",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "created_at" : "2022-04-07T07:30:46.000+00:00",
    "updated_at" : "2022-04-07T07:30:46.000+00:00",
    "admin_state_up" : true,
    "enterprise_project_id" : "158ad39a-dab7-45a3-9b5a-2836b3cf93f9",
    "status" : "ACTIVE",
    "tags" : [ ],
    "ingress_rules" : [ {
      "id" : "774cf578-e70d-ec11-a40c-b864b1cf74ea",
      "name" : "network_acl_rule test",
      "description" : "network_acl_rule test",
      "action" : "allow",
      "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
      "protocol" : "tcp",
      "ip_version" : 4,
      "source_ip_address" : "192.168.3.0/24",
      "destination_ip_address" : "192.168.6.0/24",
      "source_port" : "30-40,60-90",
      "destination_port" : "40-60,70-90"
    }, {
      "id" : "8cdd7975-3124-c8cf-1046-2255714f44a7",
      "name" : "network_acl_rule test 2",
      "description" : "network_acl_rule test 2",
      "action" : "allow",
      "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
      "protocol" : "tcp",
      "ip_version" : 4,
      "source_ip_address" : "192.168.12.0/24",
      "destination_ip_address" : "192.168.17.0/24",
      "source_port" : "30-40,60-90",
      "destination_port" : "40-60,70-90"
    } ],
    "egress_rules" : [ {
      "id" : "f9a7731d-5bd9-4250-a524-b9a076fd5629",
      "name" : "network_acl_rule test",
      "description" : "network_acl_rule test",
      "action" : "allow",
      "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
      "protocol" : "tcp",
      "ip_version" : 4,
      "source_ip_address" : "192.168.3.0/24",
      "destination_ip_address" : "192.168.6.0/24",
      "source_port" : "30-40,60-90",
      "destination_port" : "40-60,70-90"
```


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```
  }, {
    "id" : "f223851e-c5a3-9761-294a-9ad9f548c105",
    "name" : "network_acl_rule test 2",
    "description" : "network_acl_rule test 2",
    "action" : "allow",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "protocol" : "tcp",
    "ip_version" : 4,
    "source_ip_address" : "192.168.22.0/24",
    "destination_ip_address" : "192.168.27.0/24",
    "source_port" : "30-40,60-90",
    "destination_port" : "40-60,70-90"
  } ],
  "associations" : [ {
    "virsubnet_id" : "8359e5b0-353f-4ef3-a071-98e67a34a143"
  } ]
 }
}
```

Status Codes

Status Code	Description
200	Normal response to the PUT operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.6.8 Deleting a Network ACL Rule

Function

This API is used to delete a network ACL rule that is no longer required.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/vpc/firewalls/{firewall_id}/remove-rules

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Table 5-191 Path Parameters

Parameter	Mandatory	Type	Description
firewall_id	Yes	String	**Definition**: Network ACL ID. You can call the API **Querying Network ACLs** to obtain the ID of the target network ACL, and then use this API to delete network ACL rules. **Range**: N/A
project_id	Yes	String	**Definition**: ID of the project that the network ACL belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

Table 5-192 Request body parameters

Parameter	Mandatory	Type	Description
firewall	Yes	**FirewallRemoveRuleOption** object	**Definition**: Request body for removing a network ACL rule. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • true: A check request will be sent and no network ACL rule will be deleted. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • false: A request will be sent and a network ACL rule will be deleted. **Default Value**: false

Table 5-193 FirewallRemoveRuleOption

Parameter	Mandatory	Type	Description
ingress_rules	No	Array of **FirewallRemoveRuleItemOption** objects	**Definition**: Inbound network ACL rules to be deleted. **Constraints**: Either **ingress_rules** or **egress_rules** can be specified. That is, either the inbound or outbound rules can be specified for deleting rules. **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
egress_rules	No	Array of **FirewallRemoveRuleItemOption** objects	**Definition**: Outbound network ACL rules to be deleted. **Constraints**: Either **ingress_rules** or **egress_rules** can be specified. That is, either the inbound or outbound rules can be specified for deleting rules. **Range**: N/A **Default Value**: N/A

Table 5-194 FirewallRemoveRuleItemOption

Parameter	Mandatory	Type	Description
id	Yes	String	**Definition**: ID of the network ACL rule to be deleted. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

Response Parameters

Status code: 200

Table 5-195 Response body parameters

Parameter	Type	Description
firewall	**FirewallDetail** object	Details after a network ACL rule is deleted.
request_id	String	Request ID.

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Table 5-196 FirewallDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL ID. Each network ACL comes with an ID, which uniquely identifies the network ACL. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Name of the network ACL. **Range**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
project_id	String	**Definition**: ID of the project that the network ACL belongs to. **Range**: N/A
created_at	String	**Definition**: Time when the network ACL was created. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
updated_at	String	**Definition**: Time when the network ACL was last updated. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.

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Parameter	Type	Description
admin_state_up	Boolean	**Definition**: Network ACL administrative status. **Range** • true: The network ACL is enabled. • false: The network ACL is disabled.
status	String	**Definition**: Network ACL status. **Range** • ACTIVE: The network ACL is associated with a subnet. • INACTIVE: The network ACL is not associated with a subnet.
enterprise_project_id	String	**Definition**: ID of the enterprise project that the network ACL belongs to. **Range**: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.
tags	Array of **ResponseTag** objects	**Definition**: Tags of a network ACL, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
associations	Array of **FirewallAssociation** objects	**Definition**: Subnets associated with the network ACL. **Range**: N/A
ingress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL inbound rules. **Range**: N/A

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Parameter	Type	Description
egress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL outbound rules. **Range**: N/A

Table 5-197 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-198 FirewallAssociation

Parameter	Type	Description
virsubnet_id	String	**Definition**: ID of the subnet associated with the network ACL. **Range**: • If the network ACL type is normal, it can only be associated with common subnets. • If the network ACL type is CloudDCN, it can only be associated with CloudDCN subnets.

Table 5-199 FirewallRuleDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL rule ID. Each network ACL rule comes with an ID, which uniquely identifies the network ACL rule. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Network ACL rule name. **Range**: The value can contain 0 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL rule. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
action	String	**Definition**: Whether a network ACL rule allows or denies traffic. **Range**: ● allow: A network ACL rule allows traffic. ● deny: A network ACL rule denies traffic.
project_id	String	**Definition**: ID of the project that the network ACL rule belongs to. **Range**: N/A
protocol	String	**Definition**: Communication protocol of a network ACL rule. **Range**: ● tcp ● udp ● icmp ● icmpv6 ● IP protocol number (0-255) ● any: any protocol
ip_version	Integer	**Definition**: IP address version of a network ACL rule. **Range**: ● 4: IPv4 network ACL rule. ● 6: IPv6 network ACL rule.
source_ip_address	String	**Definition**: Source IP address or source IP address range of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_ip_address	String	**Definition**: Destination IP address or destination IP address range of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
source_port	String	**Definition**: Source port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
destination_port	String	**Definition**: Destination port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
source_address_group_id	String	**Definition**: ID of the source IP address group of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_address_group_id	String	**Definition**: ID of the destination IP address group of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
enabled	Boolean	**Definition**: Whether a network ACL rule is enabled. **Range**: • true: (default value) A network ACL rule is enabled. • false: A network ACL rule is disabled.

Example Requests

Delete the inbound rule whose ID is 774cf578-e70d-ec11-a40c-b864b1cf74ea from the network ACL whose ID is e9a7731d-5bd9-4250-a524-b9a076fd5629.

```
PUT /v3/{project_id}/vpc/firewalls/e9a7731d-5bd9-4250-a524-b9a076fd5629/remove-rules

{
  "firewall" : {
    "ingress_rules" : [ {
      "id" : "774cf578-e70d-ec11-a40c-b864b1cf74ea"
    } ]
  }
}
```

Example Responses

Status code: 200

Normal response to the PUT operation. For more status codes, see **Status Codes**.

```
{
  "firewall" : {
    "id" : "e9a7731d-5bd9-4250-a524-b9a076fd5629",
    "name" : "network_acl_test1",
    "description" : "network_acl_test1",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "created_at" : "2022-04-07T07:30:46.000+00:00",
    "updated_at" : "2022-04-07T07:30:46.000+00:00",
    "admin_state_up" : true,
    "enterprise_project_id" : "158ad39a-dab7-45a3-9b5a-2836b3cf93f9",
    "status" : "ACTIVE",
    "tags" : [ ],
    "ingress_rules" : [ ],
    "egress_rules" : [ {
      "id" : "f9a7731d-5bd9-4250-a524-b9a076fd5629",
      "name" : "network_acl_rule test",
```


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```
    "description" : "network_acl_rule test",
    "action" : "allow",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "protocol" : "tcp",
    "ip_version" : 4,
    "source_ip_address" : "192.168.3.0/24",
    "destination_ip_address" : "192.168.6.0/24",
    "source_port" : "30-40,60-90",
    "destination_port" : "40-60,70-90"
   } ],
   "associations" : [ {
    "virsubnet_id" : "8359e5b0-353f-4ef3-a071-98e67a34a143"
   } ]
  }
}
```

Status Codes

Status Code	Description
200	Normal response to the PUT operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.6.9 Associating a Subnet with a Network ACL

Function

This API is used to associate a network ACL with a subnet to control the inbound and outbound traffic of the subnet.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/vpc/firewalls/{firewall_id}/associate-subnets

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Table 5-200 Path Parameters

Parameter	Mandatory	Type	Description
firewall_id	Yes	String	**Definition**: Network ACL ID. You can call the API **Querying Network ACLs** to obtain the ID of the target network ACL, and then use this API to associate the network ACL with a subnet. **Range**: N/A
project_id	Yes	String	**Definition**: ID of the project that the network ACL belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

Table 5-201 Request body parameters

Parameter	Mandatory	Type	Description
subnets	Yes	Array of **RequestFirewallAssociation** objects	**Definition**: Request body for associating a network ACL with a subnet. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • true: A check request will be sent and no network ACL will be associated with the subnet. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • false: A request will be sent and a network ACL will be associated with the subnet. **Default Value**: false

Table 5-202 RequestFirewallAssociation

Parameter	Mandatory	Type	Description
virsubnet_id	Yes	String	**Definition**: ID of the subnet associated with the network ACL. **Constraints**: If the network ACL type is normal, it can only be associated with common subnets. If the network ACL type is CloudDCN, it can only be associated with CloudDCN subnets. **Range**: N/A **Range**: N/A

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Response Parameters

Status code: 200

Table 5-203 Response body parameters

Parameter	Type	Description
firewall	**FirewallDetail** object	**Definition**: Response body for associating a network ACL with a subnet. **Range**: N/A
request_id	String	**Definition**: Request ID. **Range**: N/A

Table 5-204 FirewallDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL ID. Each network ACL comes with an ID, which uniquely identifies the network ACL. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Name of the network ACL. **Range**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
project_id	String	**Definition**: ID of the project that the network ACL belongs to. **Range**: N/A
created_at	String	**Definition**: Time when the network ACL was created. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
updated_at	String	**Definition**: Time when the network ACL was last updated. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
admin_state_up	Boolean	**Definition**: Network ACL administrative status. **Range** ● true: The network ACL is enabled. ● false: The network ACL is disabled.
status	String	**Definition**: Network ACL status. **Range** ● ACTIVE: The network ACL is associated with a subnet. ● INACTIVE: The network ACL is not associated with a subnet.
enterprise_project_id	String	**Definition**: ID of the enterprise project that the network ACL belongs to. **Range**: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.

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Parameter	Type	Description
tags	Array of **ResponseTag** objects	**Definition**: Tags of a network ACL, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
associations	Array of **FirewallAssociation** objects	**Definition**: Subnets associated with the network ACL. **Range**: N/A
ingress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL inbound rules. **Range**: N/A
egress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL outbound rules. **Range**: N/A

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Table 5-205 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-206 FirewallAssociation

Parameter	Type	Description
virsubnet_id	String	**Definition**: ID of the subnet associated with the network ACL. **Range**: • If the network ACL type is normal, it can only be associated with common subnets. • If the network ACL type is CloudDCN, it can only be associated with CloudDCN subnets.

Table 5-207 FirewallRuleDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL rule ID. Each network ACL rule comes with an ID, which uniquely identifies the network ACL rule. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Network ACL rule name. **Range**: The value can contain 0 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL rule. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
action	String	**Definition**: Whether a network ACL rule allows or denies traffic. **Range**: ● allow: A network ACL rule allows traffic. ● deny: A network ACL rule denies traffic.
project_id	String	**Definition**: ID of the project that the network ACL rule belongs to. **Range**: N/A
protocol	String	**Definition**: Communication protocol of a network ACL rule. **Range**: ● tcp ● udp ● icmp ● icmpv6 ● IP protocol number (0-255) ● any: any protocol
ip_version	Integer	**Definition**: IP address version of a network ACL rule. **Range**: ● 4: IPv4 network ACL rule. ● 6: IPv6 network ACL rule.
source_ip_address	String	**Definition**: Source IP address or source IP address range of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_ip_address	String	**Definition**: Destination IP address or destination IP address range of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
source_port	String	**Definition**: Source port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
destination_port	String	**Definition**: Destination port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
source_address_group_id	String	**Definition**: ID of the source IP address group of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_address_group_id	String	**Definition**: ID of the destination IP address group of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
enabled	Boolean	**Definition**: Whether a network ACL rule is enabled. **Range**: • true: (default value) A network ACL rule is enabled. • false: A network ACL rule is disabled.

Example Requests

Associate the subnet whose ID is **8359e5b0-353f-4ef3-a071-98e67a34a143** with the network ACL whose ID is **e9a7731d-5bd9-4250-a524-b9a076fd5629**.

```
PUT https://{Endpoint}/v3/{project_id}/vpc/firewalls/e9a7731d-5bd9-4250-a524-b9a076fd5629/associate-subnets

{
  "subnets" : [ {
    "virsubnet_id" : "8359e5b0-353f-4ef3-a071-98e67a34a143"
  } ]
}
```

Example Responses

Status code: 200

Normal response to the PUT operation. For more status codes, see **Status Codes**.

```
{
  "firewall" : {
    "id" : "e9a7731d-5bd9-4250-a524-b9a076fd5629",
    "name" : "network_acl_test1",
    "description" : "network_acl_test1",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "created_at" : "2022-04-07T07:30:46.000+00:00",
    "updated_at" : "2022-04-07T07:30:46.000+00:00",
    "admin_state_up" : true,
    "enterprise_project_id" : "158ad39a-dab7-45a3-9b5a-2836b3cf93f9",
    "status" : "ACTIVE",
    "tags" : [ ],
    "ingress_rules" : [ {
      "id" : "774cf578-e70d-ec11-a40c-b864b1cf74ea",
      "name" : "network_acl_rule test",
      "description" : "network_acl_rule test",
      "action" : "allow",
```


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```
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "protocol" : "tcp",
    "ip_version" : 4,
    "source_ip_address" : "192.168.3.0/24",
    "destination_ip_address" : "192.168.6.0/24",
    "source_port" : "30-40,60-90",
    "destination_port" : "40-60,70-90"
   } ],
   "egress_rules" : [ {
    "id" : "f9a7731d-5bd9-4250-a524-b9a076fd5629",
    "name" : "network_acl_rule test",
    "description" : "network_acl_rule test",
    "action" : "allow",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "protocol" : "tcp",
    "ip_version" : 4,
    "source_ip_address" : "192.168.3.0/24",
    "destination_ip_address" : "192.168.6.0/24",
    "source_port" : "30-40,60-90",
    "destination_port" : "40-60,70-90"
   } ],
   "associations" : [ {
    "virsubnet_id" : "8359e5b0-353f-4ef3-a071-98e67a34a143"
   } ]
  }
}
```


Status Codes

Status Code	Description
200	Normal response to the PUT operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.6.10 Disassociating a Subnet from a Network ACL

Function

This API is used to disassociate a network ACL from a subnet if the network ACL is not required to control the inbound and outbound traffic of the subnet.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/vpc/firewalls/{firewall_id}/disassociate-subnets

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Table 5-208 Path Parameters

Parameter	Mandatory	Type	Description
firewall_id	Yes	String	**Definition**: Network ACL ID. You can call the API **Querying Network ACLs** to obtain the ID of the target network ACL, and then use this API to disassociate the network ACL from a subnet. **Range**: N/A
project_id	Yes	String	**Definition**: ID of the project that the network ACL belongs to. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

Table 5-209 Request body parameters

Parameter	Mandatory	Type	Description
subnets	Yes	Array of **FirewallAssociation** objects	**Definition**: Request body for disassociating a network ACL with a subnet. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • true: A check request will be sent and no network ACL will be disassociated with the subnet. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • false: A request will be sent and a network ACL will be disassociated with the subnet. **Default Value**: false

Table 5-210 FirewallAssociation

Parameter	Mandatory	Type	Description
virsubnet_id	Yes	String	**Definition**: ID of the subnet associated with the network ACL. **Range**: • If the network ACL type is normal, it can only be associated with common subnets. • If the network ACL type is CloudDCN, it can only be associated with CloudDCN subnets.

Response Parameters

Status code: 200

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Table 5-211 Response body parameters

Parameter	Type	Description
firewall	**FirewallDetail** object	**Definition**: Response body for disassociating a network ACL with a subnet. **Range**: N/A
request_id	String	**Definition**: Request ID. **Range**: N/A

Table 5-212 FirewallDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL ID. Each network ACL comes with an ID, which uniquely identifies the network ACL. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Name of the network ACL. **Range**: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
project_id	String	**Definition**: ID of the project that the network ACL belongs to. **Range**: N/A
created_at	String	**Definition**: Time when the network ACL was created. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
updated_at	String	**Definition**: Time when the network ACL was last updated. The value is automatically generated by the system. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ssZ*.
admin_state_up	Boolean	**Definition**: Network ACL administrative status. **Range** ● true: The network ACL is enabled. ● false: The network ACL is disabled.
status	String	**Definition**: Network ACL status. **Range** ● ACTIVE: The network ACL is associated with a subnet. ● INACTIVE: The network ACL is not associated with a subnet.
enterprise_project_id	String	**Definition**: ID of the enterprise project that the network ACL belongs to. **Range**: The value is **0** or a string that contains a maximum of 36 characters in UUID format with hyphens (-). **0** indicates the default enterprise project.

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Parameter	Type	Description
tags	Array of **ResponseTag** objects	**Definition**: Tags of a network ACL, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
associations	Array of **FirewallAssociation** objects	**Definition**: Subnets associated with the network ACL. **Range**: N/A
ingress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL inbound rules. **Range**: N/A
egress_rules	Array of **FirewallRuleDetail** objects	**Definition**: Network ACL outbound rules. **Range**: N/A

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Table 5-213 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Table 5-214 FirewallAssociation

Parameter	Type	Description
virsubnet_id	String	**Definition**: ID of the subnet associated with the network ACL. **Range**: • If the network ACL type is normal, it can only be associated with common subnets. • If the network ACL type is CloudDCN, it can only be associated with CloudDCN subnets.

Table 5-215 FirewallRuleDetail

Parameter	Type	Description
id	String	**Definition**: Network ACL rule ID. Each network ACL rule comes with an ID, which uniquely identifies the network ACL rule. **Range**: The value is in UUID format with hyphens (-).
name	String	**Definition**: Network ACL rule name. **Range**: The value can contain 0 to 255 characters, including letters, digits, underscores (_), hyphens (-), and periods.
description	String	**Definition**: Supplementary information about the network ACL rule. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).

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Parameter	Type	Description
action	String	**Definition**: Whether a network ACL rule allows or denies traffic. **Range**: ● allow: A network ACL rule allows traffic. ● deny: A network ACL rule denies traffic.
project_id	String	**Definition**: ID of the project that the network ACL rule belongs to. **Range**: N/A
protocol	String	**Definition**: Communication protocol of a network ACL rule. **Range**: ● tcp ● udp ● icmp ● icmpv6 ● IP protocol number (0-255) ● any: any protocol
ip_version	Integer	**Definition**: IP address version of a network ACL rule. **Range**: ● 4: IPv4 network ACL rule. ● 6: IPv6 network ACL rule.
source_ip_address	String	**Definition**: Source IP address or source IP address range of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_ip_address	String	**Definition**: Destination IP address or destination IP address range of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
source_port	String	**Definition**: Source port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
destination_port	String	**Definition**: Destination port of a network ACL rule. **Range**: ● Individual port: for example, 22 ● Consecutive ports: for example, 22-30 ● Non-consecutive ports: ports and port ranges, such as **22,23-30**. You can specify up to 20 port ranges. Port ranges cannot overlap. ● All ports: Leave it empty or enter 1-65535.
source_address_group_id	String	**Definition**: ID of the source IP address group of a network ACL rule. **Range**: **source_ip_address** and **source_address_group_id** cannot be specified at the same time.

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Parameter	Type	Description
destination_address_group_id	String	**Definition**: ID of the destination IP address group of a network ACL rule. **Range**: **destination_ip_address** and **destination_address_group_id** cannot be specified at the same time.
enabled	Boolean	**Definition**: Whether a network ACL rule is enabled. **Range**: • true: (default value) A network ACL rule is enabled. • false: A network ACL rule is disabled.

Example Requests

Disassociate subnets whose IDs are **8359e5b0-353f-4ef3-a071-98e67a34a143** and **d9994dcf-ef6d-47ec-9ac9-a62d4fd5e163** from the network ACL whose ID is **e9a7731d-5bd9-4250-a524-b9a076fd5629**.

```
PUT https://{Endpoint}/v3/{project_id}/vpc/firewalls/e9a7731d-5bd9-4250-a524-b9a076fd5629/disassociate-subnets

{
  "subnets" : [ {
    "virsubnet_id" : "8359e5b0-353f-4ef3-a071-98e67a34a143"
  }, {
    "virsubnet_id" : "d9994dcf-ef6d-47ec-9ac9-a62d4fd5e163"
  } ]
}
```

Example Responses

Status code: 200

Normal response to the PUT operation. For more status codes, see **Status Codes**.

```
{
  "firewall" : {
    "id" : "e9a7731d-5bd9-4250-a524-b9a076fd5629",
    "name" : "network_acl_test1",
    "description" : "network_acl_test1",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "created_at" : "2022-04-07T07:30:46.000+00:00",
    "updated_at" : "2022-04-07T07:30:46.000+00:00",
    "admin_state_up" : true,
    "enterprise_project_id" : "158ad39a-dab7-45a3-9b5a-2836b3cf93f9",
    "status" : "INACTIVE",
    "tags" : [ ],
    "ingress_rules" : [ {
      "id" : "774cf578-e70d-ec11-a40c-b864b1cf74ea",
```


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```
    "name" : "network_acl_rule test",
    "description" : "network_acl_rule test",
    "action" : "allow",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "protocol" : "tcp",
    "ip_version" : 4,
    "source_ip_address" : "192.168.3.0/24",
    "destination_ip_address" : "192.168.6.0/24",
    "source_port" : "30-40,60-90",
    "destination_port" : "40-60,70-90"
   } ],
   "egress_rules" : [ {
    "id" : "f9a7731d-5bd9-4250-a524-b9a076fd5629",
    "name" : "network_acl_rule test",
    "description" : "network_acl_rule test",
    "action" : "allow",
    "project_id" : "9476ea5a8a9849c38358e43c0c3a9e12",
    "protocol" : "tcp",
    "ip_version" : 4,
    "source_ip_address" : "192.168.3.0/24",
    "destination_ip_address" : "192.168.6.0/24",
    "source_port" : "30-40,60-90",
    "destination_port" : "40-60,70-90"
   } ],
   "associations" : [ ]
  }
}
```


Status Codes

Status Code	Description
200	Normal response to the PUT operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.7 Port

5.7.1 Adding a Security Group to the Security Group List of a Port

Function

This API is used to insert a new security group into the security group list of an elastic network interface, that is, associate a new security group with the elastic network interface.

Calling Method

For details, see **Calling APIs**.

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URI

PUT /v3/{project_id}/ports/{port_id}/insert-security-groups

Table 5-216 Path Parameters

Parameter	Mandatory	Type	Description
port_id	Yes	String	**Definition**: Port ID, which can be the ID of an elastic network interface. **Range**: N/A
project_id	Yes	String	**Definition**: Project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

Request Parameters

Table 5-217 Request body parameters

Parameter	Mandatory	Type	Description
port	Yes	**InsertSecurityGroupOption** object	**Definition**: Request body for adding a security group to a security group list of a port. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Parameter	Mandatory	Type	Description
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • true: A check request will be sent and no security group will be added to the security group list of a port. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • false: A request will be sent and a security group will be added to the security group list of a port. **Default Value**: false

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Table 5-218 InsertSecurityGroupOption

Parameter	Mandatory	Type	Description
security_groups	Yes	Array of strings	**Definition**: IDs of security groups to be inserted, for example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. You can call the API **Querying Security Groups** to obtain the ID of the target security group, and then use this API to associate the security group to the elastic network interface. **Constraints**: N/A **Range**: N/A **Default Value**: N/A
index	No	Integer	**Definition**: Position that a security group is added to. The value starts from **0**. For example: 1. To add a security group to the top of the associated security group list, set **index** to **0**. 2. To add a security group after the *n*th security group in the associated security group list, set **index** to *n*. By default, a security group is added to the end of the security group list associated with the port. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Response Parameters

Status code: 200

Table 5-219 Response body parameters

Parameter	Type	Description
request_id	String	**Definition**: Request ID. **Range**: N/A
port	**Port** object	**Definition**: Response body for adding a security group to a security group list of a port. **Range**: N/A

Table 5-220 Port

Parameter	Type	Description
admin_state_up	Boolean	**Definition**: Administrative state of this port. **Range**: The value can be **true** (default) or **false**
binding:host_id	String	**Definition**: ID of the host where the port is located. **Range**: N/A
binding:profile	Object	**Definition**: User-defined information of the port. **Range**: N/A
binding:vif_details	**binding:vif_details** object	**Definition**: Detailed information about the VIF. **Range**: N/A

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Parameter	Type	Description
binding:vif_type	String	**Definition**: Interface type of the port. The value can be **ovs**, **hw_veb**, or others. This is an extended attribute. **Range**: N/A
binding:vnic_type	String	**Definition**: Type of the bound vNIC. **Range**: • normal: softswitch. • direct: SR-IOV PCIe passthrough (not supported). • baremetal: used for bare metal servers.
created_at	String	**Definition**: Time when the port was created. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ss*.
updated_at	String	**Definition**: Time when the port was last updated. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ss*.
description	String	**Definition**: Port description. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
device_id	String	**Definition**: ID of the device that the port belongs to. **Range**: The value is in UUID format with hyphens (-).

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Parameter	Type	Description
device_owner	String	**Definition**: Name of the device that the port belongs to. **Range**: • network:dhcp: DHCP service • network:router_interface_distributed: Subnet gateway address • compute:xxx: Private IP address of a cloud server network interface. *XXX* specifies the AZ name. For example, **compute:aa-bb-cc** indicates that the private IP address is used by a cloud server in the AZ aa-bb-cc. • neutron:VIP_PORT: Virtual IP address • neutron:LOADBALANCERV2: Shared load balancer • neutron:LOADBALANCERV3: Dedicated load balancer • network:endpoint_interface: VPC endpoint • network:nat_gateway: NAT gateway • network:ucmp: UCMP port, which is used by Enterprise Router.
ecs_flavor	String	**Definition**: Flavor of the ECS that the port belongs to. **Range**: N/A
id	String	**Definition**: Port ID. **Range**: The value is in UUID format with hyphens (-).
instance_id	String	**Definition**: ID of the instance that the port belongs to, for example, RDS instance ID. **Range**: N/A

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Parameter	Type	Description
instance_type	String	**Definition**: The type of instance that the port belongs to, for example, RDS. **Range**: N/A
mac_address	String	**Definition**: MAC address of the port. **Range**: N/A
name	String	**Definition**: Port name. **Range**: The value can contain no more than 255 characters. This parameter is left blank by default.
port_security_enabled	Boolean	**Definition**: Whether the security option is enabled for a port. If the option is not enabled, the security group and DHCP snooping do not take effect. **Range**: • true: The security option is enabled for a port. • false: The security option is not enabled for a port.
private_ips	Array of **PrivateIpInfo** objects	**Definition**: Private IP address of a port. **Range**: N/A
project_id	String	**Definition**: ID of the project that the port belongs to. **Range**: N/A
security_groups	Array of strings	**Definition**: Security groups bound to a port. **Range**: N/A

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Parameter	Type	Description
status	String	**Definition**: Port status. **Range**: • ACTIVE: The port is active and can be used for communications. • BUILD: The port is being created or configured. • DOWN: The port is inactive and cannot be used for communications. The status of a HANA SR-IOV VM port is always **DOWN**.
tenant_id	String	**Definition**: ID of the tenant that the port belongs to. **Range**: N/A
virsubnet_id	String	**Definition**: ID of the virtual subnet that the port belongs to. **Range**: The value is in UUID format with hyphens (-).
vpc_id	String	**Definition**: ID of the VPC that the port belongs to. **Range**: The value is in UUID format with hyphens (-).
vpc_tenant_id	String	**Definition**: Tenant ID of the VPC that the port belongs to. **Range**: N/A
vtep_ip	String	**Definition**: VTEP IP address of the port, that is, the IP address of the virtual tunnel endpoint. **Range**: N/A

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Parameter	Type	Description
enable_efi	Boolean	**Definition**: Whether to enable **efi**. If **efi** is enabled, the port supports vRoCE. **Range**: • true: **efi** is enabled. • false: **efi** is disabled.
scope	String	**Definition**: Scope of the subnet where the port is located (edge cloud scenario). **Range**: • center: The subnet is in a central AZ. • {publicBorderGroup}: The subnet is in a public border group. The public border group limits the AZs of a subnet but it can have multiple edge AZs associated.
zone_id	String	**Definition**: ID of the AZ that the port belongs to. **Range**: N/A
binding:migration_info	Object	**Definition**: Information about the destination node where the port is migrated, including **binding:vif_details** and **binding:vif_type** of the destination node. **Range**: N/A
extra_dhcp_opts	Array of **ExtraDhcpOpt** objects	**Definition**: Extended DHCP attributes. **Range**: N/A
position_type	String	**Definition**: Location type of the port in the edge scenario. **Range**: Default Value: **center**

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Parameter	Type	Description
instance_info	Object	**Definition**: Information about the instance with the port bound. **Range**: N/A
tags	Array of **ResponseTag** objects	**Definition**: Tags of a port, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A
allowed_address_pairs	Array of **AllowedAddressPair** objects	**Definition**: IP address and MAC address pairs of the port. **Range**: • The IP address cannot be **0.0.0.0/0**. • Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.

Table 5-221 binding:vif_details

Parameter	Type	Description
primary_interface	Boolean	**Definition**: Whether this is the primary network interface of the cloud server. **Range**: • true: This is the primary network interface of the cloud server. • false: This is not the primary network interface of the cloud server.

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Parameter	Type	Description
port_filter	Boolean	**Definition**: Whether the network service provides port filtering features, such as security groups and anti-MAC/IP spoofing. **Range**: • true: The network service provides port filtering features. • false: The network service does not provide port filtering features.
ovs_hybrid_plug	Boolean	**Definition**: Whether the OVS/bridge hybrid mode is used. **Range**: • true: The OVS/bridge hybrid mode is used. • false: The OVS/bridge hybrid mode is not used.

Table 5-222 PrivateIpInfo

Parameter	Type	Description
subnet_cidr_id	String	**Definition**: ID of the subnet where a port works. **Range**: N/A
ip_address	String	**Definition**: Private IP address of a port. **Range**: N/A

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Table 5-223 ExtraDhcpOpt

Parameter	Type	Description
opt_name	String	**Definition**: DHCP attribute name. Name of additional control information or network configuration parameter transmitted when the DHCP server allocates IP addresses to clients. **Range**: N/A
opt_value	String	**Definition**: DHCP attribute value. Value of additional control information or network configuration parameter transmitted when the DHCP server allocates IP addresses to clients. **Range**: N/A

Table 5-224 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Parameter	Type	Description
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

Table 5-225 AllowedAddressPair

Parameter	Type	Description
ip_address	String	**Definition**: IP address. **Constraints**: Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. **Range**: Single IP address, for example, 192.168.21.25 A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A
mac_address	String	**Definition**: MAC address. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Example Requests

Add a security group above the first security group (**567be4e3-d171-46ce-9e8a-c15e91cfe86a**) to the security group list (**["567be4e3-d171-46ce-9e8a-c15e91cfe86a", "4940b983-5992-4663-bed9-d1d1e15d1009"]**) associated with the port (**99fd0c77-56b4-4bf6-8365-df352e45d5fc**). Set **index** to **1**.

```
PUT https://{Endpoint}/v3/f5dab68cd75740e68c599e9af5fe0aed/ports/99fd0c77-56b4-4bf6-8365-df352e45d5fc/insert-security-groups

{
  "port" : {
    "security_groups" : [ "8edd3747-ccd4-49a1-82b9-a165eec314b4", "6c2d4540-3b7d-4207-a319-a7231b439995" ],
    "index" : 1
  }
}
```

Example Responses

Status code: 200

Normal response to the PUT operation. For more status codes, see **Status Codes**.

```
{
  "port" : {
    "name" : "",
    "id" : "99fd0c77-56b4-4bf6-8365-df352e45d5fc",
    "admin_state_up" : true,
    "status" : "DOWN",
    "project_id" : "f5dab68cd75740e68c599e9af5fe0aed",
    "device_id" : "",
    "mac_address" : "fa:16:3e:1f:17:df",
    "device_owner" : "",
    "description" : "",
    "zone_id" : "",
    "scope" : "center",
    "position_type" : "center",
    "created_at" : "2023-05-10T01:35:02.000+00:00",
    "updated_at" : "2023-05-10T01:35:02.000+00:00",
    "port_security_enabled" : true,
    "tags" : [ ],
    "security_groups" : [ "567be4e3-d171-46ce-9e8a-c15e91cfe86a", "8edd3747-ccd4-49a1-82b9-a165eec314b4", "6c2d4540-3b7d-4207-a319-a7231b439995", "4940b983-5992-4663-bed9-d1d1e15d1009" ],
    "allowed_address_pairs" : [ ],
    "extra_dhcp_opts" : [ ],
    "instance_id" : "",
    "instance_type" : "",
    "ecs_flavor" : "",
    "enable_efi" : false,
    "virsubnet_id" : "3847b263-2370-45c0-8236-38a1de568049",
    "private_ips" : [ {
      "subnet_cidr_id" : "ffe98087-6d4f-45cd-988b-1c87f75d2d53",
      "ip_address" : "192.168.158.228"
    } ],
    "binding:host_id" : "",
    "binding:vif_type" : "unbound",
    "binding:vnic_type" : "normal",
    "binding:vif_details" : { },
    "binding:profile" : { },
    "binding:migration_info" : { }
  },
  "request_id" : "458691c0-7db2-43d8-9400-053800c5ff53"
}
```


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Status Codes

Status Code	Description
200	Normal response to the PUT operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

5.7.2 Removing a Security Group from the Security Group List of a Port

Function

This API is used to remove security groups from the security group list associated with the elastic network interface.

Calling Method

For details, see **Calling APIs**.

URI

PUT /v3/{project_id}/ports/{port_id}/remove-security-groups

Table 5-226 Path Parameters

Parameter	Mandatory	Type	Description
port_id	Yes	String	**Definition**: Port ID, which can be the ID of an elastic network interface. **Range**: N/A
project_id	Yes	String	**Definition**: Project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**. **Range**: N/A

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Request Parameters

Table 5-227 Request body parameters

Parameter	Mandatory	Type	Description
port	Yes	RemoveSecurityGroupOption object	**Definition**: Request body for removing a security group from a security group list of a port. **Constraints**: N/A **Range**: N/A **Default Value**: N/A
dry_run	No	Boolean	**Definition**: Whether to only check the request. **Constraints**: N/A **Range**: • true: A check request will be sent and no security group will be removed from the security group list of a port. Check items include mandatory parameters, request format, and constraints. If the check fails, an error will be returned. If the check succeeds, response code 202 will be returned. • false: A request will be sent and a security group will be removed from the security group list of a port. **Default Value**: false

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Table 5-228 RemoveSecurityGroupOption

Parameter	Mandatory	Type	Description
security_groups	Yes	Array of strings	**Definition**: IDs of security groups to be removed, for example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. You can call the API **Querying Security Groups** to obtain the ID of the target security group, and then use this API to remove the security groups from the security group list associated with the elastic network interface. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

Response Parameters

Status code: 200

Table 5-229 Response body parameters

Parameter	Type	Description
request_id	String	**Definition**: Request ID. **Range**: N/A
port	**Port** object	**Definition**: Response body for removing a security group from a security group list of a port **Range**: N/A

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Table 5-230 Port

Parameter	Type	Description
admin_state_up	Boolean	**Definition**: Administrative state of this port. **Range**: The value can be **true** (default) or **false**
binding:host_id	String	**Definition**: ID of the host where the port is located. **Range**: N/A
binding:profile	Object	**Definition**: User-defined information of the port. **Range**: N/A
binding:vif_details	**binding:vif_details** object	**Definition**: Detailed information about the VIF. **Range**: N/A
binding:vif_type	String	**Definition**: Interface type of the port. The value can be **ovs**, **hw_veb**, or others. This is an extended attribute. **Range**: N/A
binding:vnic_type	String	**Definition**: Type of the bound vNIC. **Range**: • normal: softswitch. • direct: SR-IOV PCIe passthrough (not supported). • baremetal: used for bare metal servers.
created_at	String	**Definition**: Time when the port was created. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ss*.

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Parameter	Type	Description
updated_at	String	**Definition**: Time when the port was last updated. **Range**: The value is a UTC time in the format of *yyyy-MM-ddTHH:mm:ss*.
description	String	**Definition**: Port description. **Range**: The value can contain 0 to 255 characters and cannot contain angle brackets (< or >).
device_id	String	**Definition**: ID of the device that the port belongs to. **Range**: The value is in UUID format with hyphens (-).
device_owner	String	**Definition**: Name of the device that the port belongs to. **Range**: ● network:dhcp: DHCP service ● network:router_interface_distributed: Subnet gateway address ● compute:xxx: Private IP address of a cloud server network interface. *XXX* specifies the AZ name. For example, **compute:aa-bb-cc** indicates that the private IP address is used by a cloud server in the AZ aa-bb-cc. ● neutron:VIP_PORT: Virtual IP address ● neutron:LOADBALANCERV2: Shared load balancer ● neutron:LOADBALANCERV3: Dedicated load balancer ● network:endpoint_interface: VPC endpoint ● network:nat_gateway: NAT gateway ● network:ucmp: UCMP port, which is used by Enterprise Router.

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Parameter	Type	Description
ecs_flavor	String	**Definition**: Flavor of the ECS that the port belongs to. **Range**: N/A
id	String	**Definition**: Port ID. **Range**: The value is in UUID format with hyphens (-).
instance_id	String	**Definition**: ID of the instance that the port belongs to, for example, RDS instance ID. **Range**: N/A
instance_type	String	**Definition**: The type of instance that the port belongs to, for example, RDS. **Range**: N/A
mac_address	String	**Definition**: MAC address of the port. **Range**: N/A
name	String	**Definition**: Port name. **Range**: The value can contain no more than 255 characters. This parameter is left blank by default.

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Parameter	Type	Description
port_security_enabled	Boolean	**Definition**: Whether the security option is enabled for a port. If the option is not enabled, the security group and DHCP snooping do not take effect. **Range**: • true: The security option is enabled for a port. • false: The security option is not enabled for a port.
private_ips	Array of **PrivateIpInfo** objects	**Definition**: Private IP address of a port. **Range**: N/A
project_id	String	**Definition**: ID of the project that the port belongs to. **Range**: N/A
security_groups	Array of strings	**Definition**: Security groups bound to a port. **Range**: N/A
status	String	**Definition**: Port status. **Range**: • ACTIVE: The port is active and can be used for communications. • BUILD: The port is being created or configured. • DOWN: The port is inactive and cannot be used for communications. The status of a HANA SR-IOV VM port is always **DOWN**.
tenant_id	String	**Definition**: ID of the tenant that the port belongs to. **Range**: N/A

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Parameter	Type	Description
virsubnet_id	String	**Definition**: ID of the virtual subnet that the port belongs to. **Range**: The value is in UUID format with hyphens (-).
vpc_id	String	**Definition**: ID of the VPC that the port belongs to. **Range**: The value is in UUID format with hyphens (-).
vpc_tenant_id	String	**Definition**: Tenant ID of the VPC that the port belongs to. **Range**: N/A
vtep_ip	String	**Definition**: VTEP IP address of the port, that is, the IP address of the virtual tunnel endpoint. **Range**: N/A
enable_efi	Boolean	**Definition**: Whether to enable **efi**. If **efi** is enabled, the port supports vRoCE. **Range**: ● true: **efi** is enabled. ● false: **efi** is disabled.
scope	String	**Definition**: Scope of the subnet where the port is located (edge cloud scenario). **Range**: ● center: The subnet is in a central AZ. ● {publicBorderGroup}: The subnet is in a public border group. The public border group limits the AZs of a subnet but it can have multiple edge AZs associated.

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Parameter	Type	Description
zone_id	String	**Definition**: ID of the AZ that the port belongs to. **Range**: N/A
binding:migration_info	Object	**Definition**: Information about the destination node where the port is migrated, including **binding:vif_details** and **binding:vif_type** of the destination node. **Range**: N/A
extra_dhcp_opts	Array of **ExtraDhcpOpt** objects	**Definition**: Extended DHCP attributes. **Range**: N/A
position_type	String	**Definition**: Location type of the port in the edge scenario. **Range**: Default Value: **center**
instance_info	Object	**Definition**: Information about the instance with the port bound. **Range**: N/A
tags	Array of **ResponseTag** objects	**Definition**: Tags of a port, including tag keys and tag values, which can be used to classify and identify resources. For details, see the tag objects. **Range**: N/A

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Parameter	Type	Description
allowed_address_pairs	Array of **AllowedAddressPair** objects	**Definition**: IP address and MAC address pairs of the port. **Range**: • The IP address cannot be **0.0.0.0/0**. • Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.

Table 5-231 binding:vif_details

Parameter	Type	Description
primary_interface	Boolean	**Definition**: Whether this is the primary network interface of the cloud server. **Range**: • true: This is the primary network interface of the cloud server. • false: This is not the primary network interface of the cloud server.
port_filter	Boolean	**Definition**: Whether the network service provides port filtering features, such as security groups and anti-MAC/IP spoofing. **Range**: • true: The network service provides port filtering features. • false: The network service does not provide port filtering features.

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Parameter	Type	Description
ovs_hybrid_plug	Boolean	**Definition**: Whether the OVS/bridge hybrid mode is used. **Range**: • true: The OVS/bridge hybrid mode is used. • false: The OVS/bridge hybrid mode is not used.

Table 5-232 PrivateIpInfo

Parameter	Type	Description
subnet_cidr_id	String	**Definition**: ID of the subnet where a port works. **Range**: N/A
ip_address	String	**Definition**: Private IP address of a port. **Range**: N/A

Table 5-233 ExtraDhcpOpt

Parameter	Type	Description
opt_name	String	**Definition**: DHCP attribute name. Name of additional control information or network configuration parameter transmitted when the DHCP server allocates IP addresses to clients. **Range**: N/A

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Parameter	Type	Description
opt_value	String	**Definition**: DHCP attribute value. Value of additional control information or network configuration parameter transmitted when the DHCP server allocates IP addresses to clients. **Range**: N/A

Table 5-234 ResponseTag

Parameter	Type	Description
key	String	**Definition**: Tag key. **Range**: • A tag key can contain a maximum of 128 Unicode characters and cannot be left blank. • Each tag key of a resource must be unique. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

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Parameter	Type	Description
value	String	**Definition**: Tag value. **Range**: • Each value can contain a maximum of 255 Unicode characters and can be left blank. • The value can contain: – Letters – Digits – Special characters: underscores (_), periods (.), colons (:), plus signs (+), hyphens (-), and equal signs (=) – Chinese characters

Table 5-235 AllowedAddressPair

Parameter	Type	Description
ip_address	String	**Definition**: IP address. **Constraints**: Configure a dedicated security group if a large CIDR block (subnet mask less than 24) is configured for parameter **allowed_address_pairs**. **Range**: Single IP address, for example, 192.168.21.25 A CIDR block, for example, 192.168.21.0/24 **Default Value**: N/A
mac_address	String	**Definition**: MAC address. **Constraints**: N/A **Range**: N/A **Default Value**: N/A

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Example Requests

Remove security groups (**8edd3747-ccd4-49a1-82b9-a165eec314b4** and **6c2d4540-3b7d-4207-a319-a7231b439995**) associated with the port (**99fd0c77-56b4-4bf6-8365-df352e45d5fc**).

```
PUT https://{Endpoint}/v3/f5dab68cd75740e68c599e9af5fe0aed/ports/99fd0c77-56b4-4bf6-8365-df352e45d5fc/remove-security-groups

{
  "port" : {
    "security_groups" : [ "8edd3747-ccd4-49a1-82b9-a165eec314b4", "6c2d4540-3b7d-4207-a319-a7231b439995" ]
  }
}
```

Example Responses

Status code: 200

Normal response to the PUT operation. For more status codes, see **Status Codes**.

```
{
  "port" : {
    "name" : "",
    "id" : "99fd0c77-56b4-4bf6-8365-df352e45d5fc",
    "admin_state_up" : true,
    "status" : "DOWN",
    "project_id" : "f5dab68cd75740e68c599e9af5fe0aed",
    "device_id" : "",
    "mac_address" : "fa:16:3e:1f:17:df",
    "device_owner" : "",
    "description" : "",
    "zone_id" : "",
    "scope" : "center",
    "position_type" : "center",
    "created_at" : "2023-05-10T01:35:02.000+00:00",
    "updated_at" : "2023-05-10T01:35:02.000+00:00",
    "port_security_enabled" : true,
    "tags" : [ ],
    "security_groups" : [ "567be4e3-d171-46ce-9e8a-c15e91cfe86a", "4940b983-5992-4663-bed9-d1d1e15d1009" ],
    "allowed_address_pairs" : [ ],
    "extra_dhcp_opts" : [ ],
    "instance_id" : "",
    "instance_type" : "",
    "ecs_flavor" : "",
    "enable_efi" : false,
    "virsubnet_id" : "3847b263-2370-45c0-8236-38a1de568049",
    "private_ips" : [ {
      "subnet_cidr_id" : "ffe98087-6d4f-45cd-988b-1c87f75d2d53",
      "ip_address" : "192.168.158.228"
    } ],
    "binding:host_id" : "",
    "binding:vif_type" : "unbound",
    "binding:vnic_type" : "normal",
    "binding:vif_details" : { },
    "binding:profile" : { },
    "binding:migration_info" : { }
  },
  "request_id" : "abd08c76-c853-4967-a898-12804330efab"
}
```


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Status Codes

Status Code	Description
200	Normal response to the PUT operation. For more status codes, see **Status Codes**.

Error Codes

See **Error Codes**.

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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 **version** objects	Specifies the API version list. For details, see **Table 6-2**.

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Table 6-2 version objects

Parameter	Type	Description
status	String	Specifies the API version status. Possible values are as follows: • **CURRENT** • **STABLE** • **DEPRECATED**
id	String	Specifies the API version.
links	Array of **link** objects	Specifies the link list. For details, see **Table 6-3**.

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**.

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6.1.2 Pagination

Function

Neutron APIs v2.0 provides the pagination function. You can set parameters **limit** and **marker** in the URL of the list request 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 **True** or **False**.

Example Request

- When **page_reverse** is set to **False**:

```
GET https://{Endpoint}/v2.0/networks?limit=2&marker=3d42a0d4-a980-4613-ae76-a2cddecff054&page_reverse=False
```

- When **page_reverse** is set to **True**:

```
GET https://{Endpoint}/v2.0/vpc/peerings?limit=2&marker=e5a0c88e-228e-4e62-a8b0-90825b1b7958&page_reverse=True
```


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Response Parameters

Table 6-5 Response parameter

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

Table 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. **next**: The next page is queried. **previous**: The previous page is queried.

Example Response

- When **page_reverse** is set to **False**:

```
{
   "networks": [
      {
         "status": "ACTIVE",
         "subnets": [],
         "name": "liudongtest ",
         "admin_state_up": false,
         "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
         "id": "60c809cb-6731-45d0-ace8-3bf5626421a9"
      },
      {
         "status": "ACTIVE",
         "subnets": [
            "132dc12d-c02a-4c90-9cd5-c31669aace04"
         ],
         "name": "publicnet",
         "admin_state_up": true,
         "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
         "id": "9daeac7c-a98f-430f-8e38-67f9c044e299"
      }
   ],
   "networks_links": [
```


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```
    {
        "href": "http://192.168.82.231:9696/v2.0/networks?limit=2&marker=9daeac7c-
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

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6.2.1 Querying Ports

Function

Queries all ports accessible to the tenant submitting the request. A maximum of 2,000 records can be returned for each query operation. If the number of records exceeds 2,000, the pagination marker will be returned.

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_address={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

Parameter	Mandatory	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	• Specifies the administrative state of the port that is used as the filter. • The value can be **true** or **false**.
network_id	No	String	Specifies the network ID that is used as the filter.
mac_address	No	String	Specifies the MAC address that is used as the filter.
device_id	No	String	Specifies the device ID that is used as the filter.
device_owner	No	String	Specifies the device owner that is used as the filter.

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Parameter	Mandatory	Type	Description
status	No	String	• Specifies the status of the port that is used as the filter. • The value can be **ACTIVE**, **BUILD**, or **DOWN**.
security_groups	No	Array of strings	Specifies the ID of the security group that is used as the filter.
fixed_ips	No	Array of strings	Filter by IP address of the port, that is **fixed_ips=ip_address={ip_address}** or **fixed_ips=subnet_id={subnet_id}**. Set *{ip_address}* to an IP address, for example, 192.168.21.22 or 2a07:b980:4030:14::1. Set *{subnet_id}* 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	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.

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

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 **port** objects	Specifies the port object list. For details, see **Table 6-9**.

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Parameter	Type	Description
ports_links	Array of **ports_link** objects	Specifies the pagination information. For details, see **Table 6-15**. Only when **limit** is used for filtering and the number of resources exceeds the value of **limit** or 2000 (default value of **limit**), value **next** will be returned for **rel** and a link for **href**.

Table 6-9 port objects

Parameter	Type	Description
id	String	• Specifies the port ID. The value can contain a maximum of 255 characters. • This parameter is not mandatory when you query ports.
name	String	Specifies the port name.
network_id	String	Specifies the ID of the network that the port belongs to.
admin_state_up	Boolean	• Specifies the administrative state of the port. • The default value is **true**.
mac_address	String	• Specifies the port MAC address, for example, **"mac_address": "fa:16:3e:9e:ff:55"**. • The MAC address can only be dynamically assigned by the system.
fixed_ips	Array of **fixed_ip** objects	• Specifies the port IP address. For details, see **Table 6-10**. For example, the value is **"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]**. "fixed_ips": [{"subnet_id": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", "ip_address": "2a07:b980:4030:14::1"}]

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Parameter	Type	Description
device_id	String	• Specifies the ID of the device that the port belongs to. • This parameter is automatically maintained by the system and cannot be set or updated manually. The port with this field specified cannot be deleted.
device_owner	String	• Specifies the belonged device, which can be the DHCP server, router, or Nova. • The value can be **network:dhcp**, **network:router_interface_distributed**, **compute:xxx**, **neutron:VIP_PORT**, **neutron:LOADBALANCERV2**, **neutron:LOADBALANCERV3**, **network:endpoint_interface**, **network:nat_gateway**, or **network:ucmp**. (In value **compute:xxx**, **xxx** specifies the AZ name, for example, **compute:aa-bb-cc** indicates that the private IP address is used by an ECS in the **aa-bb-cc** AZ). • Instructions: – This parameter value cannot be updated. You can only set **device_owner** to **neutron:VIP_PORT** for a virtual IP address port during port creation. If this parameter is not left blank, the port can only be deleted when this parameter value is **neutron:VIP_PORT**. – The port with this field specified cannot be deleted.
tenant_id	String	Specifies the project ID.

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Parameter	Type	Description
status	String	• Specifies the port status. • The value can be **ACTIVE**, **BUILD**, or **DOWN**. • The status of a HANA SR-IOV VM port is always **DOWN**.
security_groups	Array of strings	• Specifies the security group UUID, for example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. This is an extended attribute. • This parameter cannot be left blank.

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Parameter	Type	Description
allowed_address_pairs	Array of **allowed_address_pairs** objects	• Specifies a set of zero or more allowed address pairs. This is an extended attribute. For details, see **Table 6-11**. • Instructions: – The IP address cannot be **0.0.0.0/0**. – Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). – If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. – In the hardware SDN networking plan, the **ip_address** attribute value cannot be in CIDR format. – To assign a virtual IP address to an ECS, the IP address configured in **allowed_address_pairs** must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication. – Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the extended DHCP option. This is an extended attribute. For details, see **Table 6-12**.
binding:vif_details	**binding:vif_details** object	For details, see **Table 6-13**.

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Parameter	Type	Description
binding:profile	Object	• Specifies the user-defined settings. This is an extended attribute. • Instructions: – The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. The value of this field is maintained by the system and cannot be changed. Example: {"internal_elb": true} – The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true } Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.
binding:vnic_type	String	• Specifies the type of the bound vNIC. • The value can be: – **normal** indicates software switching.

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Parameter	Type	Description
port_security_enabled	Boolean	Specifies whether the security option is enabled for the port. **true** indicates that security groups can be added and DHCP anti-spoofing is enabled. **false** indicates that security groups and DHCP anti-spoofing are not applied.
dns_assignment	Array of **dns_assignment** objects	• Specifies the default private domain name information of the primary NIC. This is an extended attribute. • This parameter is automatically maintained by the system and cannot be set or updated manually. • The value can be: – **hostname**: The same as the value specified for **dns_name**. – **ip_address**: Private IPv4 address of the port. – **fqdn**: Private network fully qualified domain name (FQDN) of the port.
dns_name	String	• Specifies the default private network DNS name of the primary NIC. This is an extended attribute. • This parameter is automatically maintained by the system and cannot be set or updated manually. Before accessing the default private network domain name, ensure that the subnet uses the DNS provided by the current system.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

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Parameter	Type	Description
created_at	String	• Specifies the time (UTC) when the port is created. • Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	• Specifies the time (UTC) when the port is updated. • Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-10 fixed_ip objects

Parameter	Type	Description
subnet_id	String	• Specifies the subnet ID. • This parameter cannot be updated.
ip_address	String	• Specifies the port IP address. • This parameter cannot be updated.

Table 6-11 allowed_address_pairs objects

Parameter	Mandatory	Type	Description
ip_address	Yes	String	• Specifies the IP address. • You cannot set it to **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**. • If the value of parameter **allowed_address_pairs** is specified, parameter **ip_address** is mandatory.

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Parameter	Mandatory	Type	Description
mac_address	No	String	Specifies the MAC address. By default, the MAC address of the local port is used.

Table 6-12 extra_dhcp_opt objects

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

Table 6-13 binding:vif_details object

Parameter	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 dns_assignment object

Parameter	Type	Description
hostname	String	Specifies the host name of the port.
ip_address	String	Specifies the port IP address.
fqdn	String	Specifies the private network fully qualified domain name (FQDN) of the port.

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Table 6-15 ports_link object

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

Example Response

Example 1

```
{
 "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": [
```


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```
    {
        "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",
         "port_security_enabled":true,
         "extra_dhcp_opts": [],
         "fixed_ips": [
            {
               "ip_address": "172.16.0.37",
               "subnet_id": "b3ac1347-63f2-4e82-b853-3d86416a0db5"
            }
         ],
         "dns_assignment": [
            {
               "hostname": "ip-172-16-0-37",
               "ip_address": "172.16.0.37",
               "fqdn": "ip-172-16-0-37.xxx.compute.internal."
            }
         ],
         "dns_name": "ip-172-16-0-37",
         "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": "",
```

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```
        "port_security_enabled":true,
        "extra_dhcp_opts": [],
        "fixed_ips": [
           {
              "ip_address": "10.100.100.62",
              "subnet_id": "9b28f20c-0234-419f-a0b4-4a84f182f64b"
           }
        ],
        "dns_name": "",
        "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",
        "port_security_enabled":true,
        "extra_dhcp_opts": [],
        "fixed_ips": [
           {
              "ip_address": "10.1.0.37",
              "subnet_id": "b3ac1347-63f2-4e82-b853-3d86416a0db5"
           }
        ],
        "dns_assignment": [
           {
              "hostname": "ip-10-1-0-37",
              "ip_address": "10.1.0.37",
              "fqdn": "ip-10-1-0-37.xxx.compute.internal."//xxx indicates the region name.
           }
        ],
        "dns_name": "ip-10-1-0-37",
        "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"
     }
```


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```
  ],
  "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",
      "port_secuirty_enabled":true,
      "extra_dhcp_opts": [],
      "fixed_ips": [
        {
          "ip_address": "10.1.0.37",
          "subnet_id": "b3ac1347-63f2-4e82-b853-3d86416a0db5"
        }
      ],
      "dns_assignment": [
        {
          "hostname": "ip-10-1-0-37",
          "ip_address": "10.1.0.37",
          "fqdn": "ip-10-1-0-37.xxx.compute.internal."//xxx indicates the region name.
        }
      ],
      "dns_name": "ip-10-1-0-37",
      "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": "",
      "port_security_enabled":true,
      "fixed_ips": [
        {
```

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```
                "subnet_id": "391c74f7-e3b1-405c-8473-2f71a0aec7dc",
                "ip_address": "10.1.0.33"
            }
        ],
        "dns_name": "",
        "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",
        "port_security_enabled":true,
        "fixed_ips": [
            {
                "subnet_id": "b3ac1347-63f2-4e82-b853-3d86416a0db5",
                "ip_address": "10.1.0.37"
            }
        ],
        "dns_assignment": [
            {
                "hostname": "ip-10-1-0-37",
                "ip_address": "10.1.0.37",
                "fqdn": "ip-10-1-0-37.xxx.compute.internal."//xxx indicates the region name.
             }
        ],
        "dns_name": "ip-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**.

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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 6-16 describes the parameters.

Table 6-16 Parameter description

Parameter	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 6-17 Response parameter

Parameter	Type	Description
port	**port** object	Specifies the port object list. For details, see **Table 6-18**.

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Table 6-18 port objects

Parameter	Type	Description
id	String	• Specifies the port ID. The value can contain a maximum of 255 characters. • This parameter is not mandatory when you query ports.
name	String	Specifies the port name.
network_id	String	Specifies the ID of the network that the port belongs to.
admin_state_up	Boolean	• Specifies the administrative state of the port. • The default value is **true**.
mac_address	String	• Specifies the port MAC address, for example, **"mac_address": "fa:16:3e:9e:ff:55"**. • The MAC address can only be dynamically assigned by the system.
fixed_ips	Array of **fixed_ip** objects	• Specifies the port IP address. For details, see **Table 6-19**. For example, the value is **"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]**. **"fixed_ips": [{"subnet_id": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", "ip_address": "2a07:b980:4030:14::1"}]**.
device_id	String	• Specifies the device ID. • This parameter is automatically maintained by the system and cannot be set or updated manually. The port with this field specified cannot be deleted.

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Parameter	Type	Description
device_owner	String	• Specifies the belonged device, which can be the DHCP server, router, or Nova. • The value can be **network:dhcp**, **network:router_interface_distributed**, **compute:xxx**, **neutron:VIP_PORT**, **neutron:LOADBALANCERV2**, **neutron:LOADBALANCERV3**, **network:endpoint_interface**, **network:nat_gateway**, or **network:ucmp**. (In value **compute:xxx**, **xxx** specifies the AZ name, for example, **compute:aa-bb-cc** indicates that the private IP address is used by an ECS in the **aa-bb-cc** AZ). • Instructions: – This parameter value cannot be updated. You can only set **device_owner** to **neutron:VIP_PORT** for a virtual IP address port during port creation. If this parameter is not left blank, the port can only be deleted when this parameter value is **neutron:VIP_PORT**. – The port with this field specified cannot be deleted.
tenant_id	String	Specifies the project ID.
status	String	• Specifies the port status. • The value can be **ACTIVE**, **BUILD**, or **DOWN**. • The status of a HANA SR-IOV VM port is always **DOWN**.

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Parameter	Type	Description
security_groups	Array of strings	• Specifies the security group UUID, for example, "security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]. This is an extended attribute. • This parameter cannot be left blank.
allowed_address_pairs	Array of **allowed_address_pairs** objects	• Specifies a set of zero or more allowed address pairs. This is an extended attribute. For details, see **Table 6-20**. • Instructions: – The IP address cannot be **0.0.0.0/0**. – Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). – If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. – In the hardware SDN networking plan, the **ip_address** attribute value cannot be in CIDR format. – To assign a virtual IP address to an ECS, the IP address configured in **allowed_address_pairs** must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication. – Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.

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Parameter	Type	Description
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the extended DHCP option. This is an extended attribute. For details, see **Table 6-21**.
binding:vif_details	**binding:vif_details** object	For details, see **Table 6-23**.

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Parameter	Type	Description
binding:profile	binding:profile object	• Specifies the user-defined settings. This is an extended attribute. • Instructions: – The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. The value of this field is maintained by the system and cannot be changed. Example: {"internal_elb": true} – The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true } Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.
binding:vnic_type	String	• Specifies the type of the bound vNIC. • The value can be: – **normal** indicates software switching.

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Parameter	Type	Description
port_security_enabled	Boolean	Specifies whether the security option is enabled for the port. **true** indicates that security groups can be added and DHCP anti-spoofing is enabled. **false** indicates that security groups and DHCP anti-spoofing are not applied.
dns_assignment	Array of **dns_assignment** objects	• Specifies the default private domain name information of the primary NIC. This is an extended attribute. • This parameter is automatically maintained by the system and cannot be set or updated manually. • The value can be: – **hostname**: The same as the value specified for **dns_name**. – **ip_address**: Private IPv4 address of the port. – **fqdn**: Private network fully qualified domain name (FQDN) of the port.
dns_name	String	• Specifies the default private network DNS name of the primary NIC. This is an extended attribute. • This parameter is automatically maintained by the system and cannot be set or updated manually. Before accessing the default private network domain name, ensure that the subnet uses the DNS provided by the current system.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

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Parameter	Type	Description
created_at	String	• Specifies the time (UTC) when the port is created. • Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	• Specifies the time (UTC) when the port is updated. • Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-19 fixed_ip objects

Parameter	Type	Description
subnet_id	String	• Specifies the subnet ID. • This parameter cannot be updated.
ip_address	String	• Specifies the port IP address. • This parameter cannot be updated.

Table 6-20 allowed_address_pairs objects

Parameter	Mandatory	Type	Description
ip_address	Yes	String	• Specifies the IP address. • You cannot set it to **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**. • If the value of parameter **allowed_address_pairs** is specified, parameter **ip_address** is mandatory.

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Parameter	Mandatory	Type	Description
mac_address	No	String	Specifies the MAC address. By default, the MAC address of the local port is used.

Table 6-21 extra_dhcp_opt objects

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

Table 6-22 dns_assignment object

Parameter	Type	Description
hostname	String	Specifies the host name of the port.
ip_address	String	Specifies the port IP address.
fqdn	String	Specifies the private network fully qualified domain name (FQDN) of the port.

Table 6-23 binding:vif_details object

Parameter	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": {
```

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```
    "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 6-24 Request parameter

Parameter	Type	Mandatory	Description
port	**port** object	Yes	Specifies the port object list. For details, see **Table 6-25**.

Table 6-25 port objects

Parameter	Mandatory	Type	Description
name	No	String	Specifies the port name.
network_id	Yes	String	• Specifies the ID of the network that the port belongs to. • The network ID must exist.
admin_state_up	No	Boolean	Specifies the administrative status. The default value is **true**.
fixed_ips	No	Array of **fixed_ip** objects	Specifies the port IP address. For details, see **Table 6-26**. For example, the value is **"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]**. "fixed_ips": [{"subnet_id": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", "ip_address": "2a07:b980:4030:14::1"}]
security_groups	No	Array of strings	Specifies the UUID of the security group, for example, **"security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]**. This is an extended attribute. This parameter cannot be left blank.

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Parameter	Mandatory	Type	Description
allowed_address_pairs	No	Array of **allowed_address_pairs** objects	Specifies a set of zero or more allowed address pairs. This is an extended attribute. For details, see **Table 6-27**. Instructions: • The IP address cannot be **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • In the hardware SDN networking plan, the **ip_address** attribute value cannot be in CIDR format. • To assign a virtual IP address to an ECS, the IP address configured in **allowed_address_pairs** must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.
extra_dhcp_opts	No	Array of **extra_dhcp_opt** objects	Specifies the extended DHCP option. This is an extended attribute. For details, see **Table 6-28**.

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Parameter	Mandatory	Type	Description
binding:profile	No	Object	• Specifies the user-defined settings. This is an extended attribute. • Instructions: – The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. The value of this field is maintained by the system and cannot be changed. Example: {"internal_elb": true} – The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true } Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.

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Parameter	Mandatory	Type	Description
binding:vnic_type	No	String	Specifies the type of the bound vNIC. **normal**: Softswitch
port_security_enabled	No	Boolean	Specifies whether the security option is enabled for the port. **true** indicates that security groups can be added and DHCP anti-spoofing is enabled. **false** indicates that security groups and DHCP anti-spoofing are not applied.
device_owner	No	String	Specifies the device that the port belongs to. Currently, only **""** and **neutron:VIP_PORT** are supported. **neutron:VIP_PORT** indicates the port of a virtual IP address.

Table 6-26 fixed_ip objects

Parameter	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.

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Table 6-27 allowed_address_pairs objects

Parameter	Mandatory	Type	Description
ip_address	Yes	String	• Specifies the IP address. • You cannot set it to **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**. • If the value of parameter **allowed_address_pairs** is specified, parameter **ip_address** is mandatory.
mac_address	No	String	Specifies the MAC address. By default, the MAC address of the local port is used.

Table 6-28 extra_dhcp_opt objects

Parameter	Mandatory	Type	Description
opt_name	No	String	Specifies the option name.
opt_value	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"
   }
}
```


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Response Parameters

Table 6-29 Response parameter

Parameter	Type	Description
port	**port** object	Specifies the port information. For details, see **Table 6-30**.

Table 6-30 port objects

Parameter	Type	Description
id	String	Specifies the port ID. A maximum of 255 characters are allowed. This parameter is not mandatory when you query ports.
name	String	Specifies the port name.
network_id	String	Specifies the ID of the network to which the port belongs.
admin_state_up	Boolean	Specifies the administrative status. The default value is **true**.
mac_address	String	Specifies the port MAC address. For example, **"mac_address": "fa:16:3e:9e:ff:55"**. This value can only be dynamically assigned by the system.
fixed_ips	Array of **fixed_ip** objects	Specifies the port IP address. For details, see **Table 6-31**. For example, the value is **"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]**. "fixed_ips": [{"subnet_id": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", "ip_address": "2a07:b980:4030:14::1"}]

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Parameter	Type	Description
device_id	String	Specifies the device ID. This value is automatically maintained by the system and cannot be set or updated manually. The port with this field specified cannot be deleted.
device_owner	String	Specifies the DHCP, router or Nova to which a device belongs. The value can be **network:dhcp**, **network:router_interface_distributed**, **compute:xxx**, **neutron:VIP_PORT**, **neutron:LOADBALANCERV2**, **neutron:LOADBALANCERV3**, **network:endpoint_interface**, **network:nat_gateway**, or **network:ucmp**. (In value **compute:xxx**, **xxx** specifies the AZ name, for example, **compute:aa-bb-cc** indicates that the private IP address is used by an ECS in the **aa-bb-cc** AZ). This parameter value cannot be updated. You can only set **device_owner** to **neutron:VIP_PORT** for a virtual IP address port during port creation. If this parameter of a port is not left blank, the port can only be deleted when this parameter value is **neutron:VIP_PORT**. The port with this field specified cannot be deleted.
tenant_id	String	Specifies the project ID.
status	String	Specifies the port status. The value can be **ACTIVE**, **BUILD**, or **DOWN**. The status of a HANA SR-IOV VM port is always **DOWN**.

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Parameter	Type	Description
security_groups	Array of strings	Specifies the UUID of the security group, for example, **"security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]**. This is an extended attribute. This parameter cannot be left blank.
allowed_address_pairs	Array of **allowed_address_pairs** objects	Specifies a set of zero or more allowed address pairs. This is an extended attribute. For details, see **Table 6-32**. Instructions: • The IP address cannot be **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • In the hardware SDN networking plan, the **ip_address** attribute value cannot be in CIDR format. • To assign a virtual IP address to an ECS, the IP address configured in **allowed_address_pairs** must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the extended DHCP option. This is an extended attribute. For details, see **Table 6-33**.
binding:vif_details	**binding:vif_details** object	For details, see **Table 6-34**.

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Parameter	Type	Description
binding:profile	Object	• Specifies the user-defined settings. This is an extended attribute. • Instructions: – The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. The value of this field is maintained by the system and cannot be changed. Example: {"internal_elb": true} – The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true } Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.
binding:vnic_type	String	Specifies the type of the bound vNIC. **normal**: Softswitch

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Parameter	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.
dns_assignment	Array of **dns_assignment** objects	Specifies the default private network domain name information of the primary NIC. This is an extended attribute. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value. • **hostname**: **dns_name** value of the NIC • **ip_address**: Private IPv4 address of the NIC • **fqdn**: Default private network fully qualified domain name (FQDN) of the IP address
dns_name	String	Specifies the default private network DNS name of the primary NIC. This is an extended attribute. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value. Before accessing the default private network domain name, ensure that the subnet uses the DNS provided by the current system.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the port is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the port is updated. Format: *yyyy-MM-ddTHH:mm:ss*

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Table 6-31 fixed_ip objects

Parameter	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 6-32 allowed_address_pairs objects

Parameter	Type	Description
ip_address	String	Specifies the IP address. **0.0.0.0/0** is not supported.
mac_address	String	Specifies the MAC address.

Table 6-33 extra_dhcp_opt objects

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

Table 6-34 binding:vif_details object

Parameter	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 6-35 dns_assignment object

Parameter	Type	Description
hostname	String	Specifies the host name of the port.

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Parameter	Type	Description
ip_address	String	Specifies the port IP address.
fqdn	String	Specifies the private network fully qualified domain name (FQDN) of the port.

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 6-36 describes the parameters.

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Table 6-36 Parameter description

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

Request Parameters

Table 6-37 Request parameter

Parameter	Type	Mandatory	Description
port	**port** object	Yes	Specifies the port object list. For details, see **Table 6-38**. You must specify at least one attribute when updating a port.

Table 6-38 port objects

Parameter	Mandatory	Type	Description
name	No	String	Specifies the port name.
security_groups	No	Array of strings	Specifies the UUID of the security group, for example, **"security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]**. This is an extended attribute. This parameter cannot be left blank.

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Parameter	Mandatory	Type	Description
allowed_address_pairs	No	Array of **allowed_address_pairs** objects	Specifies a set of zero or more allowed address pairs. This is an extended attribute. For details, see **Table 6-39**. Instructions: • The IP address cannot be **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • In the hardware SDN networking plan, the **ip_address** attribute value cannot be in CIDR format. • To assign a virtual IP address to an ECS, the IP address configured in **allowed_address_pairs** must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.
extra_dhcp_opts	No	Array of **extra_dhcp_opt** objects	Specifies the extended DHCP option. This is an extended attribute. For details, see **Table 6-40**.

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Parameter	Mandatory	Type	Description
binding:profile	No	Object	• Specifies the user-defined settings. This is an extended attribute. • Instructions: – The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. The value of this field is maintained by the system and cannot be changed. Example: {"internal_elb": true} – The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true } Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.

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Parameter	Mandatory	Type	Description
binding:vnic_type	No	String	Specifies the type of the bound vNIC. **normal**: Softswitch
port_security_enabled	No	Boolean	Specifies whether the security option is enabled for the port. **true** indicates that security groups can be added and DHCP anti-spoofing is enabled. **false** indicates that security groups and DHCP anti-spoofing are not applied.

Table 6-39 allowed_address_pairs objects

Parameter	Mandatory	Type	Description
ip_address	Yes	String	• Specifies the IP address. • You cannot set it to **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**. • If the value of parameter **allowed_address_pairs** is specified, parameter **ip_address** is mandatory.
mac_address	No	String	Specifies the MAC address. By default, the MAC address of the local port is used.

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Table 6-40 extra_dhcp_opt objects

Parameter	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 6-41 Response parameter

Parameter	Type	Description
port	**port** object	Specifies the port object list. For details, see **Table 6-42**.

Table 6-42 port objects

Parameter	Type	Description
id	String	Specifies the port ID. A maximum of 255 characters are allowed. This parameter is not mandatory when you query ports.
name	String	Specifies the port name.
network_id	String	Specifies the ID of the network to which the port belongs.
admin_state_up	Boolean	Specifies the administrative status. The default value is **true**.

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Parameter	Type	Description
mac_address	String	Specifies the port MAC address. For example, **"mac_address": "fa:16:3e:9e:ff:55"**. This value can only be dynamically assigned by the system.
fixed_ips	Array of **fixed_ip** objects	Specifies the port IP address. For details, see **Table 6-43**. For example, the value is **"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]**. "fixed_ips": [{"subnet_id": "1fd001aa-6946-4168-86d9-924c7d3ef8fb", "ip_address": "2a07:b980:4030:14::1"}]
device_id	String	Specifies the device ID. This value is automatically maintained by the system and cannot be set or updated manually. The port with this field specified cannot be deleted.

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Parameter	Type	Description
device_owner	String	Specifies the DHCP, router or Nova to which a device belongs. The value can be **network:dhcp**, **network:router_interface_distributed**, **compute:xxx**, **neutron:VIP_PORT**, **neutron:LOADBALANCERV2**, **neutron:LOADBALANCERV3**, **network:endpoint_interface**, **network:nat_gateway**, or **network:ucmp**. (In value **compute:xxx**, **xxx** specifies the AZ name, for example, **compute:aa-bb-cc** indicates that the private IP address is used by an ECS in the **aa-bb-cc** AZ). This parameter value cannot be updated. You can only set **device_owner** to **neutron:VIP_PORT** for a virtual IP address port during port creation. If this parameter of a port is not left blank, the port can only be deleted when this parameter value is **neutron:VIP_PORT**. The port with this field specified cannot be deleted.
tenant_id	String	Specifies the project ID.
status	String	Specifies the port status. The value can be **ACTIVE**, **BUILD**, or **DOWN**. The status of a HANA SR-IOV VM port is always **DOWN**.
security_groups	Array of strings	Specifies the UUID of the security group, for example, **"security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]**. This is an extended attribute. This parameter cannot be left blank.

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Parameter	Type	Description
allowed_address_pairs	Array of **allowed_address_pairs** objects	Specifies a set of zero or more allowed address pairs. This is an extended attribute. For details, see **Table 6-44**. Instructions: • The IP address cannot be **0.0.0.0/0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. • In the hardware SDN networking plan, the **ip_address** attribute value cannot be in CIDR format. • To assign a virtual IP address to an ECS, the IP address configured in **allowed_address_pairs** must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication. • Set **allowed_address_pairs** of the cloud server network interface to **1.1.1.1/0**.
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the extended DHCP option. This is an extended attribute. For details, see **Table 6-45**.
binding:vif_details	**binding:vif_details** object	For details, see **Table 6-46**.

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Parameter	Type	Description
binding:profile	Object	• Specifies the user-defined settings. This is an extended attribute. • Instructions: – The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. The value of this field is maintained by the system and cannot be changed. Example: {"internal_elb": true} – The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true } Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.
binding:vnic_type	String	Specifies the type of the bound vNIC. **normal**: Softswitch

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Parameter	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.
dns_assignment	Array of **dns_assignment** objects	Specifies the default private network domain name information of the primary NIC. This is an extended attribute. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value. • **hostname**: **dns_name** value of the NIC • **ip_address**: Private IPv4 address of the NIC • **fqdn**: Default private network fully qualified domain name (FQDN) of the IP address
dns_name	String	Specifies the default private network DNS name of the primary NIC. This is an extended attribute. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value. Before accessing the default private network domain name, ensure that the subnet uses the DNS provided by the current system.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the port is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the port is updated. Format: *yyyy-MM-ddTHH:mm:ss*

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Table 6-43 fixed_ip objects

Parameter	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 6-44 allowed_address_pairs objects

Parameter	Type	Description
ip_address	String	Specifies the IP address. **0.0.0.0/0** is not supported.
mac_address	String	Specifies the MAC address.

Table 6-45 extra_dhcp_opt objects

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

Table 6-46 binding:vif_details object

Parameter	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 6-47 dns_assignment object

Parameter	Type	Description
hostname	String	Specifies the host name of the port.

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Parameter	Type	Description
ip_address	String	Specifies the port IP address.
fqdn	String	Specifies the private network fully qualified domain name (FQDN) of the port.

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.

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- A port with **device_id** specified cannot be deleted.

URI

DELETE /v2.0/ports/{port_id}

Table 6-48 describes the parameters.

Table 6-48 Parameter description

Parameter	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

Queries all networks accessible to the tenant submitting the request. A maximum of 2,000 records can be returned for each query operation. If the number of records exceeds 2,000, the pagination marker will be returned.

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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 networks by page

```
GET https://{Endpoint}/v2.0/networks?limit=2&marker=0133cd73-34d4-4d4c-bf1f-
e65b24603206&page_reverse=False
```

Table 6-49 describes the parameters.

Table 6-49 Parameter description

Parameter	Mandatory	Type	Description
id	No	String	Specifies that the network ID is used as the filtering condition.
name	No	String	Specifies that the network name is used as the filtering condition.
admin_state_up	No	Boolean	Specifies that the admin state is used as the filtering condition. The value can be **true** or **false**.
provider:network_type	No	String	Specifies that the network type is used as the filtering condition.
shared	No	Boolean	Specifies that whether the network can be shared by multiple tenants is used as the filtering condition. The value can be **true** or **false**.
status	No	String	Specifies that the network status is used as the filtering condition. The value can be **ACTIVE**, **BUILD**, or **DOWN**.
router:external	No	Boolean	Specifies that whether it is an external network is used as a filtering condition. If router:external=true is used for filtering, other filters are ignored and the external network is directly returned. The value can be **true** or **false**.
tenant_id	No	String	Specifies that the project ID is used as the filtering condition.

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Parameter	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.

Request Parameters

None

Example Request

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


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Response Parameters

Table 6-50 Response parameter

Parameter	Type	Description
networks	Array of **network** objects	Specifies the network list. For details, see **Table 6-51**.
networks_links	Array of **networks_link** objects	Specifies the pagination information. For details, see **Table 6-52**. Only when **limit** is used for filtering and the number of resources exceeds the value of **limit** or 2000 (default value of **limit**), value **next** will be returned for **rel** and a link for **href**.

Table 6-51 network object

Parameter	Type	Description
status	String	Specifies the network status. The value can be **ACTIVE**, **BUILD**, **DOWN**, or **ERROR**.
subnets	Array of strings	Specifies ID of the subnet associated with this network. Only one subnet can be associated with each network.
name	String	Specifies the network name. The name cannot be the same as the **admin_external_net** value (preset network name and cannot be used).
router:external	Boolean	Specifies whether the network is an external network. The default value is **false**. This is an extended attribute.
admin_state_up	Boolean	Specifies the administrative status. The value can only be **true**.
tenant_id	String	Specifies the project ID.
shared	Boolean	Specifies whether the network can be shared by different tenants.
id	String	Specifies the network ID.

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Parameter	Type	Description
provider:network_type	String	Specifies the network type. Only the VXLAN and GENEVE networks are supported. Tenants can only set this parameter to **geneve**. If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as **admin_external_net**, this parameter is fixed at **vlan** and cannot be configured. Note: • Set this parameter to **geneve** if you want to create GENEVE networks. • Do not specify this parameter if you want to create VXLAN networks.
availability_zone_hints	Array of strings	Specifies the availability zones available to this network. The current version does not support cross-availability-zone network scheduling.
availability_zones	Array of strings	Specifies the availability zone of this network.
port_security_enabled	Boolean	Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping settings of all VMs in the network do not take effect.
dns_domain	String	Specifies the default private network DNS domain address. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the network is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the network is updated. Format: *yyyy-MM-ddTHH:mm:ss*

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Table 6-52 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**.

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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 6-53 describes the parameters.

Table 6-53 Parameter description

Parameter	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 6-54 Response parameter

Parameter	Type	Description
network	**network** object	Specifies the network. For details, see **Table 6-55**.

Table 6-55 network objects

Parameter	Type	Description
status	String	Specifies the network status. The value can be **ACTIVE**, **BUILD**, **DOWN**, or **ERROR**.
subnets	Array of strings	Specifies IDs of the subnets associated with this network. The IDs are in a list. Only one subnet can be associated with each network.

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Parameter	Type	Description
name	String	Specifies the network name. The name cannot be the same as the **admin_external_net** value (preset network name and cannot be used).
router:external	Boolean	Specifies whether the network is an external network. The default value is **false**. This is an extended attribute.
admin_state_up	Boolean	Specifies the administrative status. The value can only be **true**.
tenant_id	String	Specifies the project ID.
shared	Boolean	Specifies whether the network can be shared by different tenants.
id	String	Specifies the network ID. This parameter is not mandatory when you query networks.
provider:network_type	String	Specifies the network type. Only the VXLAN and GENEVE networks are supported. Tenants can only set this parameter to **geneve**. If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as **admin_external_net**, this parameter is fixed at **vlan** and cannot be configured. Note: • Set this parameter to **geneve** if you want to create GENEVE networks. • Do not specify this parameter if you want to create VXLAN networks.
availability_zone_hints	Array of strings	Specifies the availability zones available to this network. The current version does not support cross-availability-zone network scheduling.
availability_zones	Array of strings	Specifies the availability zone of this network.
port_security_enabled	Boolean	Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping settings of all VMs in the network do not take effect.

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Parameter	Type	Description
dns_domain	String	Specifies the default private network DNS domain address. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the network is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the network is updated. Format: *yyyy-MM-ddTHH:mm:ss*

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**.

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6.3.3 Creating a Network

Function

This API is used to create a network.

URI

POST /v2.0/networks

Request Parameters

Table 6-56 Request parameter

Parameter	Type	Mandatory	Description
network	**network** object	Yes	Specifies the network. For details, see **Table 6-57**.

Table 6-57 network objects

Parameter	Mandatory	Type	Description
name	No	String	Specifies the network name. The name cannot be the same as the **admin_external_net** value (preset network name and cannot be used).
admin_state_up	No	Boolean	Specifies the administrative status. The value can only be **true**.
shared	No	Boolean	Specifies whether the network can be shared by different tenants.

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Parameter	Mandatory	Type	Description
provider:network_type	No	String	Specifies the network type. Only the VXLAN and GENEVE networks are supported. Tenants can only set this parameter to **geneve**. If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as **admin_external_net**, this parameter is fixed at **vlan** and cannot be configured. Note: • Set this parameter to **geneve** if you want to create GENEVE networks. • Do not specify this parameter if you want to create VXLAN networks.
port_security_enabled	No	Boolean	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

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 6-58 Response parameter

Parameter	Type	Description
network	**network** object	Specifies the network. For details, see **Table 6-59**.

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Table 6-59 network objects

Parameter	Type	Description
status	String	Specifies the network status. The value can be **ACTIVE**, **BUILD**, **DOWN**, or **ERROR**.
subnets	Array of strings	Specifies IDs of the subnets associated with this network. The IDs are in a list. Only one subnet can be associated with each network.
name	String	Specifies the network name. The name cannot be the same as the **admin_external_net** value (preset network name and cannot be used).
router:external	Boolean	Specifies whether the network is an external network. The default value is **false**. This is an extended attribute.
admin_state_up	Boolean	Specifies the administrative status. The value can only be **true**.
tenant_id	String	Specifies the project ID.
shared	Boolean	Specifies whether the network can be shared by different tenants.
id	String	Specifies the network ID. This parameter is not mandatory when you query networks.
provider:network_type	String	Specifies the network type. Only the VXLAN and GENEVE networks are supported. Tenants can only set this parameter to **geneve**. If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as **admin_external_net**, this parameter is fixed at **vlan** and cannot be configured. Note: • Set this parameter to **geneve** if you want to create GENEVE networks. • Do not specify this parameter if you want to create VXLAN networks.

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Parameter	Type	Description
availability_zone_hints	Array of strings	Specifies the availability zones available to this network. The current version does not support cross-availability-zone network scheduling.
availability_zones	Array of strings	Specifies the availability zone of this network.
port_security_enabled	Boolean	Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping settings of all VMs in the network do not take effect.
dns_domain	String	Specifies the default private network DNS domain address. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the network is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the network is updated. Format: *yyyy-MM-ddTHH:mm:ss*

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"
    }
}
```


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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 6-60 describes the parameters.

Table 6-60 Parameter description

Parameter	Mandatory	Description
network_id	Yes	Specifies the network ID.

Request Parameters

Table 6-61 Request parameter

Parameter	Type	Mandatory	Description
network	**network** object	Yes	Specifies the network. For details, see **Table 6-62**. You must specify at least one attribute when updating a network.

Table 6-62 network objects

Parameter	Mandatory	Type	Description
name	No	String	Specifies the network name. The name cannot be the same as the **admin_external_net** value (preset network name and cannot be used).

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Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status. The value can only be **true**.
port_security_enabled	No	Boolean	Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping settings of all VMs in the network do not take effect.

Example Request

Change the name of the network whose ID is c360322d-5315-45d7-b7d2-481f98c56edb to **network-test02**.

```
PUT https://{Endpoint}/v2.0/networks/c360322d-5315-45d7-b7d2-481f98c56edb

{
  "network": {
    "name": "network-test02"
  }
}
```

Response Parameters

Table 6-63 Response parameter

Parameter	Type	Description
network	network object	Specifies the network. For details, see Table 6-64.

Table 6-64 network objects

Parameter	Type	Description
status	String	Specifies the network status. The value can be **ACTIVE**, **BUILD**, **DOWN**, or **ERROR**.
subnets	Array of strings	Specifies IDs of the subnets associated with this network. The IDs are in a list. Only one subnet can be associated with each network.

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Parameter	Type	Description
name	String	Specifies the network name. The name cannot be the same as the **admin_external_net** value (preset network name and cannot be used).
router:external	Boolean	Specifies whether the network is an external network. The default value is **false**. This is an extended attribute.
admin_state_up	Boolean	Specifies the administrative status. The value can only be **true**.
tenant_id	String	Specifies the project ID.
shared	Boolean	Specifies whether the network can be shared by different tenants.
id	String	Specifies the network ID. This parameter is not mandatory when you query networks.
provider:network_type	String	Specifies the network type. Only the VXLAN and GENEVE networks are supported. Tenants can only set this parameter to **geneve**. If this parameter is not specified, the network type is automatically set to VXLAN. If the network is preset as **admin_external_net**, this parameter is fixed at **vlan** and cannot be configured. Note: • Set this parameter to **geneve** if you want to create GENEVE networks. • Do not specify this parameter if you want to create VXLAN networks.
availability_zone_hints	Array of strings	Specifies the availability zones available to this network. The current version does not support cross-availability-zone network scheduling.
availability_zones	Array of strings	Specifies the availability zone of this network.
port_security_enabled	Boolean	Specifies whether the security option is enabled for the port. If the option is not enabled, the security group and DHCP snooping settings of all VMs in the network do not take effect.

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Parameter	Type	Description
dns_domain	String	Specifies the default private network DNS domain address. The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the network is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the network is updated. Format: *yyyy-MM-ddTHH:mm:ss*

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**.

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6.3.5 Deleting a Network

Function

This API is used to delete a network.

URI

DELETE /v2.0/networks/{network_id}

Table 6-65 describes the parameters.

Table 6-65 Parameter description

Parameter	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

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6.4.1 Querying Subnets

Function

Queries all subnets accessible to the tenant submitting the request. A maximum of 2,000 records can be returned for each query operation. If the number of records exceeds 2,000, the pagination marker will be returned.

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}&gateway_ip={subnet_gateway}&tenant_id={tenant_id}&enable_dhcp={is_enable_dhcp}
```

Example of querying subnets by page

```
GET https://{Endpoint}/v2.0/subnets?limit=2&marker=011fc878-5521-4654-a1ad-f5b0b5820302&page_reverse=False
```

Table 6-66 describes the parameters.

Table 6-66 Parameter description

Parameter	Mandatory	Type	Description
id	No	String	Specifies that the ID is used as the filtering condition.
name	No	String	Specifies that the subnet name is used as the filtering condition.
enable_dhcp	No	Boolean	Specifies whether DHCP is enabled for the subnet is used as the filtering condition. The value can be **true** or **false**.
cidr	No	String	Specifies that the CIDR block is used as the filtering condition.
network_id	No	String	Specifies that the network ID is used as the filtering condition.
ip_version	No	String	Specifies that the IP address version is used as the filtering condition.
gateway_ip	No	String	Specifies that the gateway IP address is used as the filtering condition.
tenant_id	No	String	Specifies that the project ID is used as the filtering condition.

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Parameter	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.

Request Parameters

None

Example Request

Example 1

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

Example 2

```
GET https://{Endpoint}/v2.0/subnets?id=011fc878-5521-4654-a1ad-f5b0b5820322
```

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Response Parameters

Table 6-67 Response parameter

Parameter	Type	Description
subnets	Array of **subnet** objects	Specifies the subnet list. For details, see **Table 6-68**.
subnets_links	Array of **subnets_link** objects	Specifies the pagination information. For details, see **Table 6-71**. Only when **limit** is used for filtering and the number of resources exceeds the value of **limit** or 2000 (default value of **limit**), value **next** will be returned for **rel** and a link for **href**.

Table 6-68 subnet objects

Parameter	Type	Description
id	String	Specifies the subnet ID. This parameter is not mandatory when you query subnets.
name	String	Specifies the subnet name.
ip_version	Integer	Specifies the IP address version. The value can be **4** (IPv4) or **6** (IPv6).
ipv6_address_mode	String	Specifies the IPv6 addressing mode. Only **dhcpv6-stateful** is supported.
ipv6_ra_mode	String	Specifies the IPv6 route broadcast mode. Only **dhcpv6-stateful** is supported.
network_id	String	Specifies the ID of the network to which the subnet belongs.

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Parameter	Type	Description
cidr	String	Specifies the CIDR format. Only the IPv4 addresses in the 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16 ranges are supported. The subnet mask cannot be greater than 28. This parameter cannot be set if the value of **ip_version** is **6**.
gateway_ip	String	The gateway IP address cannot conflict with IP addresses configured for **allocation_pools**. This attribute cannot be modified.
allocation_pools	Array of **allocation_pool** objects	Specifies available IP address pools. For details, see **Table 6-69**. Example: [{ "start": "10.0.0.2", "end": "10.0.0.251"}] The last three and the first IP addresses in each subnet are the ones reserved by the system. For example, in IPv4 subnet 192.168.1.0/24, IP addresses 192.168.1.0, 192.168.1.253, 192.168.1.254, and 192.168.1.255 are reserved by the system. [{"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. By default, the IP addresses reserved by the system are not in the IP address pool specified by **allocation_pool**. When updating an IP address pool, the **allocation_pool** value can contain neither gateway nor broadcast IP addresses.

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Parameter	Type	Description
dns_nameservers	Array of strings	Specifies the DNS server address. Example: "dns_nameservers": ["8.xx.xx.8","8.xx.xx.4"]
host_routes	Array of **host_route** objects	Specifies the static VM routes. For details, see **Table 6-70**. Static routes are not supported, and entered information will be ignored.
tenant_id	String	Specifies the project ID.
enable_dhcp	Boolean	Specifies whether to enable the DHCP function. Value **false** indicates that the DHCP function is not enabled. The value can only be **true**.
subnetpool_id	String	Specifies the subnet pool ID. Currently, only IPv6 is supported.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the subnet is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the subnet is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-69 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.

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Table 6-70 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 6-71 subnets_link object

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

Example Response

Example 1

```
{
   "subnets": [
      {
          "name": "kesmdemeet",
          "cidr": "172.16.236.0/24",
          "id": "011fc878-5521-4654-a1ad-f5b0b5820302",
          "enable_dhcp": true,
          "network_id": "48efad0c-079d-4cc8-ace0-dce35d584124",
          "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
          "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
          "dns_nameservers": [],
          "allocation_pools": [
             {
                "start": "172.16.236.2",
                "end": "172.16.236.251"
             }
          ],
          "host_routes": [],
          "ip_version": 4,
          "gateway_ip": "172.16.236.1",
          "created_at": "2018-03-26T08:23:43",
          "updated_at": "2018-03-26T08:23:44"
      }
   ],
   "subnets_links": [
      {
          "rel": "next",
          "href": "https://{Endpoint}/v2.0/subnets?limit=1&marker=011fc878-5521-4654-a1ad-f5b0b5820302"
      },
      {    "rel": "previous",
          "href": "https://{Endpoint}/v2.0/subnets?limit=1&marker=011fc878-5521-4654-a1ad-
f5b0b5820302&page_reverse=True"
      }
   ]
}
```


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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:fffc"
      }],
      "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
```


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Response Parameters

Table 6-72 Response parameter

Parameter	Type	Description
subnet	**subnet** object	Specifies the subnet. For details, see **Table 6-73**.

Table 6-73 subnet objects

Parameter	Type	Description
id	String	Specifies the subnet ID. This parameter is not mandatory when you query subnets.
name	String	Specifies the subnet name.
ip_version	Integer	Specifies the IP address version. The value can be **4** (IPv4) or **6** (IPv6).
ipv6_address_mode	String	Specifies the IPv6 addressing mode. Only **dhcpv6-stateful** is supported.
ipv6_ra_mode	String	Specifies the IPv6 route broadcast mode. Only **dhcpv6-stateful** 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. This parameter cannot be set if the value of **ip_version** is **6**.
gateway_ip	String	The gateway IP address cannot conflict with IP addresses configured for **allocation_pools**. This attribute cannot be modified.

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Parameter	Type	Description
allocation_pools	Array of **allocation_pool** objects	Specifies the available IP address pool. For details, see **Table 6-74**. Example: [{ "start": "10.0.0.2", "end": "10.0.0.251"}] The last three and the first IP addresses in each subnet are the ones reserved by the system. For example, in subnet **192.168.1.0/24**, IP addresses 192.168.1.0, 192.168.1.253, 192.168.1.254, and 192.168.1.255 are reserved by the system. [{"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. By default, the IP addresses reserved by the system are not in the IP address pool specified by **allocation_pool**. When updating an IP address pool, the **allocation_pool** value can contain neither gateway nor broadcast IP addresses.
dns_nameservers	Array of strings	Specifies the DNS server address. Example: "dns_nameservers": ["8.xx.xx.8","8.xx.xx.4"]
host_routes	Array of **host_route** objects	Specifies the static VM routes. For details, see **Table 6-75**. Static routes are not supported, and entered information will be ignored.
tenant_id	String	Specifies the project ID.

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Parameter	Type	Description
enable_dhcp	Boolean	Specifies whether to enable the DHCP function. Value **false** indicates that the DHCP function is not enabled. The value can only be **true**.
subnetpool_id	String	Specifies the subnet pool ID. Currently, only IPv6 is supported.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the subnet is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the subnet is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-74 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 6-75 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",
```


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```
    "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"
  }
}
```


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 6-76 Request parameter

Parameter	Type	Mandatory	Description
subnet	**subnet** object	Yes	Specifies the subnet. For details, see **Table 6-77**.

Table 6-77 subnet objects

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

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Parameter	Mandatory	Type	Description
ip_version	No	Integer	Specifies the IP address version. The value can be **4** (IPv4) or **6** (IPv6).
ipv6_address_mode	No	String	Specifies the IPv6 addressing mode. Only **dhcpv6-stateful** is supported.
ipv6_ra_mode	No	String	Specifies the IPv6 route broadcast mode. Only **dhcpv6-stateful** 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. This parameter cannot be set if the value of **ip_version** is **6**.
gateway_ip	No	String	The gateway IP address cannot conflict with IP addresses configured for **allocation_pools**. This attribute cannot be modified.

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Parameter	Mandatory	Type	Description
allocation_pools	No	Array of **allocation_pool** objects	Specifies the available IP address pool. For details, see **Table 6-78**. Example: [{ "start": "10.0.0.2", "end": "10.0.0.251"}] The last three and the first IP addresses in each subnet are the ones reserved by the system. For example, in subnet 192.168.1.0/24, IP addresses 192.168.1.0, 192.168.1.253, 192.168.1.254, and 192.168.1.255 are reserved by the system. [{"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. By default, the IP addresses reserved by the system are not in the IP address pool specified by **allocation_pool**. When updating an IP address pool, the **allocation_pool** value can contain neither gateway nor broadcast IP addresses.

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Parameter	Mandatory	Type	Description
dns_nameservers	No	Array of strings	Specifies the DNS server address. Instructions: Example: "dns_nameservers": ["8.xx.xx.8","8.xx.xx.4"] A maximum of five DNS server addresses are supported. If this parameter is left empty, the default value is null.
host_routes	No	Array of **host_route** objects	Specifies the static VM routes. For details, see **Table 6-79**. Static routes are not supported, and entered information will be ignored.
enable_dhcp	No	Boolean	Specifies whether to enable the DHCP function. Value **false** indicates that the DHCP function is not enabled. The value can only be **true**.

Table 6-78 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 6-79 host_route objects

Parameter	Mandatory	Type	Description
destination	No	String	Specifies the destination subnet of a route.

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Parameter	Mandatory	Type	Description
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 6-80 Response parameter

Parameter	Type	Description
subnet	**subnet** object	Specifies the subnet. For details, see **Table 6-81**.

Table 6-81 subnet objects

Parameter	Type	Description
id	String	Specifies the subnet ID. This parameter is not mandatory when you query subnets.
name	String	Specifies the subnet name.
ip_version	Integer	Specifies the IP address version. The value can be **4** (IPv4) or **6** (IPv6).

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Parameter	Type	Description
ipv6_address_mode	String	Specifies the IPv6 addressing mode. Only **dhcpv6-stateful** is supported.
ipv6_ra_mode	String	Specifies the IPv6 route broadcast mode. Only **dhcpv6-stateful** 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. This parameter cannot be set if the value of **ip_version** is **6**.
gateway_ip	String	The gateway IP address cannot conflict with IP addresses configured for **allocation_pools**. This attribute cannot be modified.

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Parameter	Type	Description
allocation_pools	Array of **allocation_pool** objects	Specifies the available IP address pool. For details, see the **allocation_pool** objects. **Table 6-82** Example: [{ "start": "10.0.0.2", "end": "10.0.0.251"}] The last three and the first IP addresses in each subnet are the ones reserved by the system. For example, in subnet **192.168.1.0/24**, IP addresses 192.168.1.0, 192.168.1.253, 192.168.1.254, and 192.168.1.255 are reserved by the system. By default, the IP addresses reserved by the system are not in the IP address pool specified by **allocation_pool**. [{"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 **allocation_pool** value can contain neither gateway nor broadcast IP addresses.
dns_nameservers	Array of strings	Specifies the DNS server address. Example: "dns_nameservers": ["8.xx.xx.8","8.xx.xx.4"]
host_routes	Array of **host_route** objects	Specifies the static VM routes. For details, see **Table 6-83**. Static routes are not supported, and entered information will be ignored.
tenant_id	String	Specifies the project ID.

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Parameter	Type	Description
enable_dhcp	Boolean	Specifies whether to enable the DHCP function. Value **false** indicates that the DHCP function is not enabled. The value can only be **true**.
subnetpool_id	String	Specifies the subnet pool ID. Currently, only IPv6 is supported.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the subnet is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the subnet is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-82 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 6-83 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",
```


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```
    "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 6-84 Request parameter

Parameter	Type	Mandatory	Description
subnet	**subnet** object	Yes	Specifies the subnet. For details, see **Table 6-85**. You must specify at least one attribute when updating a subnet.

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Table 6-85 subnet objects

Parameter	Mandatory	Type	Description
name	No	String	Specifies the subnet name.
allocation_pools	No	Array of **allocation_pool** objects	Specifies the available IP address pool. For details about the **allocation_pool** objects, see **Table 6-86**. Example: [{ "start": "10.0.0.2", "end": "10.0.0.251"}] The last three and the first IP addresses in each subnet are the ones reserved by the system. For example, in subnet **192.168.1.0/24**, IP addresses 192.168.1.0, 192.168.1.253, 192.168.1.254, and 192.168.1.255 are reserved by the system. By default, the IP addresses reserved by the system are not in the IP address pool specified by **allocation_pool**. [{"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 **allocation_pool** value can contain neither gateway nor broadcast IP addresses.

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Parameter	Mandatory	Type	Description
dns_nameservers	No	Array of strings	Specifies the DNS server address. Instructions: Example: "dns_nameservers": ["8.xx.xx.8","8.xx.xx.4"] A maximum of five DNS server addresses are supported.
host_routes	No	Array of **host_route** objects	Specifies the static VM routes. For details, see **Table 6-87**. Static routes are not supported, and entered information will be ignored.
enable_dhcp	No	Boolean	Specifies whether to enable the DHCP function. Value **false** indicates that the DHCP function is not enabled. The value can only be **true**.

Table 6-86 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 6-87 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.

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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 6-88 Response parameter

Parameter	Type	Description
subnet	**subnet** object	Specifies the subnet. For details, see **Table 6-89**.

Table 6-89 subnet objects

Parameter	Type	Description
id	String	Specifies the subnet ID. This parameter is not mandatory when you query subnets.
name	String	Specifies the subnet name.
ip_version	Integer	Specifies the IP address version. The value can be **4** (IPv4) or **6** (IPv6).
ipv6_address_mode	String	Specifies the IPv6 addressing mode. Only **dhcpv6-stateful** is supported.
ipv6_ra_mode	String	Specifies the IPv6 route broadcast mode. Only **dhcpv6-stateful** is supported.
network_id	String	Specifies the ID of the network to which the subnet belongs.

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Parameter	Type	Description
cidr	String	Specifies the CIDR format. Only the IPv4 addresses in the 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16 ranges are supported. The subnet mask cannot be greater than 28. The IPv6 mask cannot be greater than 128. This parameter cannot be set if the value of **ip_version** is **6**.
gateway_ip	String	The gateway IP address cannot conflict with IP addresses configured for **allocation_pools**. This attribute cannot be modified.

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Parameter	Type	Description
allocation_pools	Array of **allocation_pool** objects	Specifies the available IP address pool. For details, see the **allocation_pool** objects. **Table 6-90** Example: [{ "start": "10.0.0.2", "end": "10.0.0.251"}] The last three and the first IP addresses in each subnet are the ones reserved by the system. For example, in IPv4 subnet 192.168.1.0/24, IP addresses 192.168.1.0, 192.168.1.253, 192.168.1.254, and 192.168.1.255 are reserved by the system. [{"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. By default, the IP addresses reserved by the system are not in the IP address pool specified by **allocation_pool**. When updating an IP address pool, the **allocation_pool** value can contain neither gateway nor broadcast IP addresses.
dns_nameservers	Array of strings	Specifies the DNS server address. Example: "dns_nameservers": ["8.xx.xx.8","8.xx.xx.4"]
host_routes	Array of **host_route** objects	Specifies the static VM routes. For details, see **Table 6-91**. Static routes are not supported, and entered information will be ignored.
tenant_id	String	Specifies the project ID.

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Parameter	Type	Description
enable_dhcp	Boolean	Specifies whether to enable the DHCP function. Value **false** indicates that the DHCP function is not enabled. The value can only be **true**.
subnetpool_id	String	Specifies the subnet pool ID. Currently, only IPv6 is supported.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the subnet is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the subnet is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-90 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 6-91 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",
```


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```
    "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**.

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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 6-92 describes the parameters.

Table 6-92 Parameter description

Parameter	Mandatory	Type	Description
id	No	String	Specifies that the router ID is used as the filtering condition.
admin_state_up	No	Boolean	Specifies that the admin state is used as the filtering condition. The value can be **true** or **false**.
status	No	String	Specifies that the router status is used as the filtering condition. The value can be **ACTIVE**, **DOWN**, or **ERROR**.
tenant_id	No	String	Specifies that the project ID is used as the filtering condition.

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Parameter	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.

Request Parameters

None

Example Request

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


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Response Parameters

Table 6-93 Response parameter

Parameter	Type	Description
routers	Array of **router** objects	Specifies the router list. For details, see **Table 6-94**.
routers_links	Array of **routers_link** objects	Specifies the pagination information. For details, see **Table 6-97**. Only when **limit** is used for filtering and the number of resources exceeds the value of **limit** or 2000 (default value of **limit**), value **next** will be returned for **rel** and a link for **href**.

Table 6-94 router objects

Parameter	Type	Description
id	String	Specifies the router ID. This parameter is not mandatory when you query routers.
name	String	Specifies the router name. The name can contain only letters, digits, underscores (_), hyphens (-), and periods (.).
admin_state_up	Boolean	Specifies the administrative status. The value can only be **true**.
status	String	Specifies the router status. The value can be **ACTIVE**, **DOWN**, or **ERROR**.
tenant_id	String	Specifies the project ID.
external_gateway_info	**external_gateway_info** object	Specifies the external gateway. This is an extended attribute. For details, see the **external_gateway_info** objects.
routes	Array of **route** objects	Specifies a route list. This is an extended attribute. For details, see **Table 6-96**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

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Parameter	Type	Description
created_at	String	Specifies the time (UTC) when the router is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the router is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-95 external_gateway_info objects

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

Table 6-96 route objects

Parameter	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 6-97 routers_link object

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

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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
```


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Response Parameters

Table 6-98 Response parameter

Parameter	Type	Description
router	**router** object	Specifies the router. For details, see **Table 6-99**.

Table 6-99 router objects

Parameter	Type	Description
id	String	Specifies the router ID. This parameter is not mandatory when you query routers.
name	String	Specifies the router name. The name can contain only letters, digits, underscores (_), hyphens (-), and periods (.).
admin_state_up	Boolean	Specifies the administrative status. The value can only be **true**.
status	String	Specifies the router status. The value can be **ACTIVE**, **DOWN**, or **ERROR**.
tenant_id	String	Specifies the project ID.
external_gateway_info	**external_gateway_info** object	Specifies the external gateway. This is an extended attribute. For details, see the **external_gateway_info** objects.
routes	Array of **route** objects	Specifies a route list. This is an extended attribute. For details, see **Table 6-101**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the router is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the router is updated. Format: *yyyy-MM-ddTHH:mm:ss*

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Table 6-100 external_gateway_info objects

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

Table 6-101 route objects

Parameter	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**.

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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 6-102 Request parameter

Parameter	Type	Mandatory	Description
router	**router** object	Yes	Specifies the router. For details, see **Table 6-103**.

Table 6-103 router objects

Parameter	Mandatory	Type	Description
name	No	String	Specifies the router name. Instructions: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
admin_state_up	No	Boolean	Specifies the administrative status. The value can only be **true**.
external_gateway_info	No	**external_gateway_info** object	Specifies the external gateway. This is an extended attribute. For details, see the **external_gateway_info** objects.

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Table 6-104 external_gateway_info objects

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

Example Request

Create a router named **router-test2**.

```
POST https://{Endpoint}/v2.0/routers

{
    "router": {
        "name": "router-test2",
        "admin_state_up": true
    }
}
```

Response Parameters

Table 6-105 Response parameter

Parameter	Type	Description
router	**router** object	Specifies the router. For details, see **Table 6-106**.

Table 6-106 router objects

Parameter	Type	Description
id	String	Specifies the router ID. This parameter is not mandatory when you query routers.
name	String	Specifies the router name. The name can contain only letters, digits, underscores (_), hyphens (-), and periods (.).
admin_state_up	Boolean	Specifies the administrative status. The value can only be **true**.

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Parameter	Type	Description
status	String	Specifies the router status. The value can be **ACTIVE**, **DOWN**, or **ERROR**.
tenant_id	String	Specifies the project ID.
external_gateway_info	**external_gateway_info** object	Specifies the external gateway. This is an extended attribute. For details, see the **external_gateway_info** objects.
routes	Array of **route** objects	Specifies a route list. This is an extended attribute. For details, see **Table 6-108**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the router is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the router is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-107 external_gateway_info objects

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

Table 6-108 route objects

Parameter	Type	Description
destination	String	Specifies the IP address range.

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Parameter	Type	Description
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 6-109 Request parameter

Parameter	Mandatory	Type	Description
router	Yes	router object	Specifies the router. For details, see **Table 6-110**. You must specify at least one attribute when updating a router.

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Table 6-110 router objects

Parameter	Mandatory	Type	Description
name	No	String	Specifies the router name. Instructions: The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
admin_state_up	No	Boolean	Specifies the administrative status. The value can only be **true**.
external_gateway_info	No	**external_gateway_info** object	Specifies the external gateway. This is an extended attribute. For details, see the **external_gateway_info** objects.
routes	No	Array of **route** objects	Specifies a route list. This is an extended attribute. For details, see **Table 6-112**.

Table 6-111 external_gateway_info objects

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

Table 6-112 route objects

Parameter	Mandatory	Type	Description
destination	No	String	Specifies the IP address range. Instructions: The prefix cannot be the same as that of a direct route.

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Parameter	Mandatory	Type	Description
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 6-113 Response parameter

Parameter	Type	Description
router	**router** object	Specifies the router. For details, see **Table 6-114**.

Table 6-114 router objects

Parameter	Type	Description
id	String	Specifies the router ID. This parameter is not mandatory when you query routers.
name	String	Specifies the router name. The name can contain only letters, digits, underscores (_), hyphens (-), and periods (.).
admin_state_up	Boolean	Specifies the administrative status. The value can only be **true**.
status	String	Specifies the router status. The value can be **ACTIVE**, **DOWN**, or **ERROR**.

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Parameter	Type	Description
tenant_id	String	Specifies the project ID.
external_gateway_info	**external_gateway_info** object	Specifies the external gateway. This is an extended attribute. For details, see the **external_gateway_info** objects.
routes	Array of **route** objects	Specifies a route list. This is an extended attribute. For details, see **Table 6-116**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the router is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the router is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-115 external_gateway_info objects

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

Table 6-116 route objects

Parameter	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.

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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**.

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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 6-117 Request parameter

Parameter	Type	Mandatory	Description
subnet_id	String	No	Specifies the subnet ID. Either **subnet_id** or **port_id** is used. Use the gateway IP address of the subnet to create a router interface.
port_id	String	No	Specifies the port ID. Either **subnet_id** or **port_id** is used. Use the port IP address to create a router interface.

Example Request

Add an interface to the router. The router ID is i5b8e885c-1347-4ac2-baf9-2249c8ed1270, and the subnet ID is ab78be2d-782f-42a5-aa72-35879f6890ff.

```
PUT https://{Endpoint}/v2.0/routers/5b8e885c-1347-4ac2-baf9-2249c8ed1270/add_router_interface

{"subnet_id": "ab78be2d-782f-42a5-aa72-35879f6890ff"}
```


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Response Parameters

Table 6-118 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

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Request Parameters

Table 6-119 Request parameter

Parameter	Type	Mandatory	Description
subnet_id	String	No	Specifies the subnet ID. Either **subnet_id** or **port_id** must be specified. Use the gateway IP address of the subnet to create a router interface.
port_id	String	No	Specifies the port ID. Either **subnet_id** or **port_id** is used. Use the port IP address to create a router interface.

Example Request

Remove an interface from a router. The router ID is b625c58c-0cfe-49e0-acc8-f2374f8187ff, and the subnet ID is 4b910a10-0860-428b-b463-d84dbc5e288e.

```
PUT https://{Endpoint}/v2.0/routers/b625c58c-0cfe-49e0-acc8-f2374f8187ff/remove_router_interface

{"subnet_id": "4b910a10-0860-428b-b463-d84dbc5e288e"}
```

Response Parameters

Table 6-120 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**.

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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. A maximum of 2,000 records can be returned for each query operation. If the number of records exceeds 2,000, the pagination marker will be returned.

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_version}&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 6-121 describes the parameters.

Table 6-121 Parameter description

Parameter	Mandatory	Type	Description
id	No	String	Specifies that the network ACL rule ID is used as the filtering condition.
name	No	String	Specifies that the network ACL rule name is used as the filtering condition.
description	No	String	Specifies that the network ACL rule description is used as the filtering condition.
ip_version	No	Integer	Specifies that the IP address version is used as the filtering condition. The value can be **4** (IPv4) or **6** (IPv6).

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Parameter	Mandatory	Type	Description
action	No	String	Specifies that the network ACL rule action is used as the filtering condition. The value can be **allow** or **deny**.
enabled	No	Boolean	Specifies that the network ACL rule is enabled is used as the filtering condition. The value can be **true** or **false**.
tenant_id	No	String	Specifies that the project ID is used as the filtering condition.
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.

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

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/fwaas/firewall_rules
```

Response Parameters

Table 6-122 Response parameter

Parameter	Type	Description
firewall_rules	Array of **Firewall Rule** objects	Specifies the firewall rule list. For details, see **Table 6-124**. A maximum of 2,000 records can be returned for each query operation. If the number of records exceeds 2,000, the pagination marker will be returned.
firewall_rules_links	Array of **firewall_rules_link** Object	Specifies the pagination information. For details, see **Table 6-123**. Only when **limit** is used for filtering and the number of resources exceeds the value of **limit** or 2000 (default value of **limit**), value **next** will be returned for **rel** and a link for **href**.

Table 6-123 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.

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Table 6-124 Firewall Rule objects

Parameter	Type	Description
id	String	Specifies the UUID of the network ACL rule.
name	String	Specifies the network ACL rule name.
description	String	Provides supplementary information about the network ACL rule.
tenant_id	String	Specifies the project ID.
public	Boolean	Specifies whether the firewall rule can be shared by different tenants.
protocol	String	Specifies the IP protocol.
source_port	String	Specifies the source port number or port number range.
destination_port	String	Specifies the destination port number or port number range.
ip_version	Integer	Specifies the IP protocol version.
source_ip_address	String	Specifies the source IP address or CIDR block.
destination_ip_address	String	Specifies the destination IP address or CIDR block.
action	String	Specifies action performed on traffic passing through the network ACL.
enabled	Boolean	Specifies whether the network ACL rule is enabled.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

Example Response


```
{
   "firewall_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,
```


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```
            "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 6-125 describes the parameters.

Table 6-125 Parameter description

Parameter	Mandatory	Type	Description
firewall_rule_id	Yes	String	Specifies the network ACL rule ID, which uniquely identifies the network ACL rule. The **firewall_rule_id** value is used as the filter.

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Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/fwaas/firewall_rules/514e6776-162a-4b5d-ab8b-aa36b86655ef
```

Response Parameters

Table 6-126 Response parameter

Parameter	Type	Description
firewall_rule	**firewall_rule** object	Specifies the firewall rule objects. For details, see **Table 6-127**.

Table 6-127 Firewall Rule objects

Parameter	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.

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Parameter	Type	Description
enabled	Boolean	Specifies whether the network ACL rule is enabled.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

Example Response

```
{
    "firewall_rule": {
        "protocol": "tcp",
        "description": "update check parameter",
        "source_ip_address": "116.66.184.0/24",
        "destination_ip_address": "0.0.0.0/0",
        "destination_port": null,
        "source_port": null,
        "id": "514e6776-162a-4b5d-ab8b-aa36b86655ef",
        "name": "test",
        "tenant_id": "a1c6f90c94334bd2953d9a61b8031a68",
        "project_id": "a1c6f90c94334bd2953d9a61b8031a68",
        "enabled": true,
        "action": "allow",
        "ip_version": 4,
        "public": false
    }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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

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Request Parameters

Table 6-128 Request parameter

Parameter	Mandatory	Type	Description
firewall_rule	Yes	**firewall_rule** object	Specifies the firewall rule objects. For details, see **Table 6-129**.

Table 6-129 Firewall Rule objects

Parameter	Mandatory	Type	Constraint	Description
name	No	String	The value can contain a maximum of 255 characters.	Specifies the network ACL rule name. The value can contain a maximum of 255 characters.
description	No	String	The value can contain a maximum of 255 characters.	Provides supplementary information about the network ACL rule. The value can contain a maximum of 255 characters.
protocol	No	String	The value can be **TCP**, **UDP**, or **ICMP**.	Specifies the IP protocol. The value can be **TCP**, **UDP**, or **ICMP**.
source_port	No	String	The value can be an integer from 1 to 65535 or a port number range in the format of ***a*:*b***.	Specifies the source port number or port number range. The value can be an integer from 1 to 65535 or a port number range in the format of ***a*:*b***.
destination_port	No	String	The value can be an integer from 1 to 65535 or a port number range in the format of ***a*:*b***.	Specifies the destination port number or port number range. The value can be an integer from 1 to 65535 or a port number range in the format of ***a*:*b***.

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Parameter	Mandatory	Type	Constraint	Description
ip_version	No	Integer	4/6	Specifies the IP protocol version. The value can be **4** and **6**, indicating IPv4 address and IPv6 address, respectively.
source_ip_address	No	String	N/A	Specifies the source IP address or CIDR block.
destination_ip_address	No	String	N/A	Specifies the destination IP address or CIDR block.
action	No	String	deny/allow	Specifies action performed on traffic passing through the network ACL. The value can be **deny** or **allow**.
enabled	No	Boolean	The value can be **true** or **false**.	Specifies whether the network ACL rule is enabled. The value can be **true** or **false**.

Example Request

Create an ACL rule with **action** set to **allow**, **protocol** set to **tcp**, and destination port set to 80.

```
POST https://{Endpoint}/v2.0/fwaas/firewall_rules

{
    "firewall_rule": {
        "action": "allow",
        "enabled": true,
        "destination_port": "80",
        "protocol": "tcp",
        "name": "ALLOW_HTTP"
    }
}
```


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Response Parameters

Table 6-130 Response parameter

Parameter	Type	Description
firewall_rule	**firewall_rule** object	Specifies the firewall rule objects. For details, see **Table 6-131**.

Table 6-131 Firewall Rule objects

Parameter	Type	Description
id	String	Specifies the UUID of the network ACL rule.
name	String	Specifies the network ACL rule name.
description	String	Provides supplementary information about the network ACL rule.
tenant_id	String	Specifies the project ID.
public	Boolean	Specifies whether the firewall rule can be shared by different tenants.
protocol	String	Specifies the IP protocol.
source_port	String	Specifies the source port number or port number range.
destination_port	String	Specifies the destination port number or port number range.
ip_version	Integer	Specifies the IP protocol version.
source_ip_address	String	Specifies the source IP address or CIDR block.
destination_ip_address	String	Specifies the destination IP address or CIDR block.
action	String	Specifies action performed on traffic passing through the network ACL.
enabled	Boolean	Specifies whether the network ACL rule is enabled.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

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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 6-132 Request parameter

Parameter	Type	Mandatory	Description
firewall_rule	**firewall_rule** object	Yes	Specifies the firewall rule objects. For details, see **Table 6-133**.

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Table 6-133 Firewall Rule objects

Parameter	Mandatory	Type	Description
name	No	String	Specifies the network ACL rule name. The value can contain a maximum of 255 characters.
description	No	String	Provides supplementary information about the network ACL rule. The value can contain a maximum of 255 characters.
protocol	No	String	Specifies the IP protocol. The value can be **TCP**, **UDP**, **ICMP**, or a value ranging from 0 to 255.
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 ***a*:*b***.
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 ***a*:*b***.
ip_version	No	Integer	Specifies the IP protocol version. The value can be **4** and **6**, indicating IPv4 address and IPv6 address, respectively.
source_ip_address	No	String	Specifies the source IP address or CIDR block.
destination_ip_address	No	String	Specifies the destination IP address or CIDR block.
action	No	String	Specifies action performed on traffic passing through the network ACL. The value can be **deny** or **allow**.

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Parameter	Mandatory	Type	Description
enabled	No	Boolean	Specifies whether the network ACL rule is enabled. The value can be **true** or **false**.

Example Request

Change the **action** of the ACL rule whose ID is b94acf06-efc2-485d-ba67-a61acf2a7e28 to **deny**.

```
PUT https://{Endpoint}/v2.0/fwaas/firewall_rules/b94acf06-efc2-485d-ba67-a61acf2a7e28

{
    "firewall_rule": {
        "action": "deny"
    }
}
```

Response Parameters

Table 6-134 Response parameter

Parameter	Type	Description
firewall_rule	**firewall_rule** object	Specifies the firewall rule objects. For details, see **Table 6-135**.

Table 6-135 Firewall Rule objects

Parameter	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.

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Parameter	Type	Description
destination_port	String	Specifies the destination port number or port number range.
ip_version	Integer	Specifies the IP protocol version.
source_ip_address	String	Specifies the source IP address or CIDR block.
destination_ip_address	String	Specifies the destination IP address or CIDR block.
action	String	Specifies action performed on traffic passing through the network ACL.
enabled	Boolean	Specifies whether the network ACL rule is enabled.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

Example Response

```
{
    "firewall_rule": {
        "protocol": "tcp",
        "description": "",
        "source_ip_address": null,
        "destination_ip_address": null,
        "source_port": null,
        "destination_port": "80",
        "id": "b94acf06-efc2-485d-ba67-a61acf2a7e28",
        "name": "ALLOW_HTTP",
        "tenant_id": "23c8a121505047b6869edf39f3062712",
        "enabled": true,
        "action": "deny",
        "ip_version": 4,
        "public": false,
        "project_id": "23c8a121505047b6869edf39f3062712"
    }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

6.6.5 Deleting a Network ACL Rule

Function

This API is used to delete a network ACL rule.

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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 6-136 describes the parameters.

Table 6-136 Parameter description

Parameter	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. A maximum of 2000 records can be returned for each

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query operation. If the number of records exceeds 2000, the pagination marker will be returned. For details, see section **Pagination**.

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 6-137 describes the parameters.

Table 6-137 Parameter description

Parameter	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.
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.

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Parameter	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.

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Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/fwaas/firewall_policies
```

Response Parameters

Table 6-138 Response parameter

Parameter	Type	Description
firewall_policies	Array of **firewall Policy** object	Specifies the firewall policies. For details, see **Table 6-139**.
firewall_policies_links	Array of **firewall_policies_link** object	**firewall_policies_link** object. For details, see **Table 6-140**. Only when **limit** is used for filtering and the number of resources exceeds the value of **limit** or 2000 (default value of **limit**), value **next** will be returned for **rel** and a link for **href**.

Table 6-139 firewall_Policy object

Parameter	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 rules referenced by the network ACL policy.
audited	Boolean	Specifies the audit flag.
public	Boolean	Specifies whether the policy can be shared by different tenants.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

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Table 6-140 firewall_policies_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

```
{
   "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**.

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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 6-141 describes the parameters.

Table 6-141 Parameter description

Parameter	Mandatory	Type	Description
firewall_policy_id	Yes	String	Specifies the network ACL policy ID, which uniquely identifies the network ACL policy. The **firewall_policy_id** value is used as the filter.

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/fwaas/firewall_policies/fed2d88f-d0e7-4cc5-bd7e-c495f67037b6
```

Response Parameters

Table 6-142 Response parameter

Parameter	Type	Description
firewall_policy	**firewall_policy** object	Specifies the firewall policy. For details, see Table 6-143.

Table 6-143 Firewall Policy objects

Parameter	Type	Description
id	String	Specifies the UUID of the network ACL policy.
name	String	Specifies the name of the network ACL policy.

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Parameter	Type	Description
description	String	Provides supplementary information about the network ACL policy.
tenant_id	String	Specifies the project ID.
firewall_rules	Array of strings	Specifies the firewall rules referenced by the network ACL policy.
audited	Boolean	Specifies the audit flag.
public	Boolean	Specifies whether the firewall policy can be shared by different tenants.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

Example Response

```
{
    "firewall_policy": {
        "description": "",
        "firewall_rules": [
            "3c0e6267-73df-4d9a-87a6-e226f2db2036"
        ],
        "tenant_id": "23c8a121505047b6869edf39f3062712",
        "public": false,
        "id": "fed2d88f-d0e7-4cc5-bd7e-c495f67037b6",
        "audited": false,
        "name": "bobby_fwp1",
        "project_id": "23c8a121505047b6869edf39f3062712"
    }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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. You can learn more about the **relationships among network ACL groups, policies, and rules**.

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URI

POST /v2.0/fwaas/firewall_policies

Request Parameters

Table 6-144 Request parameter

Parameter	Type	Mandatory	Description
firewall_policy	**firewall_policy** object	Yes	Specifies the firewall policy. For details, see **Table 6-145**.

Table 6-145 Firewall Policy objects

Parameter	Mandatory	Type	Description
name	No	String	Specifies the name of the network ACL policy. The value can contain a maximum of 255 characters.
description	No	String	Provides supplementary information about the network ACL policy. The value can contain a maximum of 255 characters.
firewall_rules	No	Array of strings	Specifies the firewall rules referenced by the network ACL policy.
audited	No	Boolean	Specifies the audit flag. The value can be **true** or **false**.

Example Request

Create an ACL policy named **test-policy** and associate it with the ACL rule whose ID is b8243448-cb3c-496e-851c-dadade4c161b.

```
POST https://{Endpoint}/v2.0/fwaas/firewall_policies

{
    "firewall_policy": {
        "name": "test-policy",
        "firewall_rules": [
            "b8243448-cb3c-496e-851c-dadade4c161b"
        ]
    }
}
```


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Response Parameters

Table 6-146 Response parameter

Parameter	Type	Description
firewall_policy	**firewall_policy** object	Specifies the firewall policy. For details, see **Table 6-147**.

Table 6-147 Firewall Policy objects

Parameter	Type	Description
id	String	Specifies the UUID of the network ACL policy.
name	String	Specifies the name of the network ACL policy.
description	String	Provides supplementary information about the network ACL policy.
tenant_id	String	Specifies the project ID.
firewall_rules	Array of strings	Specifies the firewall rules referenced by the network ACL policy.
audited	Boolean	Specifies the audit flag.
public	Boolean	Specifies whether the firewall policy can be shared by different tenants.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

Example Response

```
{
    "firewall_policy": {
        "description": "",
        "firewall_rules": [
            "b8243448-cb3c-496e-851c-dadade4c161b"
        ],
        "tenant_id": "23c8a121505047b6869edf39f3062712",
        "public": false,
        "id": "2fb0e81f-9f63-44b2-9894-c13a3284594a",
        "audited": false,
        "name": "test-policy",
        "project_id": "23c8a121505047b6869edf39f3062712"
    }
}
```


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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 6-148 Request parameter

Parameter	Type	Mandatory	Description
firewall_policy	**firewall_policy** object	Yes	Specifies the firewall policy objects. For details, see **Table 6-149**.

Table 6-149 Firewall Policy objects

Parameter	Mandatory	Type	Description
name	No	String	Specifies the name of the network ACL policy. The value can contain a maximum of 255 characters.
description	No	String	Provides supplementary information about the network ACL policy. The value can contain a maximum of 255 characters.
firewall_rules	No	Array of strings	Specifies the firewall rules referenced by the network ACL policy.
audited	No	Boolean	Specifies the audit flag. The value can be **true** or **false**.

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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 6-150 Response parameter

Parameter	Type	Description
firewall_policy	**firewall_policy** object	Specifies the firewall policy objects. For details, see **Table 6-151**.

Table 6-151 Firewall Policy objects

Parameter	Type	Description
id	String	Specifies the UUID of the network ACL policy.
name	String	Specifies the name of the network ACL policy.
description	String	Provides supplementary information about the network ACL policy.
tenant_id	String	Specifies the project ID.
firewall_rules	Array of strings	Specifies the firewall rules referenced by the network ACL policy.
audited	Boolean	Specifies the audit flag.
public	Boolean	Specifies whether the firewall policy can be shared by different tenants.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

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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 6-152 describes the parameters.

Table 6-152 Parameter description

Parameter	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

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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 6-153 describes the parameters.

Table 6-153 Parameter description

Parameter	Mandatory	Type	Description
firewall_policy_id	Yes	String	Specifies the network ACL policy ID, which uniquely identifies the network ACL policy.

Request Parameters

Table 6-154 Request parameter

Parameter	Type	Mandatory	Description
firewall_rule_id	String	Yes	Specifies the network ACL rule ID, which uniquely identifies the network ACL rule.

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Parameter	Type	Mandatory	Description
insert_after	String	No	The **insert_after** parameter indicates the firewall rule that has already been associated with the firewall policy. A new firewall rule will be inserted after the firewall rule associated with the firewall policy. If both the **insert_after** and **insert_before** parameters are specified, the **insert_after** parameter will be ignored.
insert_before	String	No	The **insert_before** parameter indicates the firewall rule that has already been associated with the firewall policy. A new firewall rule will be inserted before the firewall rule associated with the firewall policy. If both the **insert_after** and **insert_before** parameters are specified, the **insert_after** parameter will be ignored.

Example Request

Insert rule 0f82b221-8cd6-44bd-9dfc-0e118fa7b6b1 below rule b8243448-cb3c-496e-851c-dadade4c161b in the ACL policy whose ID is afc52ce9-5305-4ec9-9feb-44feb8330341.

```
PUT https://{Endpoint}/v2.0/fwaas/firewall_policies/afc52ce9-5305-4ec9-9feb-44feb8330341/insert_rule

{
    "insert_after": "b8243448-cb3c-496e-851c-dadade4c161b",
    "firewall_rule_id": "0f82b221-8cd6-44bd-9dfc-0e118fa7b6b1",
    "insert_before": ""
}
```

Response Parameters

Table 6-155 Response parameter

Parameter	Type	Description
description	String	Provides supplementary information about the firewall policy.
audited	Boolean	Each time the firewall policy or the associated firewall rules are changed, this attribute will be set to **False**.

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Parameter	Type	Description
firewall_rules	Array of strings	Specifies the ID list of the firewall rules associated with the current firewall policy.
id	String	Specifies the firewall policy ID.
name	String	Specifies the firewall policy name.
public	Boolean	If this attribute is set to **true**, the network ACL policy is visible to tenants other than its owner. The network ACL policy is not visible to other tenants by default.
tenant_id	String	Specifies the project ID.
project_id	String	Specifies the project ID.

Example Response

```
{
    "description": "",
    "firewall_rules": [
        "b8243448-cb3c-496e-851c-dadade4c161b",
        "0f82b221-8cd6-44bd-9dfc-0e118fa7b6b1"
    ],
    "tenant_id": "23c8a121505047b6869edf39f3062712",
    "public": false,
    "id": "afc52ce9-5305-4ec9-9feb-44feb8330341",
    "audited": false,
    "name": "test-policy",
    "project_id": "23c8a121505047b6869edf39f3062712"
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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

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Request Parameters

Table 6-156 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 6-157 Response parameter

Parameter	Type	Description
description	String	Provides supplementary information about the firewall policy.
audited	Boolean	Each time the firewall policy or the associated firewall rules are changed, this attribute will be set to **False**.
firewall_rules	Array of strings	Specifies the ID list of the firewall rules associated with the current firewall policy.
id	String	Specifies the firewall policy ID.
name	String	Specifies the firewall policy name.
public	Boolean	If this attribute is set to **true**, the network ACL policy is visible to tenants other than its owner. The network ACL policy is not visible to other tenants by default.
tenant_id	String	Specifies the project ID.
project_id	String	Specifies the project ID.

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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. A maximum of 2,000 records can be returned for each query operation. If the number of records exceeds 2,000, the pagination marker will be returned.

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 6-158 describes the parameters.

Table 6-158 Parameter description

Parameter	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.

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Parameter	Mandatory	Type	Description
description	No	String	Specifies that the description of the network ACL group is used as the filtering condition.
admin_state_up	No	Boolean	Specifies that the admin state of the network ACL group is used as the filtering condition. The value can be **true** or **false**.
tenant_id	No	String	Specifies that the project ID of the network ACL group is used as the filtering condition.
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. ● If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. ● If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. ● If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. ● If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.

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

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/fwaas/firewall_groups
```

Response Parameters

Table 6-159 Response parameter

Parameter	Type	Description
firewall_groups	Array of **Firewall Group** objects	Specifies the firewall group list. For details, see **Table 6-160**.
firewall_groups_links	Array of **firewall_groups_link** objects	Specifies the **firewall_groups_link** object list. For details, see **Table 6-161**. Only when **limit** is used for filtering and the number of resources exceeds the value of **limit** or 2000 (default value of **limit**), value **next** will be returned for **rel** and a link for **href**.

Table 6-160 Firewall Group objects

Parameter	Type	Description
id	String	Specifies the UUID of the network ACL group.
name	String	Specifies the name of the network ACL group.

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Parameter	Type	Description
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. The value can be: • **ACTIVE** (Normal) • **INACTIVE** (Inactive) • **ERROR** (Error occurred) • **PENDING_CREATE** (Creating) • **PENDING_UPDATE** (Updating) • **PENDING_DELETE** (Deleting)
admin_state_up	Boolean	Specifies the administrative status of the network ACL.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the resource is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the resource is updated. Format: *yyyy-MM-ddTHH:mm:ss*

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Table 6-161 firewall_groups_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

```
{
   "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**.

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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 6-162 describes the parameters.

Table 6-162 Parameter description

Parameter	Mandatory	Type	Description
firewall_group_id	Yes	String	Specifies the network ACL group ID, which uniquely identifies the network ACL group. The **fire_group_id** value is used as the filter.

Request Parameters

None

Example Request

```
GET https://{Endpoint}/v2.0/fwaas/firewall_groups/a504a4cf-9300-40e0-b2d4-649bd157c55a
```

Response Parameters

Table 6-163 Response parameter

Parameter	Type	Description
firewall_group	**firewall_group** object	Specifies the firewall group. For details, see Table 6-164.

Table 6-164 Firewall Group objects

Parameter	Type	Description
id	String	Specifies the UUID of the network ACL group.
name	String	Specifies the name of the network ACL group.

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Parameter	Type	Description
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. The value can be: • **ACTIVE** (Normal) • **INACTIVE** (Inactive) • **ERROR** (Error occurred) • **PENDING_CREATE** (Creating) • **PENDING_UPDATE** (Updating) • **PENDING_DELETE** (Deleting)
admin_state_up	Boolean	Specifies the administrative status of the network ACL.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the resource is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the resource is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Example Response

```
{
    "firewall_group": {
        "status": "ACTIVE",
```

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```
    "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 6-165 Request parameter

Parameter	Type	Mandatory	Description
firewall_group	**firewall_group** object	Yes	Specifies the firewall group. For details, see **Table 6-166**.

Table 6-166 Firewall Group objects

Parameter	Mandatory	Type	Description
name	No	String	Specifies the name of the network ACL group. The value can contain a maximum of 255 characters.

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Parameter	Mandatory	Type	Description
description	No	String	Provides supplementary information about the network ACL group. The value can contain a maximum of 255 characters.
ingress_firewall_policy_id	No	String	Specifies the network ACL policy for inbound traffic.
egress_firewall_policy_id	No	String	Specifies the network ACL policy for outbound traffic.
ports	No	Array of strings	Specifies the list of ports bound with the network ACL group. The value must be the port ID. **NOTE** The port is the one whose **device_owner** is **network:router_interface_distributed**. • Call the VPC API for querying the port ID. The filtering criteria are the specified **network_id** and **device_owner**. The **network_id** is the network ID of the subnet associated with the network ACL. Example: `GET https://{Endpoint}/v1/{project_id}/ports?network_id={network_id}&device_owner=network%3Arouter_interface_distributed`
admin_state_up	No	Boolean	Specifies the administrative status of the network ACL. The value can be **true** or **false**.

Example Request

Create an ACL group, associate it with the inbound ACL policy afc52ce9-5305-4ec9-9feb-44feb8330341, and set the port ID to c133f2bf-6937-4416-bb17-012e1be5cd2d.

```
POST https://{Endpoint}/v2.0/fwaas/firewall_groups

{
   "firewall_group": {
      "name": "test",
      "ingress_firewall_policy_id": "afc52ce9-5305-4ec9-9feb-44feb8330341",
```


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```
    "ports": [
      "c133f2bf-6937-4416-bb17-012e1be5cd2d"
    ]
  }
}
```

Response Parameters

Table 6-167 Response parameter

Parameter	Type	Description
firewall_group	**firewall_group** object	Specifies the firewall group. For details, see **Table 6-168**.

Table 6-168 Firewall Group objects

Parameter	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.

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Parameter	Type	Description
status	String	Specifies the status of the network ACL policy. The value can be: • **ACTIVE** (Normal) • **INACTIVE** (Inactive) • **ERROR** (Error occurred) • **PENDING_CREATE** (Creating) • **PENDING_UPDATE** (Updating) • **PENDING_DELETE** (Deleting)
admin_state_up	Boolean	Specifies the administrative status of the network ACL.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the resource is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the resource is updated. Format: *yyyy-MM-ddTHH:mm:ss*

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

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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 6-169 Request parameter

Parameter	Type	Mandatory	Description
firewall_group	**firewall_group** object	Yes	Specifies the firewall group. For details, see **Table 6-170**.

Table 6-170 Firewall Group objects

Parameter	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.

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Parameter	Mandatory	Type	Description
ports	No	Array of strings	Specifies the list of ports bound with the network ACL group. The value must be the port ID. **NOTE** The port is the one whose **device_owner** is **network:router_interface_distributed**. • Call the VPC API for querying the port ID. The filtering criteria are the specified **network_id** and **device_owner**. The **network_id** is the network ID of the subnet associated with the network ACL. Example: GET https://{Endpoint}/v1/{project_id}/ports?network_id={network_id}&device_owner=network%3Arouter_interface_distributed
admin_state_up	No	Boolean	Specifies the administrative status of the network ACL. The value can be **true** or **false**.

Example Request

Associate the ACL group whose ID is 2fb0e81f-9f63-44b2-9894-c13a3284594a with the outbound ACL policy 53f36c32-db25-4856-a0ba-e605fd88c5e9.

```
PUT https://{Endpoint}/v2.0/fwaas/firewall_groups/2fb0e81f-9f63-44b2-9894-c13a3284594a

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

Response Parameters

Table 6-171 Response parameter

Parameter	Type	Description
firewall_group	**firewall_group** object	Specifies the firewall group. For details, see **Table 6-172**.

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Table 6-172 Firewall Group objects

Parameter	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. The value can be: • **ACTIVE** (Normal) • **INACTIVE** (Inactive) • **ERROR** (Error occurred) • **PENDING_CREATE** (Creating) • **PENDING_UPDATE** (Updating) • **PENDING_DELETE** (Deleting)
admin_state_up	Boolean	Specifies the administrative status of the network ACL.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the resource is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the resource is updated. Format: *yyyy-MM-ddTHH:mm:ss*

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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 6-173 describes the parameters.

Table 6-173 Parameter description

Parameter	Mandatory	Type	Description
firewall_group_id	Yes	String	Specifies the network ACL group ID, which uniquely identifies the network ACL group.

Request Parameters

None

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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. A maximum of 2,000 records can be returned for each query operation. If the number of records exceeds 2,000, the pagination marker will be returned.

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 6-174 describes the parameters.

Table 6-174 Parameter description

Parameter	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.

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Parameter	Mandatory	Type	Description
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.
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. ● If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. ● If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. ● If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. ● If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.

Request Parameters

None

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Example Request

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

Response Parameters

Table 6-175 Response parameter

Parameter	Type	Description
security_groups	Array of **Security Group** objects	Specifies the security group list. For details, see **Table 6-176**.
security_groups_links	Array of **SecurityGroupsLink** objects	Shows pagination information about security groups. Only when **limit** is used for filtering and the number of resources exceeds the value of **limit** or 2000 (default value of **limit**), value **next** will be returned for **rel** and a link for **href**.

Table 6-176 Security Group objects

Parameter	Type	Description
id	String	Specifies the security group ID. This parameter is not mandatory when you query security groups.
tenant_id	String	Specifies the project ID.
name	String	Specifies the security group name.
description	String	Provides supplementary information about the security group.
security_group_rules	Array of **Security Group Rule** objects	Specifies the security group rule list. For details, see **Table 6-177**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the security group is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the security group is updated. Format: *yyyy-MM-ddTHH:mm:ss*

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Table 6-177 Security Group Rule objects

Parameter	Type	Description
id	String	Specifies the security group rule ID. This parameter is not mandatory when you query security group rules.
description	String	Provides supplementary information about the security group rule.
security_group_id	String	Specifies the ID of the belonged security group.
remote_group_id	String	Specifies the peer ID of the belonged security group.
direction	String	Specifies the direction of the traffic for which the security group rule takes effect.
remote_ip_prefix	String	Specifies the peer IP address segment.
protocol	String	Specifies the protocol type or the IP protocol number.
port_range_max	Integer	Specifies the maximum port number. When ICMP is used, the value is the ICMP code.
port_range_min	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both **port_range_max** and **port_range_min** must be specified, and the **port_range_max** value must be greater than the **port_range_min** value. When the ICMP protocol is used, if you specify the ICMP code (**port_range_max**), you must also specify the ICMP type (**port_range_min**).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.

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Parameter	Type	Description
remote_address_group_id	String	• Specifies the remote IP address group ID. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the security group rule is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the security group rule is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-178 SecurityGroupsLink objects

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

Example Response

```
{
   "security_groups": [
      {
         "id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
         "name": "sg-ad3f",
         "description": "",
         "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
         "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
         "security_group_rules": [
            {
               "id": "d90e55ba-23bd-4d97-b722-8cb6fb485d69",
               "direction": "ingress",
               "protocol": null,
               "ethertype": "IPv4",
               "description": null,
               "remote_group_id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
               "remote_ip_prefix": null,
               "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
               "port_range_max": null,
               "port_range_min": null,
               "security_group_id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
               "remote_address_group_id": "0150a3a7-82ca-4569-865c-04e46e5e9249"
            },
            {
```


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```
                "id": "aecff4d4-9ce9-489c-86a3-803aedec65f7",
                "direction": "egress",
                "protocol": null,
                "ethertype": "IPv4",
                "description": null,
                "remote_group_id": null,
                "remote_ip_prefix": null,
                "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
                "port_range_max": null,
                "port_range_min": null,
                "security_group_id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
                "remote_address_group_id": null
            }
        ],
        "created_at": "2018-09-12T08:24:14",
        "updated_at": "2018-09-12T08:24:14"
    }
  ],
  "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
```


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Response Parameters

Table 6-179 Response parameter

Parameter	Type	Description
security_group	**security_group** object	Specifies the security group. For details, see **Table 6-180**.

Table 6-180 Security Group objects

Parameter	Type	Description
id	String	Specifies the security group ID. This parameter is not mandatory when you query security groups.
tenant_id	String	Specifies the project ID.
name	String	Specifies the security group name.
description	String	Provides supplementary information about the security group.
security_group_rules	Array of **Security Group Rule** objects	Specifies the security group rule list. For details, see **Table 6-181**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the security group is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the security group is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-181 Security Group Rule objects

Parameter	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.

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Parameter	Type	Description
security_group_id	String	Specifies the ID of the belonged security group.
remote_group_id	String	Specifies the peer ID of the belonged security group.
direction	String	Specifies the direction of the traffic for which the security group rule takes effect.
remote_ip_prefix	String	Specifies the peer IP address segment.
protocol	String	Specifies the protocol type or the IP protocol number.
port_range_max	Integer	Specifies the maximum port number. When ICMP is used, the value is the ICMP code.
port_range_min	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both **port_range_max** and **port_range_min** must be specified, and the **port_range_max** value must be greater than the **port_range_min** value. When the ICMP protocol is used, if you specify the ICMP code (**port_range_max**), you must also specify the ICMP type (**port_range_min**).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
remote_address_group_id	String	• Specifies the remote IP address group ID. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

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Parameter	Type	Description
created_at	String	Specifies the time (UTC) when the security group rule is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the security group rule is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Example Response

```
{
   "security_group": {
      "id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
      "name": "sg-ad3f",
      "description": "",
      "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
      "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
      "security_group_rules": [
         {
            "id": "d90e55ba-23bd-4d97-b722-8cb6fb485d69",
            "direction": "ingress",
            "protocol": null,
            "ethertype": "IPv4",
            "description": null,
            "remote_group_id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
            "remote_ip_prefix": null,
            "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
            "port_range_max": null,
            "port_range_min": null,
            "security_group_id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
            "remote_address_group_id": "0150a3a7-82ca-4569-865c-04e46e5e9249"
         },
         {
            "id": "aecff4d4-9ce9-489c-86a3-803aedec65f7",
            "direction": "egress",
            "protocol": null,
            "ethertype": "IPv4",
            "description": null,
            "remote_group_id": null,
            "remote_ip_prefix": null,
            "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
            "port_range_max": null,
            "port_range_min": null,
            "security_group_id": "0431c9c5-1660-42e0-8a00-134bec7f03e2",
            "remote_address_group_id": null
         }
      ],
      "created_at": "2018-09-12T08:24:14",
      "updated_at": "2018-09-12T08:24:14"
   }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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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 6-182 Request parameter

Parameter	Mandatory	Type	Description
security_group	Yes	**security_group** object	Specifies the security group. For details, see **Table 6-183**.

Table 6-183 Security Group objects

Parameter	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"
    }
}
```


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Response Parameters

Table 6-184 Response parameter

Parameter	Type	Description
security_group	**security_group** object	Specifies the security group. For details, see **Table 6-185**.

Table 6-185 Security Group objects

Parameter	Type	Description
id	String	Specifies the security group ID. This parameter is not mandatory when you query security groups.
tenant_id	String	Specifies the project ID.
name	String	Specifies the security group name.
description	String	Provides supplementary information about the security group.
security_group_rules	Array of **Security Group Rule** objects	Specifies the security group rule list. For details, see **Table 6-186**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the security group is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the security group is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-186 Security Group Rule objects

Parameter	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.

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Parameter	Type	Description
security_group_id	String	Specifies the ID of the belonged security group.
remote_group_id	String	Specifies the peer ID of the belonged security group.
direction	String	Specifies the direction of the traffic for which the security group rule takes effect.
remote_ip_prefix	String	Specifies the peer IP address segment.
protocol	String	Specifies the protocol type or the IP protocol number.
port_range_max	Integer	Specifies the maximum port number. When ICMP is used, the value is the ICMP code.
port_range_min	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both **port_range_max** and **port_range_min** must be specified, and the **port_range_max** value must be greater than the **port_range_min** value. When the ICMP protocol is used, if you specify the ICMP code (**port_range_max**), you must also specify the ICMP type (**port_range_min**).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
remote_address_group_id	String	• Specifies the remote IP address group ID. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

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Parameter	Type	Description
created_at	String	Specifies the time (UTC) when the security group rule is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the security group rule is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Example Response

```
{
    "security_group": {
        "id": "d29ae17d-f355-4992-8747-1fb66cc9afd2",
        "name": "sg-test",
        "description": "",
        "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
        "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
        "security_group_rules": [
            {
                "id": "3f51e52c-0e85-40f7-a137-85927392e436",
                "direction": "egress",
                "protocol": null,
                "ethertype": "IPv4",
                "description": null,
                "remote_group_id": null,
                "remote_ip_prefix": null,
                "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
                "port_range_max": null,
                "port_range_min": null,
                "security_group_id": "d29ae17d-f355-4992-8747-1fb66cc9afd2",
                "remote_address_group_id": null
            },
            {
                "id": "6332de3e-98fb-4f8c-b44a-fcb8ff09881e",
                "direction": "egress",
                "protocol": null,
                "ethertype": "IPv6",
                "description": null,
                "remote_group_id": null,
                "remote_ip_prefix": null,
                "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
                "port_range_max": null,
                "port_range_min": null,
                "security_group_id": "d29ae17d-f355-4992-8747-1fb66cc9afd2",
                "remote_address_group_id": null
            }
        ],
        "created_at": "2018-09-20T02:15:34",
        "updated_at": "2018-09-20T02:15:34"
    }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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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 6-187 Request parameter

Parameter	Type	Mandatory	Description
security_group	**security_group** object	Yes	Specifies the security group. For details, see **Table 6-188**. You must specify at least one attribute when updating a security group.

Table 6-188 Security Group objects

Parameter	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"
   }
}
```


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Response Parameters

Table 6-189 Response parameter

Parameter	Type	Description
security_group	**security_group** object	Specifies the security group objects. For details, see **Table 6-190**.

Table 6-190 Security Group objects

Parameter	Type	Description
id	String	Specifies the security group ID. This parameter is not mandatory when you query security groups.
tenant_id	String	Specifies the project ID.
name	String	Specifies the security group name.
description	String	Provides supplementary information about the security group.
security_group_rules	Array of **Security Group Rule** objects	Specifies the security group rule list. For details, see **Table 6-191**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the security group is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the security group is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-191 Security Group Rule objects

Parameter	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.

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Parameter	Type	Description
security_group_id	String	Specifies the ID of the belonged security group.
remote_group_id	String	Specifies the peer ID of the belonged security group.
direction	String	Specifies the direction of the traffic for which the security group rule takes effect.
remote_ip_prefix	String	Specifies the peer IP address segment.
protocol	String	Specifies the protocol type or the IP protocol number.
port_range_max	Integer	Specifies the maximum port number. When ICMP is used, the value is the ICMP code.
port_range_min	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both **port_range_max** and **port_range_min** must be specified, and the **port_range_max** value must be greater than the **port_range_min** value. When the ICMP protocol is used, if you specify the ICMP code (**port_range_max**), you must also specify the ICMP type (**port_range_min**).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
remote_address_group_id	String	• Specifies the remote IP address group ID. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

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Parameter	Type	Description
created_at	String	Specifies the time (UTC) when the security group rule is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the security group rule is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Example Response

```
{
   "security_group": {
      "id": "d29ae17d-f355-4992-8747-1fb66cc9afd2",
      "name": "sg-test02",
      "description": "",
      "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
      "project_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
      "security_group_rules": [
         {
            "id": "6332de3e-98fb-4f8c-b44a-fcb8ff09881e",
            "direction": "egress",
            "protocol": null,
            "ethertype": "IPv6",
            "description": null,
            "remote_group_id": null,
            "remote_ip_prefix": null,
            "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
            "port_range_max": null,
            "port_range_min": null,
            "security_group_id": "d29ae17d-f355-4992-8747-1fb66cc9afd2",
            "remote_address_group_id": "0150a3a7-82ca-4569-865c-04e46e5e9249"
         },
         {
            "id": "3f51e52c-0e85-40f7-a137-85927392e436",
            "direction": "egress",
            "protocol": null,
            "ethertype": "IPv4",
            "description": null,
            "remote_group_id": null,
            "remote_ip_prefix": null,
            "tenant_id": "bbfe8c41dd034a07bebd592bf03b4b0c",
            "port_range_max": null,
            "port_range_min": null,
            "security_group_id": "d29ae17d-f355-4992-8747-1fb66cc9afd2",
            "remote_address_group_id": null
         }
      ],
      "created_at": "2018-09-20T02:15:34",
      "updated_at": "2018-09-20T02:16:31"
   }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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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. A maximum of 2,000 records can be returned for each query operation. If the number of records exceeds 2,000, the pagination marker will be returned.

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_ip_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

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```
GET https://{Endpoint}/v2.0/networks?limit=2&marker=07adc044-3f21-4eeb-
bd57-5e5eb6024b7f&page_reverse=False
```

Table 6-192 describes the parameters.

Table 6-192 Parameter description

Parameter	Mandatory	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_id	No	String	Specifies the ID of the remote security group associated with the security group rule is used as the filtering condition.
security_group_id	No	String	Specifies the ID of the corresponding security group is used as the filtering condition.
direction	No	String	Specifies the security group rule direction is used as the filtering condition. The value can be **ingress** or **egress**.
protocol	No	String	Specifies that the IP protocol is used as the filtering condition.
remote_ip_prefix	No	String	Specifies the remote IP address range matching the security group rule is used as the filtering condition.
ethertype	No	String	Specifies that the network type is used as the filtering condition.
port_range_max	No	Integer	Specifies that the maximum port is used as the filtering condition.
port_range_min	No	Integer	Specifies that the minimum port is used as the filtering condition.

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Parameter	Mandatory	Type	Description
tenant_id	No	String	Specifies that the project ID is used as the filtering condition.
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.

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

Request Parameters

None

Example Request

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

Response Parameters

Table 6-193 Response parameter

Parameter	Type	Description
security_group_rules	Array of **Security Group Rule** objects	Specifies the security group rule list. For details, see **Table 6-194**.
security_group_rules_links	Array of **SecurityGroupRulesLink** objects	Shows pagination information about security group rules. Only when **limit** is used for filtering and the number of resources exceeds the value of **limit** or 2000 (default value of **limit**), value **next** will be returned for **rel** and a link for **href**.

Table 6-194 Security Group Rule objects

Parameter	Type	Description
id	String	Specifies the security group rule ID. This parameter is not mandatory when you query security group rules.

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Parameter	Type	Description
description	String	Provides supplementary information about the security group rule.
security_group_id	String	Specifies the ID of the belonged security group.
remote_group_id	String	Specifies the peer ID of the belonged security group.
direction	String	Specifies the direction of the traffic for which the security group rule takes effect.
remote_ip_prefix	String	Specifies the peer IP address segment.
protocol	String	Specifies the protocol type or the IP protocol number.
port_range_max	Integer	Specifies the maximum port number. When ICMP is used, the value is the ICMP code.
port_range_min	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both **port_range_max** and **port_range_min** must be specified, and the **port_range_max** value must be greater than the **port_range_min** value. When the ICMP protocol is used, if you specify the ICMP code (**port_range_max**), you must also specify the ICMP type (**port_range_min**).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
remote_address_group_id	String	• Specifies the remote IP address group ID. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.

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Parameter	Type	Description
created_at	String	Specifies the time (UTC) when the security group rule is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the security group rule is updated. Format: *yyyy-MM-ddTHH:mm:ss*

Table 6-195 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_address_group_id": null
      },
      {
         "remote_group_id": null,
         "direction": "egress",
         "remote_ip_prefix": null,
         "protocol": null,
         "tenant_id": "6c9298ec8c874f7f99688489ab65f90e",
         "port_range_max": null,
         "security_group_id": "328fb454-a2ee-4a11-bdb1-ee19bbdfde43",
         "port_range_min": null,
         "ethertype": "IPv6",
         "description": null,
         "id": "09358f83-f4a5-4386-9563-a1e3c373d655",
         "project_id": "6c9298ec8c874f7f99688489ab65f90e",
         "created_at": "2018-09-20T02:15:34",
         "updated_at": "2018-09-20T02:15:34",
         "remote_address_group_id": null
      },
      {
         "remote_group_id": "4c763030-366e-428c-be2b-d48f6baf5297",
```


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```
            "direction": "ingress",
            "remote_ip_prefix": null,
            "protocol": null,
            "tenant_id": "6c9298ec8c874f7f99688489ab65f90e",
            "port_range_max": null,
            "security_group_id": "4c763030-366e-428c-be2b-d48f6baf5297",
            "port_range_min": null,
            "ethertype": "IPv6",
            "description": null,
            "id": "219a6f56-1069-458b-bec0-df9270e7a074",
            "project_id": "6c9298ec8c874f7f99688489ab65f90e",
            "created_at": "2018-09-20T02:15:34",
            "updated_at": "2018-09-20T02:15:34",
            "remote_address_group_id": null
        }
    ],
    "security_group_rules_links": [
        {    "rel": "previous",
             "href": "https://{Endpoint}/v2.0/
security-group-rules?marker=07adc044-3f21-4eeb-bd57-5e5eb6024b7f&page_reverse=True"
        }
    ]
}
```


Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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
```


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Response Parameters

Table 6-196 Response parameter

Parameter	Type	Description
security_group_rule	**security_group_rule** object	Specifies the security group rule. For details, see **Table 6-197**.

Table 6-197 Security Group Rule objects

Parameter	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.

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Parameter	Type	Description
port_range_min	Integer	Specifies the minimum port number. If the ICMP protocol is used, this parameter indicates the ICMP type. When the TCP or UDP protocol is used, both **port_range_max** and **port_range_min** must be specified, and the **port_range_max** value must be greater than the **port_range_min** value. When the ICMP protocol is used, if you specify the ICMP code (**port_range_max**), you must also specify the ICMP type (**port_range_min**).
ethertype	String	Specifies the network type. IPv4 and IPv6 are supported.
tenant_id	String	Specifies the project ID.
remote_address_group_id	String	• Specifies the remote IP address group ID. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	Specifies the time (UTC) when the security group rule is created. Format: *yyyy-MM-ddTHH:mm:ss*
updated_at	String	Specifies the time (UTC) when the security group rule is updated. Format: *yyyy-MM-ddTHH:mm:ss*

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",
```


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```
    "description": null,
    "id": "1755bc80-cf3a-4f57-8ae9-d9796482ddc0",
    "project_id": "6fbe9263116a4b68818cf1edce16bc4f",
    "created_at": "2018-09-20T02:15:34",
    "updated_at": "2018-09-20T02:15:34",
    "remote_address_group_id": null
  }
}
```

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

6.7.8 Adding a Security Group Rule

Function

This API is used to add a security group rule. By default, allow rules can be created. For details about how to create deny rules, see the description of parameter **action** in section "Adding a Security Group Rule" in the *Virtual Private Cloud API Reference (V3)*.

URI

POST /v2.0/security-group-rules

Request Parameters

Table 6-198 Request parameter

Parameter	Type	Mandatory	Description
security_group_rule	**security_group_rule** object	Yes	Specifies the security group rule. For details, see **Table 6-199**.

Table 6-199 Security Group Rule objects

Parameter	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.

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Parameter	Mandatory	Type	Description
remote_group_id	No	String	• Specifies the peer ID of the belonged security group. • This parameter value is mutually exclusive with **remote_ip_prefix** and **remote_address_group_id**.
direction	Yes	String	• Specifies the direction of a security group rule. • The value can be **ingress** (inbound) or **egress** (outbound).
remote_ip_prefix	No	String	• Specifies the peer IP address segment. • This parameter value is mutually exclusive with **remote_group_id** and **remote_address_group_id**.
protocol	No	String	• Specifies the protocol type or the IP protocol number. • The value can be **tcp**, **udp**, **icmp** or an IP protocol number.
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.)

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Parameter	Mandatory	Type	Description
port_range_min	No	Integer	• Specifies the minimum port number. When ICMP is used, the value is the ICMP type. • Constraints: – When the TCP or UDP protocol is used, both **port_range_max** and **port_range_min** must be specified, and the **port_range_max** value must be greater than the **port_range_min** value. – When the ICMP protocol is used, if you specify the ICMP code (**port_range_max**), you must also specify the ICMP type (**port_range_min**). • The value ranges from 1 to 65535. (The value ranges from 0 to 255 when it indicates the code.)
ethertype	No	String	• Specifies the network type. • The value can be **IPv4** or **IPv6**.
remote_address_group_id	No	String	• Specifies the remote IP address group ID. You can log in to the management console and view the ID on the IP address group page. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.

Example Request

Create an outbound rule in the security group whose ID is 5cb9c1ee-00e0-4d0f-9623-55463cd26ff8. Set **protocol** to **tcp**, and **remote_ip_prefix** to 10.10.0.0/24.

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

{
    "security_group_rule": {
        "security_group_id": "5cb9c1ee-00e0-4d0f-9623-55463cd26ff8",
        "direction": "egress",
        "protocol": "tcp",
```


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```
    "remote_ip_prefix": "10.10.0.0/24"
  }
}
```

Response Parameters

Table 6-200 Response parameter

Parameter	Type	Description
security_group_rule	**security_group_rule** object	Specifies the security group rule. For details, see **Table 6-201**.

Table 6-201 Security Group Rule objects

Parameter	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 a security group rule.
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. • The value ranges from 1 to 65535. (The value ranges from 0 to 255 when it indicates the code.)

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Parameter	Type	Description
port_range_min	Integer	• Specifies the minimum port number. When ICMP is used, the value is the ICMP type. • Constraints: – When the TCP or UDP protocol is used, both **port_range_max** and **port_range_min** must be specified, and the **port_range_max** value must be greater than the **port_range_min** value. – When the ICMP protocol is used, if you specify the ICMP code (**port_range_max**), you must also specify the ICMP type (**port_range_min**).
ethertype	String	• Specifies the IP version. • The value can be **IPv4** or **IPv6**.
tenant_id	String	Specifies the project ID.
remote_address_group_id	String	• Specifies the remote IP address group ID. • The parameter value is mutually exclusive with parameters **remote_ip_prefix** and **remote_group_id**.
project_id	String	Specifies the project ID. For details about how to obtain a project ID, see **Obtaining a Project ID**.
created_at	String	• Time when the security group rule is created • UTC time in the format of yyyy-MM-ddTHH:mm:ssZ
updated_at	String	• Time when the security group rule is updated • UTC time in the format of yyyy-MM-ddTHH:mm:ssZ

Example Response

```
{
    "security_group_rule": {
        "remote_group_id": null,
        "direction": "egress",
        "remote_ip_prefix": "10.10.0.0/24",
        "protocol": "tcp",
```


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```
        "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
        "port_range_max": null,
        "security_group_id": "5cb9c1ee-00e0-4d0f-9623-55463cd26ff8",
        "port_range_min": null,
        "ethertype": "IPv4",
        "description": null,
        "id": "7c336b04-1603-4911-a6f4-f2af1d9a0488",
        "project_id": "6fbe9263116a4b68818cf1edce16bc4f",
        "created_at": "2018-09-20T02:15:34",
        "updated_at": "2018-09-20T02:15:34",
        "remote_address_group_id": null
    }
}
```


Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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**.

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7 Application Examples

7.1 Example 1: Creating a VPC and Subnet for an ECS

Scenarios

This section describes how to create a VPC and subnet for an ECS by calling APIs.

Prerequisites

If you use a token for authentication, you must obtain the token and add **X-Auth-Token** to the request header when making an API call. Obtain the token by referring to **Authentication**.

NOTE

The token obtained from IAM is valid for only 24 hours. If you want to use a token for authentication, you can cache it to avoid frequent calling.

Procedure

1. Create a VPC.
   a. Send **POST https://*VPC endpoint*/v1/{project_id}/vpcs**. Parameter **project_id** indicates the project ID.
   b. Add **X-Auth-Token** to the request header.
   c. Set the following parameters in the request body. Plan the value of the **cidr** field in advance.

```
{
   "vpc": {
      "name": "vpc", //VPC name
      "cidr": "192.168.0.0/16" //Available subnet in the VPC
   }
}
```

   d. 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**.

2. View details of the VPC.
   a. Send **GET https://*VPC endpoint*/v1/{project_id}/vpcs/{vpc_id}**. Parameter **project_id** indicates the project ID.
   b. Add **X-Auth-Token** to the request header.
   c. 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",
        "description": "",
        "cidr": "192.168.0.0/16",
        "status": "OK",
        "enterprise_project_id": "0" ,
        "routes": []
    }
}
```

      - For details about the error codes displayed if the request fails, see section **Error Codes**.

3. Create a subnet in the VPC.
   a. Send **POST https://*VPC endpoint*/v1/{project_id}/subnets**. Parameter **project_id** indicates the project ID.
   b. Add **X-Auth-Token** to the request header.
   c. Set the following parameters in the request body. For details about the values of **dnsList**, see **What Are the Private DNS Server Addresses Provided by the DNS Service?**

```
{
    "subnet": {
        "name": "subnet",
        "description": "",
        "cidr": "192.168.0.0/24",
        "gateway_ip": "192.168.0.1",
        "dhcp_enable": true,
        "dnsList": ["114.xx.xx.114", "114.xx.xx.115"],
        "availability_zone": "aa-bb-cc",
        "vpc_id": "b6684a27-b049-407d-90b4-c9551f2390e1"
    }
}
```

   d. Check the response message.
      - The request is successful if the following response is displayed.

```
{
    "subnet": {
        "id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
        "name": "subnet",
        "description": "",
        "cidr": "192.168.0.0/24",
```

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```
        "dnsList": ["114.xx.xx.114", "1114.xx.xx.115"],
        "status": "UNKNOWN",
        "vpc_id": "b6684a27-b049-407d-90b4-c9551f2390e1",
        "gateway_ip": "192.168.0.1",
        "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",
        "extra_dhcp_opts": []
    }
}
```


- For details about the error codes displayed if the request fails, see section **Error Codes**.

4. View details of the subnet.
   a. Send **GET https://*VPC endpoint*/v1/{project_id}/subnets/{subnet_id}**. Parameter **project_id** indicates the project ID.
   b. Add **X-Auth-Token** to the request header.
   c. Check the response message.


```
{
    "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": "b6684a27-b049-407d-90b4-c9551f2390e1",
        "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",
        "extra_dhcp_opts": []
    }
}
```


7.2 Example 2: Configuring a Security Group for an ECS

Scenarios

This section describes how to configure a security group for an ECS by calling APIs.

Prerequisites

- You have purchased an ECS. For details, see **Creating an ECS**.
- If you use a token for authentication, you must obtain the token and add **X-Auth-Token** to the request header when making an API call. Obtain the token by referring to **Authentication**.

NOTE

The token obtained from IAM is valid for only 24 hours. If you want to use a token for authentication, you can cache it to avoid frequent calling.

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Procedure

1. Obtain the NIC information based on the ECS ID.
   a. Send **GET https://*VPC endpoint*/v1/{project_id}/ports?device_id={ecs_id}**. Parameter **project_id** indicates the project ID.
   b. Add **X-Auth-Token** to the request header.
   c. Check the response message.
      - The request is successful if the following response is displayed.

```
{
   "ports": [{
      "id": "02c72193-efec-42fb-853b-c33f2b802467",
      "name": "",
      "status": "ACTIVE",
      "admin_state_up": true,
      "fixed_ips": [{
         "subnet_id": "213cb9d-3122-2ac1-1a29-91ffc1231a12",
         "ip_address": "192.168.0.75"
      }],
      "mac_address": "fa:16:3e:47:5f:c1",
      "network_id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
      "tenant_id": "db82c9e1415a464ea68048baa8acc6b8",
      "project_id": "db82c9e1415a464ea68048baa8acc6b8",
      "device_id": "ea61f836-b52f-41bf-9d06-685644001d6f",
      "device_owner": "compute:br-iaas-odin1a",
      "security_groups": [
         "e0598d96-9451-4f8a-8de0-b8b4d451d9e7"
      ],
      "extra_dhcp_opts": [],
      "allowed_address_pairs": [],
      "binding:vnic_type": "normal",
      "binding:vif_details": {
         "primary_interface": true
      },
      "binding:profile": {},
      "port_security_enabled": true,
      "created_at": "2020-06-20T08:07:29",
      "updated_at": "2020-06-20T08:07:29"
   }]
}
```

      - For details about the error codes displayed if the request fails, see section **Error Codes**.
2. View information about existing security groups.
   a. Send **GET https://*VPC endpoint*/v1/{project_id}/subnets/security-groups**. Parameter **project_id** indicates the project ID.
   b. Add **X-Auth-Token** to the request header.
   c. Check the response message.
      - The request is successful if the following response is displayed. In the response, **id** indicates the security group ID.

```
{
   "security_groups": [{
      "id": "16b6e77a-08fa-42c7-aa8b-106c048884e6",
      "name": "qq",
      "description": "qq",
      "vpc_id": "3ec3b33f-ac1c-4630-ad1c-7dba1ed79d85",
      "enterprise_project_id ": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2",
      "security_group_rules": [{
         "direction": "egress",
         "ethertype": "IPv4",
         "id": "369e6499-b2cb-4126-972a-97e589692c62",
```

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```
            "description": "",
            "security_group_id": "16b6e77a-08fa-42c7-aa8b-106c048884e6"
        }, {
            "direction": "ingress",
            "ethertype": "IPv4",
            "id": "0222556c-6556-40ad-8aac-9fd5d3c06171",
            "description": "",
            "remote_group_id": "16b6e77a-08fa-42c7-aa8b-106c048884e6",
            "security_group_id": "16b6e77a-08fa-42c7-aa8b-106c048884e6"
        }]
    }, {
        "id": "9c0f56be-a9ac-438c-8c57-fce62de19419",
        "name": "default",
        "description": "qq",
        "vpc_id": "13551d6b-755d-4757-b956-536f674975c0",
        "enterprise_project_id ": "0",
        "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"
        }]
    }]
}
```


- For details about the error codes displayed if the request fails, see section **Error Codes**.

3. Add the ECS to a security group.
   a. Send **PUT https://*VPC endpoint*/v1/{project_id}/ports/{port_id}**. Parameter **project_id** indicates the project ID.
   b. Add **X-Auth-Token** to the request header.
   c. Specify the following parameters in the request body:

```
{
    "port": {
        "security_groups": ["9c0f56be-a9ac-438c-8c57-fce62de19419","16b6e77a-08fa-42c7-aa8b-106c048884e6"]
    }
}
```

   d. Check the response message.

- The request is successful if the following response is displayed. In the response, **id** indicates the port ID.


```
{
    "port": {
        "id": "02c72193-efec-42fb-853b-c33f2b802467",
        "name": "",
        "status": "ACTIVE",
        "admin_state_up": true,
        "fixed_ips": [{
            "subnet_id": "213cb9d-3122-2ac1-1a29-91ffc1231a12",
            "ip_address": "192.168.0.75"
        }],
        "mac_address": "fa:16:3e:47:5f:c1",
        "network_id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
        "tenant_id": "db82c9e1415a464ea68048baa8acc6b8",
        "project_id": "db82c9e1415a464ea68048baa8acc6b8",
        "device_id": "ea61f836-b52f-41bf-9d06-685644001d6f",
```


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```
        "device_owner": "compute:br-iaas-odin1a",
        "security_groups": ["9c0f56be-a9ac-438c-8c57-fce62de19419", "16b6e77a-08fa-42c7-
aa8b-106c048884e6"],
        "extra_dhcp_opts": [],
        "allowed_address_pairs": [{
            "ip_address": "1.1.1.1/0"
        }],
        "binding:vnic_type": "normal",
        "binding:vif_details": {
            "primary_interface": true
        },
        "binding:profile": {},
        "port_security_enabled": true,
        "created_at": "2020-06-20T08:07:29",
        "updated_at": "2020-06-20T08:07:29"
    }
}
```


- For details about the error codes displayed if the request fails, see section **Error Codes**.

7.3 Example 3: Assigning a Virtual IP Address to an ECS for HA

Scenarios

Virtual IP addresses are used for high availability as they make active/standby ECS switchover possible. This way if one ECS goes down for some reason, the other one can take over and services continue uninterrupted.

This section describes how to assign a virtual IP address to an ECS for HA by calling APIs.

Prerequisites

- You have created a VPC and subnet and obtained the VPC ID and subnet ID. For details, see **Creating a VPC and Subnet**.
- You have purchased an ECS. For details, see **Creating an ECS**.
- If you use a token for authentication, you must obtain the token and add **X-Auth-Token** to the request header when making an API call. Obtain the token by referring to **Authentication**.

NOTE

The token obtained from IAM is valid for only 24 hours. If you want to use a token for authentication, you can cache it to avoid frequent calling.

Procedure

1. Assign a virtual IP address.
   a. Send **POST https://***VPC endpoint***/v2.0/ports**.
   b. Add **X-Auth-Token** to the request header.
   c. Set the following parameters in the request body. The virtual IP address and the ECS must be in the same subnet.


```
{
    "port": {
```


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```
        "network_id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
        "device_owner": "neutron:VIP_PORT",
        "name": "vip_port_test"
    }
}
```

Alternatively, you can assign a specific IP address.

```
{
    "port": {
        "network_id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
        "device_owner": "neutron:VIP_PORT",
        "name": "vip_port_test",
        "fixed_ips": [
            {
                "ip_address": "192.168.0.220"
            }
        ]
    }
}
```

d. Check the response message.

- The request is successful if the following response is displayed.

```
{
    "port": {
        "id": "a7d98f3c-b42f-460b-96a1-07601e145961",
        "name": "port-test",
        "status": "DOWN",
        "admin_state_up": true,
        "fixed_ips": [{
            "subnet_id": "213cb9d-3122-2ac1-1a29-91ffc1231a12",
            "ip_address": "192.168.0.220"
        }],
        "mac_address": "fa:16:3e:01:f7:90",
        "network_id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
        "tenant_id": "db82c9e1415a464ea68048baa8acc6b8",
        "project_id": "db82c9e1415a464ea68048baa8acc6b8",
        "device_id": "",
        "device_owner": "neutron:VIP_PORT",
        "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"
    }
}
```

- For details about the error codes displayed if the request fails, see section **Error Codes**.

2. Obtain the NIC information based on the ECS ID.

a. Send **GET https://*VPC endpoint*/v2.0/ports?device_id={ecs_id}&network_id={network_id}**.

b. Add **X-Auth-Token** to the request header.

c. Check the response message.

- The request is successful if the following response is displayed.

```
{
    "ports": [{
        "id": "02c72193-efec-42fb-853b-c33f2b802467",
        "name": "",
        "status": "ACTIVE",
        "admin_state_up": true,
```

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```
        "fixed_ips": [{
            "subnet_id": "213cb9d-3122-2ac1-1a29-91ffc1231a12",
            "ip_address": "192.168.0.75"
        }],
        "mac_address": "fa:16:3e:47:5f:c1",
        "network_id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
        "tenant_id": "db82c9e1415a464ea68048baa8acc6b8",
        "project_id": "db82c9e1415a464ea68048baa8acc6b8",
        "device_id": "ea61f836-b52f-41bf-9d06-685644001d6f",
        "device_owner": "compute:br-iaas-odin1a",
        "security_groups": [
            "e0598d96-9451-4f8a-8de0-b8b4d451d9e7"
        ],
        "extra_dhcp_opts": [],
        "allowed_address_pairs": [],
        "binding:vnic_type": "normal",
        "binding:vif_details": {
            "primary_interface": true
        },
        "binding:profile": {},
        "port_security_enabled": true,
        "created_at": "2020-06-20T08:07:29",
        "updated_at": "2020-06-20T08:07:29"
    }]
}
```


- For details about the error codes displayed if the request fails, see section **Error Codes**.

3. Bind an ECS to the virtual IP address.
   a. Send **PUT https://***VPC endpoint***/v2.0/ports/***{port_id}***. *port_id* indicates the port ID corresponding to the assigned virtual IP address.
   b. Add **X-Auth-Token** to the request header.
   c. Set the following parameters in the request body. Set the value of **ip_address** to the NIC IP address of the ECS obtained in **2**.

```
{
    "port": {
        "allowed_address_pairs": [{
            "ip_address": "192.168.0.75"
        }]
    }
}
```

   d. Check the response message.
      - The request is successful if the following response is displayed.


```
{
    "port": {
        "id": "a7d98f3c-b42f-460b-96a1-07601e145961",
        "name": "port-test",
        "status": "DOWN",
        "admin_state_up": true,
        "fixed_ips": [{
            "subnet_id": "213cb9d-3122-2ac1-1a29-91ffc1231a12",
            "ip_address": "192.168.0.220"
        }],
        "mac_address": "fa:16:3e:01:f7:90",
        "network_id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
        "tenant_id": "db82c9e1415a464ea68048baa8acc6b8",
        "project_id": "db82c9e1415a464ea68048baa8acc6b8",
        "device_id": "",
        "device_owner": "neutron:VIP_PORT",
        "security_groups": ["d0d58aa9-cda9-414c-9c52-6c3daf8534e6"],
        "extra_dhcp_opts": [],
        "allowed_address_pairs": [{
            "ip_address": "192.168.0.75"
        }]
```


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```
        "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"
    }
}
```

- For details about the error codes displayed if the request fails, see section **Error Codes**.

4. Disable the source/destination check function for the ECS NIC.
   a. Send **PUT https://***VPC endpoint***/v2.0/ports/***{port_id}***. port_id** is the NIC ID obtained in **2**.
   b. Add **X-Auth-Token** to the request header.
   c. Set the following parameters in the request body. Set the value of **ip_address** to 1.1.1.1/0, the NIC IP address of the ECS.

```
{
    "port": {
        "allowed_address_pairs": [{
            "ip_address": "1.1.1.1/0"
        }]
    }
}
```

   d. Check the response message.

- The request is successful if the following response is displayed.

```
{
    "port": {
        "id": "02c72193-efec-42fb-853b-c33f2b802467",
        "name": "",
        "status": "ACTIVE",
        "admin_state_up": true,
        "fixed_ips": [{
            "subnet_id": "213cb9d-3122-2ac1-1a29-91ffc1231a12",
            "ip_address": "192.168.0.75"
        }],
        "mac_address": "fa:16:3e:47:5f:c1",
        "network_id": "4779ab1c-7c1a-44b1-a02e-93dfc361b32d",
        "tenant_id": "db82c9e1415a464ea68048baa8acc6b8",
        "project_id": "db82c9e1415a464ea68048baa8acc6b8",
        "device_id": "ea61f836-b52f-41bf-9d06-685644001d6f",
        "device_owner": "compute:br-iaas-odin1a",
        "security_groups": ["e0598d96-9451-4f8a-8de0-b8b4d451d9e7"],
        "extra_dhcp_opts": [],
        "allowed_address_pairs": [{
            "ip_address": "1.1.1.1/0"
        }],
        "binding:vnic_type": "normal",
        "binding:vif_details": {
            "primary_interface": true
        },
        "binding:profile": {},
        "port_security_enabled": true,
        "created_at": "2020-06-20T08:07:29",
        "updated_at": "2020-06-20T08:07:29"
    }
}
```

- For details about the error codes displayed if the request fails, see section **Error Codes**.

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7.4 Example 4: Assigning a Virtual IPv6 Address to ECSs for HA

Scenarios

Virtual IP addresses are used for high availability as they make active/standby ECS switchover possible. This way if one ECS goes down for some reason, the other one can take over and services continue uninterrupted.

This section describes how to assign a virtual IPv6 address to ECSs for HA by calling APIs.

Prerequisites

- You have created a VPC and a subnet that support both IPv4 and IPv6 and obtained the VPC ID and subnet ID. For details, see **Creating a VPC and Subnet**.
- You have purchased an ECS. For details, see **Creating an ECS**.
- If you use a token for authentication, you must obtain the token and add **X-Auth-Token** to the request header when making an API call. Obtain the token by referring to **Authentication**.

NOTE

The token obtained from IAM is valid for only 24 hours. If you want to use a token for authentication, you can cache it to avoid frequent calling.

Procedure

1. Assign a virtual IPv6 address.
   a. Send **POST https://***VPC endpoint***/v2.0/ports**.
   b. Add **X-Auth-Token** to the request header.
   c. Set the following parameters in the request body. The subnet where the virtual IP address resides must be the same as that of the ECS. Set **subnet_id** to the ID of the IPv6 subnet.

```
{
    "port":{
        "network_id":"b0ad9b80-bb16-4550-8ce0-514f949e35ee",
        "device_owner":"neutron:VIP_PORT",
        "name":"ipv6_vip_port_test",
        "fixed_ips":[
            {
                "subnet_id":"33ce2628-6246-4e3a-859f-99cd753ff704"
            }
        ]
    }
}
```

   d. Check the response message.
      - The request is successful if the following response is displayed:

```
{
    "port": {
        "id": "d92cfee7-9ebe-4483-85c1-00ffb1e45cd8",
        "name": "ipv6_vip_port_test",
```

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```
    "status": "DOWN",
    "admin_state_up": true,
    "fixed_ips": [
        {
            "subnet_id": "33ce2628-6246-4e3a-859f-99cd753ff704",
            "ip_address": "2001:db8:a583:21d:2e25:9403:6f3d:4664"
        }
    ],
    "mac_address": "fa:16:3e:99:2e:92",
    "network_id": "b0ad9b80-bb16-4550-8ce0-514f949e35ee",
    "tenant_id": "060576782980d5762f9ec014dd2f1148",
    "project_id": "060576782980d5762f9ec014dd2f1148",
    "device_id": "",
    "device_owner": "neutron:VIP_PORT",
    "security_groups": [],
    "extra_dhcp_opts": [],
    "allowed_address_pairs": [],
    "binding:vnic_type": "normal",
    "binding:vif_details": {},
    "binding:profile": {},
    "port_security_enabled": true,
    "created_at": "2020-12-15T03:01:07",
    "updated_at": "2020-12-15T03:01:07"
  }
}
```


- For details about the error codes displayed if the request fails, see section **Error Codes**.

2. Query the NIC information according to the ECS ID. The value of **fixed_ips** contains IPv4 and IPv6 addresses.
   a. Send **GET https://***VPC endpoint***/v2.0/ports?device_id={ecs_id}&network_id={network_id}**.
   b. Add **X-Auth-Token** to the request header.
   c. Check the response message.
      - The request is successful if the following response is displayed:


```
{
    "ports": [{
        "id": "47b4cd46-cfe5-415d-957f-5068189dce94",
        "name": "",
        "status": "ACTIVE",
        "admin_state_up": true,
        "fixed_ips": [
            {
                "subnet_id": "0dd17989-1c23-4501-8dc1-40e4085f793f",
                "ip_address": "172.16.0.191"
            },
            {
                "subnet_id": "33ce2628-6246-4e3a-859f-99cd753ff704",
                "ip_address": "2001:db8:a583:21d:dfc0:d452:e9ab:65cf"
            }
        ],
        "mac_address": "fa:16:3e:1e:f7:9a",
        "network_id": "b0ad9b80-bb16-4550-8ce0-514f949e35ee",
        "tenant_id": "060576782980d5762f9ec014dd2f1148",
        "project_id": "060576782980d5762f9ec014dd2f1148",
        "device_id": "ab7ca781-66bf-48a8-814b-1568cb393a38",
        "device_owner": "compute:xxx",
        "security_groups": [
            "0552091e-b83a-49dd-88a7-4a5c86fd9ec3"
        ],
        "extra_dhcp_opts": [],
        "allowed_address_pairs": [],
        "binding:vnic_type": "normal",
        "binding:vif_details": {
            "primary_interface": true
```


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```
        },
        "binding:profile": {},
        "port_security_enabled": true,
        "dns_assignment": [
            {
                "hostname": "ip-172-16-0-191",
                "ip_address": "172.16.0.191",
                "fqdn": "ip-172-16-0-191.br-iaas-odin1.compute.internal."
            }
        ],
        "dns_name": "ip-172-16-0-191",
        "created_at": "2020-11-19T13:32:37",
        "updated_at": "2020-11-19T13:33:50"
    }]
}
```


- For details about the error codes displayed if the request fails, see section **Error Codes**.

3. Bind an ECS to the virtual IP address.
   a. Send **PUT https://***VPC endpoint***/v2.0/ports/***{port_id}***. *port_id* indicates the port ID corresponding to the assigned virtual IPv6 address.
   b. Add **X-Auth-Token** to the request header.
   c. Set the following parameters in the request body. Set the value of **ip_address** to the NIC IPv6 address of the ECS obtained in **2**.

```
{
    "port": {
        "allowed_address_pairs": [{
            "ip_address": "2001:db8:a583:21d:dfc0:d452:e9ab:65cf"
        }]
    }
}
```

   d. Check the response message.
      - The request is successful if the following response is displayed:


```
{
    "port": {
        "id": "d92cfee7-9ebe-4483-85c1-00ffb1e45cd8",
        "name": "ipv6_vip_port_test",
        "status": "DOWN",
        "admin_state_up": true,
        "fixed_ips": [
            {
                "subnet_id": "33ce2628-6246-4e3a-859f-99cd753ff704",
                "ip_address": "2001:db8:a583:21d:2e25:9403:6f3d:4664"
            }
        ],
        "mac_address": "fa:16:3e:99:2e:92",
        "network_id": "b0ad9b80-bb16-4550-8ce0-514f949e35ee",
        "tenant_id": "060576782980d5762f9ec014dd2f1148",
        "project_id": "060576782980d5762f9ec014dd2f1148",
        "device_id": "",
        "device_owner": "neutron:VIP_PORT",
        "security_groups": [],
        "extra_dhcp_opts": [],
        "allowed_address_pairs": [{
            "ip_address": "2001:db8:a583:21d:dfc0:d452:e9ab:65cf "
        }],
        "binding:vnic_type": "normal",
        "binding:vif_details": {},
        "binding:profile": {},
        "port_security_enabled": true,
        "created_at": "2020-12-15T03:01:07",
        "updated_at": "2020-12-15T03:01:07"
    }
}
```


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- For details about the error codes displayed if the request fails, see section **Error Codes**.

4. Disable the source/destination check function for the ECS NIC.
   a. Send **PUT https://***VPC endpoint***/v2.0/ports/***{port_id}***. **port_id** is the NIC ID obtained in **2**.
   b. Add **X-Auth-Token** to the request header.
   c. Set the following parameters in the request body. Set the value of **ip_address** to 1.1.1.1/0, the NIC IP address of the ECS.

```
{
   "port": {
      "allowed_address_pairs": [{
         "ip_address": "1.1.1.1/0"
      }]
   }
}
```

   d. Check the response message.
      - The request is successful if the following response is displayed:

```
{
    "port": {
"id": "47b4cd46-cfe5-415d-957f-5068189dce94",
        "name": "",
        "status": "ACTIVE",
        "admin_state_up": true,
        "fixed_ips": [
           {
              "subnet_id": "0dd17989-1c23-4501-8dc1-40e4085f793f",
              "ip_address": "172.16.0.191"
           },
           {
              "subnet_id": "33ce2628-6246-4e3a-859f-99cd753ff704",
              "ip_address": "2001:db8:a583:21d:dfc0:d452:e9ab:65cf"
           }
        ],
        "mac_address": "fa:16:3e:1e:f7:9a",
        "network_id": "b0ad9b80-bb16-4550-8ce0-514f949e35ee",
        "tenant_id": "060576782980d5762f9ec014dd2f1148",
        "project_id": "060576782980d5762f9ec014dd2f1148",
        "device_id": "ab7ca781-66bf-48a8-814b-1568cb393a38",
        "device_owner": "compute:xxx",
        "security_groups": [
           "0552091e-b83a-49dd-88a7-4a5c86fd9ec3"
        ],
        "extra_dhcp_opts": [],
        "allowed_address_pairs": [{
         "ip_address": "1.1.1.1/0"
      }],
        "binding:vnic_type": "normal",
        "binding:vif_details": {
           "primary_interface": true
        },
        "binding:profile": {},
        "port_security_enabled": true,
        "dns_assignment": [
           {
              "hostname": "ip-172-16-0-191",
              "ip_address": "172.16.0.191",
              "fqdn": "ip-172-16-0-191.br-iaas-odin1.compute.internal."
           }
        ],
        "dns_name": "ip-172-16-0-191",
        "created_at": "2020-11-19T13:32:37",
        "updated_at": "2020-11-19T13:33:50"
```

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```
  }
}
```

- For details about the error codes displayed if the request fails, see section **Error Codes**.

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8 Permissions and Supported Actions

8.1 Introduction

By default, new IAM users do not have permissions assigned. You need to add them to one or more groups and attach policies or roles to these groups. The users then inherit permissions from the groups. This way, they can perform specified operations on cloud services based on the permissions.

NOTE

If you want to allow or deny the access to an API, use policy-based authorization.

An account has all the permissions required to call all APIs, but IAM users must be assigned the required permissions. The required permissions are determined by the actions supported by the API. Only users with the policies allowing for those actions can call the API successfully. For example, if an IAM user wants to query VPCs using an API, the user must have been granted permissions that allow the **vpc:vpcs:list** action.

Supported Actions

VPC provides system-defined policies that can be directly used in IAM. You can also create custom policies to supplement system-defined policies for more refined access control. Operations supported by policies are specific to APIs. The following are common concepts related to policies:

- Permissions: statements in a policy that allow or deny certain operations
- APIs: REST APIs that can be called by a user who has been granted specific permissions
- Actions: specific operations that are allowed or denied in a custom policy
- IAM project/Enterprise project: A custom policy can be applied to IAM projects or enterprise projects or both. Policies that contain actions supporting both IAM and enterprise projects can be assigned to user groups and take effect in both IAM and Enterprise Management. Policies that only contain actions supporting IAM projects can be assigned to user groups and only take effect for IAM. Such policies will not take effect if they are assigned to user groups in Enterprise Management. For details about the differences between IAM

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projects and enterprise projects, see section "What Are the Differences Between IAM and Enterprise Management?" in the *Identity and Access Management User Guide*.

NOTE

√: supported; x: not supported

8.2 Permissions and Supported Actions of API V1 and V2

8.2.1 VPC

Permission	API	Action
Creating a VPC	POST /v1/{project_id}/vpcs	vpc:vpcs:create
Querying a VPC	GET /v1/{project_id}/vpcs/{vpc_id}	vpc:vpcs:get
Querying VPCs	GET /v1/{project_id}/vpcs	vpc:vpcs:list
Updating a VPC	PUT /v1/{project_id}/vpcs/{vpc_id}	vpc:vpcs:update
Deleting a VPC	DELETE /v1/{project_id}/vpcs/{vpc_id}	vpc:vpcs:delete

8.2.2 Subnet

Permission	API	Action
Creating a subnet	POST /v1/{project_id}/subnets	vpc:subnets:create
Querying a subnet	GET /v1/{project_id}/subnets/{subnet_id}	vpc:subnets:get
Querying subnets	GET /v1/{project_id}/subnets	vpc:subnets:get
Updating a subnet	PUT /v1/{project_id}/vpcs/{vpc_id}/subnets/{subnet_id}	vpc:subnets:update
Deleting a subnet	DELETE /v1/{project_id}/vpcs/{vpc_id}/subnets/{subnet_id}	vpc:subnets:delete

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8.2.3 Port

Permission	API	Action
Querying a port	GET /v1/{project_id}/ports	vpc:ports:get
Querying the details of a port	GET /v1/{project_id}/ports/{port_id}	vpc:ports:get
Updating a port	PUT /v1/{project_id}/ports/{port_id}	vpc:ports:update
Deleting a port	DELETE /v1/{project_id}/ports/{port_id}	vpc:ports:delete
Creating a port	POST / v1/{project_id}/ports	vpc:ports:create

8.2.4 VPC Peering Connection

Permission	API	Action
Querying VPC peering connections	GET /v2.0/vpc/peerings	vpc:peerings:get
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

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8.2.5 VPC Route

Permission	API	Action
Querying VPC routes	GET /v2.0/vpc/routes	vpc:routes:list
Querying a VPC route	GET /v2.0/vpc/routes/{route_id}	vpc:routes:get
Creating a VPC route	POST /v2.0/vpc/routes	vpc:routes:create
Deleting a VPC route	DELETE /v2.0/vpc/routes/{route_id}	vpc:routes:delete

8.2.6 Route Table

Permission	API	Action
Querying route tables	GET /v1/{project_id}/routetables	vpc:routeTables:list
Querying a route table	GET /v1/{project_id}/routetables/{routetable_id}	vpc:routeTables:get
Creating a route table	POST /v1/{project_id}/routetables	vpc:routeTables:create
Updating a route table	PUT /v1/{project_id}/routetables/{routetable_id}	vpc:routeTables:update
Associating subnets with a route table	POST /v1/{project_id}/routetables/{routetable_id}/action	vpc:routeTables:associate
Disassociating subnets from a route table	POST /v1/{project_id}/routetables/{routetable_id}/action	vpc:routeTables:associate
Deleting a route table	DELETE /v1/{project_id}/routetables/{routetable_id}	vpc:routeTables:delete

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8.2.7 Quota

Permission	API	Action
Querying quotas	GET /v1/{project_id}/quotas	vpc:quotas:list

8.2.8 Private IP Address

Permission	API	Action
Assigning a private IP address	POST /v1/{project_id}/privateips	vpc:privateIps:create
Querying a private IP address	GET /v1/{project_id}/privateips/{privateip_id}	vpc:privateIps:get
Querying private IP addresses	GET /v1/{project_id}/subnets/{subnet_id}/privateips	vpc:privateIps:list
Releasing a private IP address	DELETE /v1/{project_id}/privateips/{privateip_id}	vpc:privateIps:delete

8.2.9 Security Group

Permission	API	Action
Creating a security group	POST /v1/{project_id}/security-groups	vpc:securityGroups:create
Querying a security group	GET /v1/{project_id}/security-groups/{security_group_id}	vpc:securityGroups:get
Querying security groups	GET /v1/{project_id}/security-groups	vpc:securityGroups:get
Deleting a security group	DELETE /v1/{project_id}/security-groups/{security_group_id}	vpc:securityGroups:delete

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8.2.10 Security Group Rule

Permission	API	Action
Adding a security group rule	POST /v1/{project_id}/security-group-rules	vpc:securityGroupRules:create
Querying a security group rule	GET /v1/{project_id}/security-group-rules/{rules_security_groups_id}	vpc:securityGroupRules:get
Querying security group rules	GET /v1/{project_id}/security-group-rules	vpc:securityGroupRules:get
Deleting a security group rule	DELETE /v1/{project_id}/security-group-rules/{rules_security_groups_id}	vpc:securityGroupRules:delete
Updating a security group rule	-	vpc:securityGroupRules:update

8.2.11 VPC Tag

Permission	API	Action
Adding a tag to a VPC	POST /v2.0/{project_id}/vpcs/{vpc_id}/tags	vpc:vpcTags:create
Querying tags of a VPC	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 adding 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 project	GET /v2.0/{project_id}/vpcs/tags	vpc:vpcTags:get

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8.2.12 Subnet Tag

Permission	API	Action
Adding a tag to a subnet	POST /v2.0/{project_id}/subnets/{subnet_id}/tags	vpc:subnetTags:create
Querying tags of a subnet	GET /v2.0/{project_id}/subnets/{subnet_id}/tags	vpc:subnetTags:get
Deleting a tag from a subnet	DELETE /v2.0/{project_id}/subnets/{subnet_id}/tags/{key}	vpc:subnetTags:delete
Batch adding 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

8.3 Permissions and Supported Actions of Native OpenStack Neutron V2.0

8.3.1 Port (OpenStack Neutron API)

Permission	API	Action
Querying ports	GET /v2.0/ports	vpc:ports:get
Querying a port	GET /v2.0/ports/{port_id}	vpc:ports:get
Creating a port	POST /v2.0/ports	vpc:ports:create
Updating a port	PUT /v2.0/ports/{port_id}	vpc:ports:update
Deleting a port	DELETE /v2.0/ports/{port_id}	vpc:ports:delete

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8.3.2 Network (OpenStack Neutron API)

Permission	API	Action
Querying networks	GET /v2.0/networks	vpc:networks:get
Querying a network	GET /v2.0/networks/{network_id}	vpc:networks:get
Creating a network	POST /v2.0/networks	vpc:networks:create
Updating a network	PUT /v2.0/networks/{network_id}	vpc:networks:update
Deleting a network	DELETE /v2.0/networks/{network_id}	vpc:networks:delete

8.3.3 Subnet (OpenStack Neutron API)

Permission	API	Action
Querying subnets	GET /v2.0/subnets	vpc:subnets:get
Querying a subnet	GET /v2.0/subnets/{subnet_id}	vpc:subnets:get
Creating a subnet	POST /v2.0/subnets	vpc:subnets:create
Updating a subnet	PUT /v2.0/subnets/{subnet_id}	vpc:subnets:update
Deleting a subnet	DELETE /v2.0/subnets/{subnet_id}	vpc:subnets:delete

8.3.4 Router (OpenStack Neutron API)

Permission	API	Action
Querying routers	GET /v2.0/routers	vpc:routers:get
Querying a router	GET /v2.0/routers/{router_id}	vpc:routers:get
Creating a router	POST /v2.0/routers	vpc:routers:create

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Permission	API	Action
Updating a router	PUT /v2.0/routers/{router_id}	vpc:routers:update
Deleting a router	DELETE /v2.0/routers/{router_id}	vpc:routers:delete
Adding an interface to a router	PUT /v2.0/routers/{router_id}/add_router_interface	• vpc:routers:addInterface • vpc:routers:get
Removing an interface from a router	PUT /v2.0/routers/{router_id}/remove_router_interface	• vpc:routers:removeInterface • vpc:routers:get

8.3.5 Network ACL (OpenStack Neutron API)

Permission	API	Action
Querying all network ACL rules	GET /v2.0/fwaas/firewall_rules	vpc:firewallRules:get
Querying a network ACL rule	GET /v2.0/fwaas/firewall_rules/{firewall_rule_id}	vpc:firewallRules:get
Creating a network ACL rule	POST /v2.0/fwaas/firewall_rules	vpc:firewallRules:create
Updating a network ACL rule	PUT /v2.0/fwaas/firewall_rules/{firewall_rule_id}	vpc:firewallRules:update
Deleting a network ACL rule	DELETE /v2.0/fwaas/firewall_rules/{firewall_rule_id}	vpc:firewallRules:delete
Querying all network ACL policies	GET /v2.0/fwaas/firewall_policies	vpc:firewallPolicies:get
Querying a network ACL policy	GET /v2.0/fwaas/firewall_policies/{firewall_policy_id}	vpc:firewallPolicies:get
Creating a network ACL policy	POST /v2.0/fwaas/firewall_policies	vpc:firewallPolicies:create

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Permission	API	Action
Updating a network ACL policy	PUT /v2.0/fwaas/firewall_policies/{firewall_policy_id}	vpc:firewallPolicies:update
Deleting a network ACL policy	DELETE /v2.0/fwaas/firewall_policies/{firewall_policy_id}	vpc:firewallPolicies:delete
Inserting a network ACL rule	PUT /v2.0/fwaas/firewall_policies/{firewall_policy_id}/insert_rule	• vpc:firewallPolicies:addRule • vpc:firewallPolicies:get
Removing a network ACL rule	PUT /v2.0/fwaas/firewall_policies/{firewall_policy_id}/remove_rule	• vpc:firewallPolicies:removeRule • vpc:firewallPolicies:get
Querying all network ACL groups	GET /v2.0/fwaas/firewall_groups	vpc:firewallGroups:get
Querying a network ACL group	GET /v2.0/fwaas/firewall_groups/{firewall_group_id}	vpc:firewallGroups:get
Creating a network ACL group	POST /v2.0/fwaas/firewall_groups	vpc:firewallGroups:create
Updating a network ACL group	PUT /v2.0/fwaas/firewall_groups/{firewall_group_id}	vpc:firewallGroups:update
Deleting a network ACL group	DELETE /v2.0/fwaas/firewall_groups/{firewall_group_id}	vpc:firewallGroups:delete

8.3.6 Security Group (OpenStack Neutron API)

Permission	API	Action
Querying a security group	GET /v2.0/security-groups	vpc:securityGroups:get
Querying the details of a security group	GET /v2.0/security-groups/{security_group_id}	vpc:securityGroups:get

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Permission	API	Action
Creating a security group	POST /v2.0/security-groups	vpc:securityGroups:create
Updating a security group	PUT /v2.0/security-groups/{security_group_id}	vpc:securityGroups:update
Deleting a security group	DELETE /v2.0/security-groups/{security_group_id}	vpc:securityGroups:delete
Querying a security group rule	GET /v2.0/security-group-rules	vpc:securityGroupRules:get
Querying the details of a security group rule	GET /v2.0/security-group-rules/{rules_security_groups_id}	vpc:securityGroupRules:get
Adding a security group rule	POST /v2.0/security-group-rules	vpc:securityGroupRules:create
Deleting a security group rule	DELETE /v2.0/security-group-rules/{rules_security_groups_id}	vpc:securityGroupRules:delete

8.4 Permissions and Supported Actions of API V3

8.4.1 VPC (V3)

Permission	API	Action
Querying VPC details	GET /v3/{project_id}/vpc/vpcs/{vpc_id}	vpc:vpcs:get
Querying VPCs	GET /v3/{project_id}/vpc/vpcs	vpc:vpcs:list
Adding a secondary CIDR block to a VPC	PUT /v3/{project_id}/vpc/vpcs/{vpc_id}/add-extend-cidr	vpc:vpcs:update
Removing a secondary CIDR block from a VPC	PUT /v3/{project_id}/vpc/vpcs/{vpc_id}/remove-extend-cidr	vpc:vpcs:update

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8.4.2 Security Group (V3)

Permission	API	Action
Creating a security group	POST /v3/{project_id}/vpc/security-groups	vpc:securityGroups:create
Querying a security group	GET /v3/{project_id}/vpc/security-groups/{security_group_id}	vpc:securityGroups:get
Querying security groups	GET /v3/{project_id}/vpc/security-groups	vpc:securityGroups:get
Updating a security group	PUT /v3/{project_id}/vpc/security-groups/{security_group_id}	vpc:securityGroups:update
Deleting a security group	DELETE /v3/{project_id}/vpc/security-groups/{security_group_id}	vpc:securityGroups:delete

8.4.3 Security Group Rule (V3)

Permission	API	Action
Adding a security group rule	POST /v3/{project_id}/vpc/security-group-rules	vpc:securityGroupRules:create
Querying a security group rule	GET /v3/{project_id}/vpc/security-group-rules/{rules_security_groups_id}	vpc:securityGroupRules:get
Querying security group rules	GET /v3/{project_id}/vpc/security-group-rules	vpc:securityGroupRules:get
Deleting a security group rule	DELETE /v3/{project_id}/vpc/security-group-rules/{rules_security_groups_id}	vpc:securityGroupRules:delete
Updating a security group rule	-	vpc:securityGroupRules:update

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8.4.4 IP Address Group (V3)

Permission	API	Action
Creating an IP address group	POST /v3/{project_id}/vpc/address-groups	vpc:addressGroups:create
Querying IP address groups	GET /v3/{project_id}/vpc/address-groups	vpc:addressGroups:list
Querying an IP address group	GET /v3/{project_id}/vpc/address-groups/{address_group_id}	vpc:addressGroups:get
Updating an IP address group	PUT /v3/{project_id}/vpc/address-groups/{address_group_id}	vpc:addressGroups:update
Deleting an IP address group	DELETE /v3/{project_id}/vpc/address-groups/{address_group_id}	vpc:addressGroups:delete
Forcibly deleting an IP address group	DELETE /v3/{project_id}/vpc/address-groups/{address_group_id}/force	vpc:addressGroups:delete

8.4.5 Network ACL (V3)

Permission	API	Action
Creating a network ACL	POST /v3/{project_id}/vpc/firewalls	vpc:firewalls:create
Querying network ACLs	GET /v3/{project_id}/vpc/firewalls	vpc:firewalls:list
Querying the details of a network ACL	GET /v3/{project_id}/vpc/firewalls/{firewall_id}	vpc:firewalls:get
Updating a network ACL	PUT /v3/{project_id}/vpc/firewalls/{firewall_id}	vpc:firewalls:update

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Permission	API	Action
Deleting a network ACL	DELETE /v3/{project_id}/vpc/firewalls/{firewall_id}	vpc:firewalls:delete
Updating a network ACL rule	PUT /v3/{project_id}/vpc/firewalls/{firewall_id}/update-rules	vpc:firewalls:update
Inserting a network ACL rule	PUT /v3/{project_id}/vpc/firewalls/{firewall_id}/insert-rules	vpc:firewalls:update
Deleting a network ACL rule	PUT /v3/{project_id}/vpc/firewalls/{firewall_id}/remove-rules	vpc:firewalls:update
Associating a subnet with a network ACL	PUT /v3/{project_id}/vpc/firewalls/{firewall_id}/associate-subnets	vpc:firewalls:update
Disassociating a subnet from a network ACL	PUT /v3/{project_id}/vpc/firewalls/{firewall_id}/disassociate-subnets	vpc:firewalls:update

8.5 Precautions for API Permissions

Note:

If you have insufficient permissions, response code **200** will be returned when you query network resources and an empty list will be displayed.

You can apply for the permissions and try again.

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9 FAQs

9.1 What Are the Differences Between the VPC Subnet API and the OpenStack Neutron Subnet API?

Differences

Subnet APIs are classified into **VPC subnet APIs** and **OpenStack Neutron subnet APIs**. They can create, query, update, and delete subnets.

The differences between the two are the meanings of the network ID and subnet ID.

Log in to the management console and view the basic information about the subnet. **Network ID** and **Subnet ID** are displayed.

Figure 9-1 Basic subnet information

- The subnet ID used when calling the VPC subnet API is the network ID shown in **Figure 9-1**. For example, e06cc6c0-6967-4e0c-af03-7be3b5546ddd.
- The subnet ID used when calling the OpenStack Neutron subnet API is the subnet ID shown in **Figure 9-1**. For example, 97a14c19-fba4-46e3-9aab-60fae092aff7.

Example

The following queries subnet details to compare the difference.

VPC subnet API

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```
GET /v1/049d06b7f20037e12f0dc0137381822f/subnets/e06cc6c0-6967-4e0c-af03-7be3b5546ddd
{
   "subnet": {
      "id": "e06cc6c0-6967-4e0c-af03-7be3b5546ddd",  //Correspond to the network ID on the
management console.
      "name": "subnet-54eb",
      "description": "",
      "cidr": "192.168.0.0/24",
      "dnsList": [
         "100.125.1.202",
         "100.125.1.230"
      ],
      "status": "ACTIVE",
      "tags": [],
      "vpc_id": "f4d0ebd4-2a62-4396-980b-96e73b3386de",
      "ipv6_enable": false,
      "gateway_ip": "192.168.0.1",
      "dhcp_enable": true,
      "primary_dns": "100.125.1.202",
      "secondary_dns": "100.125.1.230",
      "availability_zone": "az1.dc1",
      "neutron_network_id": "e06cc6c0-6967-4e0c-af03-7be3b5546ddd",  //Correspond to the network ID
on the management console.
      "neutron_subnet_id": "97a14c19-fba4-46e3-9aab-60fae092aff7",  //Correspond to the subnet ID on
the management console.
      "extra_dhcp_opts": []
   }
}
```

OpenStack Neutron subnet API

```
GET /v2.0/subnets/97a14c19-fba4-46e3-9aab-60fae092aff7
{
   "subnet": {
      "name": "subnet-54eb",
      "cidr": "192.168.0.0/24",
      "id": "97a14c19-fba4-46e3-9aab-60fae092aff7",  //Correspond to the subnet ID on the management
console.
      "enable_dhcp": true,
      "network_id": "e06cc6c0-6967-4e0c-af03-7be3b5546ddd",  //Correspond to the network ID on the
management console.
      "tenant_id": "049d06b7f20037e12f0dc0137381822f",
      "project_id": "049d06b7f20037e12f0dc0137381822f",
      "dns_nameservers": [
         "100.125.1.202",
         "100.125.1.230"
      ],
      "allocation_pools": [
         {
            "start": "192.168.0.2",
            "end": "192.168.0.252"
         }
      ],
      "host_routes": [],
      "ip_version": 4,
      "gateway_ip": "192.168.0.1",
      "created_at": "2019-04-09T08:03:58",
      "updated_at": "2019-04-09T08:03:59"
   }
}
```

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9.2 What Are the Relationships Among Network ACL Groups, Policies, and Rules?

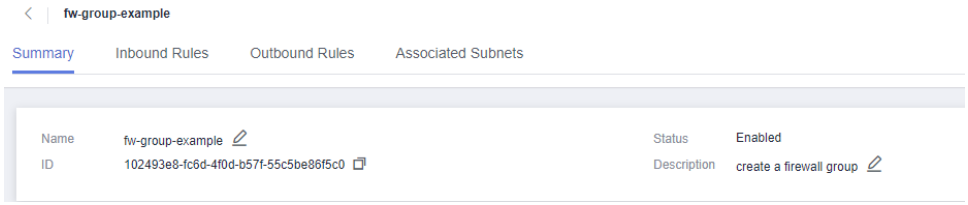
Relationships

Network ACL resources are classified into groups, policies, and rules.

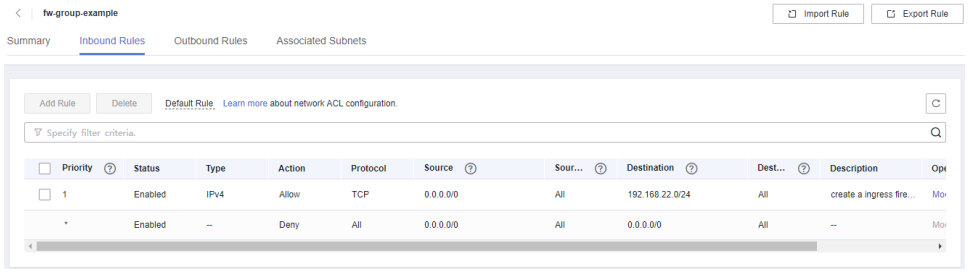
The relationships among them are as follows:

- A network ACL policy can be associated with multiple network ACL rules.
- A network ACL group can be associated with two network ACL policies. One policy controls inbound traffic and the other controls outbound traffic.
- A network ACL policy must be associated with a network ACL group.

Log in to the network console and view basic information about the network ACL. You can view the name and ID of the network ACL.



On the **Inbound Rules** or **Outbound Rules** tab, you can add, modify, or delete network ACL rules. These rules are associated with the same inbound or outbound policy.



Example

The following describes how to create network ACL resources.

- Creating a network ACL rule

```
POST /v2.0/fwaas/firewall_rules
```

Request body

```
{
    "firewall_rule": {
        "name": "fw-rule-ingress-1",
        "description": "create a ingress firewall rule ",
        "protocol": "TCP",
        "action": "ALLOW",
```

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```
        "ip_version": 4,
        "destination_ip_address": "192.168.22.0/24",
        "source_ip_address": "0.0.0.0/0",
        "enabled": true
    }
}
```

Response body of obtaining **firewall_rule_id**: 84d10f4a-9f8b-41b8-bdfa-5a0f18736f12

```
{
    "firewall_rule": {
        "protocol": "tcp",
        "description": "create a ingress firewall rule ",
        "source_ip_address": "0.0.0.0/0",
        "destination_ip_address": "192.168.22.0/24",
        "source_port": null,
        "destination_port": null,
        "id": "84d10f4a-9f8b-41b8-bdfa-5a0f18736f12",
        "name": "fw-rule-ingress-1",
        "tenant_id": "5f6387106c2048b589b369d96c2f23a2",
        "project_id": "5f6387106c2048b589b369d96c2f23a2",
        "enabled": true,
        "action": "allow",
        "ip_version": 4,
        "public": false
    }
}
```

- Creating a network ACL policy

```
POST /v2.0/fwaas/firewall_policies
```

Request body of associating with a network ACL rule

```
{
    "firewall_policy": {
        "description": "create a ingress firewall policy",
        "firewall_rules": [
          "84d10f4a-9f8b-41b8-bdfa-5a0f18736f12"
        ],
        "name": "fw-policy-ingress"
    }
}
```

Response body of obtaining **firewall_policy_id**: da037721-b895-4e07-bbcc-f5f6ac2759fb

```
{
    "firewall_policy": {
        "id": "da037721-b895-4e07-bbcc-f5f6ac2759fb",
        "name": "fw-policy-ingress",
        "project_id": "5f6387106c2048b589b369d96c2f23a2",
        "tenant_id": "5f6387106c2048b589b369d96c2f23a2",
        "description": "create a ingress firewall policy",
        "firewall_rules": [
          "84d10f4a-9f8b-41b8-bdfa-5a0f18736f12"
        ],
        "audited": false,
        "public": false
    }
}
```

- Creating a network ACL group

```
POST /v2.0/fwaas/firewall_groups
```

Request body of associating with an inbound network ACL policy

```
{
    "firewall_group": {
```

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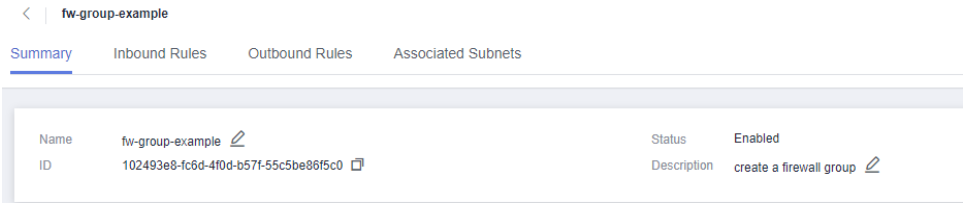
```
        "name": "fw-group-example",
        "description": "create a firewall group",
        "ingress_firewall_policy_id": "da037721-b895-4e07-bbcc-f5f6ac2759fb",
        "admin_state_up": true
    }
}
```

Response body of obtaining **firewall_group_id**: 102493e8-fc6d-4f0d-b57f-55c5be86f5c0.

```
{
    "firewall_group": {
        "id": "102493e8-fc6d-4f0d-b57f-55c5be86f5c0",
        "name": "fw-group-example",
        "project_id": "5f6387106c2048b589b369d96c2f23a2",
        "tenant_id": "5f6387106c2048b589b369d96c2f23a2",
        "admin_state_up": true,
        "egress_firewall_policy_id": null,
        "ingress_firewall_policy_id": "da037721-b895-4e07-bbcc-f5f6ac2759fb",
        "description": "create a firewall group",
        "created_at": "2023-03-09T08:54:40",
        "updated_at": "2023-03-09T08:54:40",
        "status": "INACTIVE",
        "ports": [],
        "public": false
    }
}
```

Log in to the network console and view the created network ACL resources.



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10 Out-of-Date APIs

10.1 Port (Discarded)

10.1.1 Creating a Port (Discarded)

Function

This API is used to create a port.

URI

POST /v1/ports

Request Message

- Request parameter

Table 10-1 Request parameter

Name	Mandatory	Type	Description
port	Yes	**port** object	Specifies the port objects. For details, see **Table 10-2**.

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Table 10-2 Description of the **port** field

Name	Mandatory	Type	Description
name	No	String	• Specifies the port name. • The value can contain no more than 255 characters. This parameter is left blank by default.
network_id	Yes	String	• Specifies the ID of the network to which the port belongs. • The network ID must be a real one in the network environment.
admin_state_up	No	Boolean	• Specifies the administrative state of the port. • The value can only be **true**, and the default value is **true**.
fixed_ips	No	Array of **fixed_ip** objects	• Specifies the port IP address. For details, see **Table 10-3**. For example, the value is **"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]**. • A port supports only one fixed IP address that cannot be changed.
tenant_id	No	String	Specifies the project ID.
security_groups	No	Array of strings	Specifies the UUID of the security group, for example, **"security_groups": ["a0608cbf-d047-4f54-8b28-cd7b59853fff"]**. This is an extended attribute.

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Name	Mandatory	Type	Description
allowed_address_pairs	No	Array of **allow_address_pair** objects	• 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 **allow_address_pair** in **Table 10-4**. • The IP address cannot be **0.0.0.0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled.
extra_dhcp_opts	No	Array of **extra_dhcp_opt** 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 **true**.

Table 10-3 fixed_ip object

Name	Mandatory	Type	Description
subnet_id	No	String	• Specifies the subnet ID. • You cannot change the parameter value.

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Name	Mandatory	Type	Description
ip_address	No	String	• Specifies the port IP address. • You cannot change the parameter value.

Table 10-4 allow_address_pair object

Name	Mandatory	Type	Description
ip_address	No	String	• Specifies the IP address. • You cannot set it to **0.0.0.0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled.
mac_address	No	String	Specifies the MAC address.

Table 10-5 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"
        ]
    }
}
```

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Response Message

- Response parameter

Table 10-6 Response parameter

Name	Type	Description
port	**port** object	Specifies the port objects. For details, see **Table 10-7**.

Table 10-7 Description of the **port** field

Name	Type	Description
id	String	Specifies the port ID, which uniquely identifies the port.
name	String	• Specifies the port name. • The value can contain no more than 255 characters. This parameter is left blank by default.
network_id	String	• Specifies the ID of the network to which the port belongs. • The network ID must be a real one in the network environment.
admin_state_up	Boolean	• Specifies the administrative state of the port. • The value can only be **true**, and the default value is **true**.
mac_address	String	• Specifies the port MAC address. • The system automatically sets this parameter, and you are not allowed to configure the parameter value.
fixed_ips	Array of **fixed_ip** objects	• 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"}]**. • A port supports only one fixed IP address that cannot be changed.

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Name	Type	Description
device_id	String	• Specifies the ID of the device to which the port belongs. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
device_owner	String	• Specifies the belonged device, which can be the DHCP server, router, load balancer, or Nova. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
tenant_id	String	Specifies the project ID.
status	String	• Specifies the port status. The status of a HANA SR-IOV VM port is always **DOWN**. • The value can be **ACTIVE**, **BUILD**, or **DOWN**.
security_groups	Array of strings	Specifies the security group UUID (extended attribute).
allowed_address_pairs	Array of **allow_address_pair** objects	• 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 **allow_address_pair** in **Table 10-9**. • The IP address cannot be **0.0.0.0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled.

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Name	Type	Description
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the extended option (extended attribute) of DHCP. For details, see **Table 10-10**.
binding:vif_details	Object	Specifies the VIF details. Parameter **ovs_hybrid_plug** specifies whether the OVS/bridge hybrid mode is used.
binding:profile	Object	Specifies the user-defined settings. This is an extended attribute. Instructions: • The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. Common tenants do not have the permission to change the value of this field, which is maintained by the system. Example: {"internal_elb": true} • The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true }, Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.

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Name	Type	Description
binding:vnic_type	String	• Specifies the type of the bound vNIC. • The value can be **normal** or **direct**. Parameter **normal** indicates software switching. Parameter **direct** indicates SR-IOV PCIe passthrough, which is not supported.
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 **true**.

Table 10-8 fixed_ip object

Name	Type	Description
subnet_id	String	• Specifies the subnet ID. • You cannot change the parameter value.
ip_address	String	Specifies the port IP address.

Table 10-9 allow_address_pair object

Name	Type	Description
ip_address	String	• Specifies the IP address. • You cannot set it to **0.0.0.0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24).
mac_address	String	Specifies the MAC address.

Table 10-10 extra_dhcp_opt object

Name	Type	Description
opt_name	String	Specifies the option name.

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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**.

10.1.2 Querying a Port (Discarded)

Function

This API is used to query a single port.

URI

GET /v1/ports/{port_id}

Table 10-11 describes the parameters.

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Table 10-11 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 10-12 Response parameter

Name	Type	Description
port	**port** object	Specifies the port objects. For details, see **Table 10-13**.

Table 10-13 Description of the **port** field

Name	Type	Description
id	String	Specifies the port ID, which uniquely identifies the port.
name	String	• Specifies the port name. • The value can contain no more than 255 characters. This parameter is left blank by default.
network_id	String	• Specifies the ID of the network to which the port belongs. • The network ID must be a real one in the network environment.
admin_state_up	Boolean	• Specifies the administrative state of the port. • The value can only be **true**, and the default value is **true**.

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Name	Type	Description
mac_address	String	• Specifies the port MAC address. • The system automatically sets this parameter, and you are not allowed to configure the parameter value.
fixed_ips	Array of **fixed_ip** objects	• Specifies the port IP address. For example, the value is **"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]**. For details, see **Table 10-14**. • A port supports only one fixed IP address that cannot be changed.
device_id	String	• Specifies the ID of the device to which the port belongs. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
device_owner	String	• Specifies the belonged device, which can be the DHCP server, router, load balancer, or Nova. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
tenant_id	String	Specifies the project ID.
status	String	• Specifies the port status. The status of a HANA SR-IOV VM port is always DOWN. • The value can be **ACTIVE**, **BUILD**, or **DOWN**.
security_groups	Array of strings	Specifies the security group UUID (extended attribute).

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Name	Type	Description
allowed_address_pairs	Array of **allow_address_pair** objects	• 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 **allow_address_pair** in **Table 10-15**. • The IP address cannot be **0.0.0.0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled.
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the extended option (extended attribute) of DHCP. For details, see **Table 10-16**.
binding:vif_details	Object	Specifies the VIF details. Parameter **ovs_hybrid_plug** specifies whether the OVS/bridge hybrid mode is used.

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Name	Type	Description
binding:profile	Object	Specifies the user-defined settings. This is an extended attribute. Instructions: • The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. Common tenants do not have the permission to change the value of this field, which is maintained by the system. Example: {"internal_elb": true} • The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true }, Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.
binding:vnic_type	String	• Specifies the type of the bound vNIC. • The value can be **normal** or **direct**. Parameter **normal** indicates software switching. Parameter **direct** indicates SR-IOV PCIe passthrough, which is not supported.

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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 **true**.

Table 10-14 fixed_ip object

Name	Type	Description
subnet_id	String	• Specifies the subnet ID. • You cannot change the parameter value.
ip_address	String	Specifies the port IP address.

Table 10-15 allow_address_pair object

Name	Type	Description
ip_address	String	• Specifies the IP address. • You cannot set it to **0.0.0.0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24).
mac_address	String	Specifies the MAC address.

Table 10-16 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": [
            {
```

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```
            "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**.

10.1.3 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={ip_address}&fixed_ips=subnet_id={subnet_id}
```

Table 10-17 describes the parameters.

Table 10-17 Parameter description

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

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Name	Mandatory	Type	Description
name	No	String	• Specifies that the port name is used as the filter. • The value can contain no more than 255 characters.
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	• Specifies that the status is used as the filter. • The value can be **ACTIVE**, **BUILD**, or **DOWN**.

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Name	Mandatory	Type	Description
marker	No	String	Specifies a resource ID for pagination query, indicating that the query starts from the next record of the specified resource ID. This parameter can work together with the parameter **limit**. • If parameters **marker** and **limit** are not passed, resource records on the first page will be returned. • If the parameter **marker** is not passed and the value of parameter **limit** is set to **10**, the first 10 resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the value of parameter **limit** is set to **10**, the 11th to 20th resource records will be returned. • If the value of the parameter **marker** is set to the resource ID of the 10th record and the parameter **limit** is not passed, 11th to 2,000th resource records will be returned. The default value of **limit** is **2000**.
limit	No	Integer	Specifies the number of records that will be returned on each page. The value is from 0 to intmax (2^31-1). The default value is 2000. **limit** can be used together with **marker**. For details, see the parameter description of **marker**.

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Name	Mandatory	Type	Description
fixed_ips	No	String	You can use **fixed_ips=ip_address** or **fixed_ips=subnet_id** for filtering.

Request Message

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

Response Message

- Response parameter

Table 10-18 Response parameter

Name	Type	Description
ports	Array of **port** objects	Specifies the port objects. For details, see **Table 10-19**.

Table 10-19 Description of the **port** field

Name	Type	Description
id	String	Specifies the port ID, which uniquely identifies the port.
name	String	• Specifies the port name. • The value can contain no more than 255 characters. This parameter is left blank by default.
network_id	String	• Specifies the ID of the network to which the port belongs. • The network ID must be a real one in the network environment.
admin_state_up	Boolean	• Specifies the administrative state of the port. • The value can only be **true**, and the default value is **true**.

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Name	Type	Description
mac_address	String	• Specifies the port MAC address. • The system automatically sets this parameter, and you are not allowed to configure the parameter value.
fixed_ips	Array of **fixed_ip** objects	• Specifies the port IP address. For example, the value is **"fixed_ips": [{"subnet_id": "4dc70db6-cb7f-4200-9790-a6a910776bba", "ip_address": "192.169.25.79"}]**. For details, see **Table 10-20**. • A port supports only one fixed IP address that cannot be changed.
device_id	String	• Specifies the ID of the device to which the port belongs. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
device_owner	String	• Specifies the belonged device, which can be the DHCP server, router, load balancer, or Nova. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
tenant_id	String	Specifies the project ID.
status	String	• Specifies the port status. The status of a HANA SR-IOV VM port is always DOWN. • The value can be **ACTIVE**, **BUILD**, or **DOWN**.
security_groups	Array of strings	Specifies the security group UUID (extended attribute).

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Name	Type	Description
allowed_address_pairs	Array of **allow_address_pair** objects	• 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 **allow_address_pair** in **Table 10-21**. • The IP address cannot be **0.0.0.0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled.
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the extended option (extended attribute) of DHCP. For details, see **Table 10-22**.
binding:vif_details	Object	Specifies the VIF details. Parameter **ovs_hybrid_plug** specifies whether the OVS/bridge hybrid mode is used.

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Name	Type	Description
binding:profile	Object	Specifies the user-defined settings. This is an extended attribute. Instructions: • The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. Common tenants do not have the permission to change the value of this field, which is maintained by the system. Example: {"internal_elb": true} • The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true }, Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.
binding:vnic_type	String	• Specifies the type of the bound vNIC. • The value can be **normal** or **direct**. Parameter **normal** indicates software switching. Parameter **direct** indicates SR-IOV PCIe passthrough, which is not supported.

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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 **true**.

Table 10-20 fixed_ip object

Name	Type	Description
subnet_id	String	• Specifies the subnet ID. • You cannot change the parameter value.
ip_address	String	Specifies the port IP address.

Table 10-21 allow_address_pair object

Name	Type	Description
ip_address	String	• Specifies the IP address. • You cannot set it to **0.0.0.0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24).
mac_address	String	Specifies the MAC address.

Table 10-22 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": [
```

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```
            {
                "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**.

10.1.4 Updating a Port (Discarded)

Function

This API is used to update a port.

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URI

PUT /v1/ports/{port_id}

Table 10-23 describes the parameters.

Table 10-23 Parameter description

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

Request Message

- Request parameter

Table 10-24 Request parameter

Name	Mandatory	Type	Description
port	Yes	**port** object	Specifies the port objects. For details, see **Table 10-25**.

Table 10-25 Description of the **port** field

Name	Mandatory	Type	Description
name	No	String	• Specifies the port name. • The value can contain no more than 255 characters. This parameter is left blank by default.
security_groups	No	Array of strings	Specifies the security group UUID.

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Name	Mandatory	Type	Description
allowed_address_pairs	No	Array of **allow_address_pair** objects	• 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 **allow_address_pair** in **Table 10-26**. • Constraints: – The IP address cannot be **0.0.0.0**. – Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). – If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled. – To assign a virtual IP address to an ECS, the IP address configured in **allowed_address_pairs** must be an existing ECS NIC IP address. Otherwise, the virtual IP address cannot be used for communication.
extra_dhcp_opts	No	Array of **extra_dhcp_opt** objects	Specifies the extended option (extended attribute) of DHCP. For details, see **Table 10-27**.

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Table 10-26 allow_address_pair object

Name	Type	Description
ip_address	String	• Specifies the IP address. • You cannot set it to **0.0.0.0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24).
mac_address	String	Specifies the MAC address.

Table 10-27 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 10-28 Response parameter

Name	Type	Description
port	**port** object	Specifies the port objects. For details, see **Table 10-29**.

Table 10-29 Description of the **port** field

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

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Name	Type	Description
name	String	• Specifies the port name. • The value can contain no more than 255 characters. This parameter is left blank by default.
network_id	String	• Specifies the ID of the network to which the port belongs. • The network ID must be a real one in the network environment.
admin_state_up	Boolean	• Specifies the administrative state of the port. • The value can only be **true**, and the default value is **true**.
mac_address	String	• Specifies the port MAC address. • The system automatically sets this parameter, and you are not allowed to configure the parameter value.
fixed_ips	Array of **fixed_ip** objects	• 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"}]**. • A port supports only one fixed IP address that cannot be changed.
device_id	String	• Specifies the ID of the device to which the port belongs. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
device_owner	String	• Specifies the belonged device, which can be the DHCP server, router, load balancer, or Nova. • The system automatically sets this parameter, and you are not allowed to configure or change the parameter value.
tenant_id	String	Specifies the project ID.

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Name	Type	Description
status	String	• Specifies the port status. The status of a HANA SR-IOV VM port is always **DOWN**. • The value can be **ACTIVE**, **BUILD**, or **DOWN**.
security_groups	Array of strings	Specifies the security group UUID (extended attribute).
allowed_address_pairs	Array of **allow_address_pair** objects	• 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 **allow_address_pair** in **Table 10-9**. • The IP address cannot be **0.0.0.0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24). • If the value of **allowed_address_pairs** is **1.1.1.1/0**, the source/destination check is disabled.
extra_dhcp_opts	Array of **extra_dhcp_opt** objects	Specifies the extended option (extended attribute) of DHCP. For details, see **Table 10-10**.
binding:vif_details	Object	Specifies the VIF details. Parameter **ovs_hybrid_plug** specifies whether the OVS/bridge hybrid mode is used.

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Name	Type	Description
binding:profile	Object	Specifies the user-defined settings. This is an extended attribute. Instructions: • The **internal_elb** field is in boolean type and is available to common tenants. Set the value of this parameter to **true** only when you assign a virtual IP address to an internal network load balancer. Common tenants do not have the permission to change the value of this field, which is maintained by the system. Example: {"internal_elb": true} • The **disable_security_groups** field is in boolean type and is available to common tenants. The default value is **false**. In high-performance communication scenarios, you can set the parameter value to **true**, which makes this parameter to be available to common tenants. You can specify this parameter when creating a port. Currently, the value of this parameter can only be set to **true**. Example: {"disable_security_groups": true }, Currently, the value can only be set to **true**. When the value is set to **true**, the FWaaS function does not take effect.
binding:vnic_type	String	• Specifies the type of the bound vNIC. • The value can be **normal** or **direct**. Parameter **normal** indicates software switching. Parameter **direct** indicates SR-IOV PCIe passthrough, which is not supported.

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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 **true**.

Table 10-30 fixed_ip object

Name	Type	Description
subnet_id	String	• Specifies the subnet ID. • You cannot change the parameter value.
ip_address	String	Specifies the port IP address.

Table 10-31 allow_address_pair object

Name	Type	Description
ip_address	String	• Specifies the IP address. • You cannot set it to **0.0.0.0**. • Configure a dedicated security group for the port if the parameter **allowed_address_pairs** has a large CIDR block (subnet mask less than 24).
mac_address	String	Specifies the MAC address.

Table 10-32 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": [
            {
```

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


Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

10.1.5 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 10-33 describes the parameters.

Table 10-33 Parameter description

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

Request Message

- Request parameter

  None

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- Example request
  None

Response Message

- Response parameter
  None
- Example response
  None

Status Code

See **Status Codes**.

Error Code

See **Error Codes**.

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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

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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	Unit	Conversion Rule	Monitored Object (Dimension)	Monitoring Interval (Raw Data)
upstream_bandwidth	Outbound Bandwidth	Network rate of outbound traffic (Previously called "Upstream Bandwidth")	≥ 0	bit/s	1000 (SI)	bandwidth_id,publicip_id	1 minute
downstream_bandwidth	Inbound Bandwidth	Network rate of inbound traffic (Previously called "Downstream Bandwidth")	≥ 0	bit/s	1000 (SI)	bandwidth_id,publicip_id	1 minute

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ID	Name	Description	Value Range	Unit	Conversion Rule	Monitored Object (Dimension)	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	0-100	%	N/A	bandwidth_id,publicip_id	1 minute
downstream_bandwidth_usage	Inbound Bandwidth Usage	Usage of inbound bandwidth in the unit of percent. Inbound bandwidth usage = Inbound bandwidth/ Purchased bandwidth	0-100	%	N/A	bandwidth_id,publicip_id	1 minute
up_stream	Outbound Traffic	Network traffic going out of the cloud platform in a minute (Previously called "Upstream Traffic")	≥ 0	Byte	1000 (SI)	bandwidth_id,publicip_id	1 minute

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ID	Name	Description	Value Range	Unit	Conversion Rule	Monitored Object (Dimension)	Monitoring Interval (Raw Data)
down_stream	Inbound Traffic	Network traffic going into the cloud platform in a minute (Previously called "Downstream Traffic")	≥ 0	Byte	1000 (SI)	bandwidth_id,publicip_id	1 minute

Dimension

Key	Value
publicip_id	EIP ID
bandwidth_id	Bandwidth ID

A.3 Status Codes

Table A-2 Normal values

Normal Response Code	Type	Description
200	OK	Specifies the normal response code for the GET, PUT, and POST operations.
201	Created	Specifies the normal response code for the POST operation of the OpenStack Neutron API and API V3.
202	Accepted	Specifies the normal response to the pre-check request of the V3 API.
204	No Content	Specifies the normal response code for the DELETE operation.

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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.
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",
```

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```
    "message": "Available zone Name is null."
}
```

Error Code Description

Module	Status Code	Error Code	Message	Description	Handling Measure
Public	400	VPC.0002	Available zone Name is null.	The AZ is left blank.	Check whether the **availability_zone** field in the request body for creating a subnet is left blank.
	404	VPC.0003	VPC does not exist.	The VPC does not exist.	Check whether the VPC ID is correct or whether the VPC exists under the tenant.
	400	VPC.0004	VPC is not active, please try later.	The VPC status is abnormal.	Try again later or contact technical support.
	401	VPC.0005	Lack of user authority.	User restricted.	Check whether the account is in arrears or has not applied for the OBT permission.
	401	VPC.0009	real-name authentication fail.	Real-name authentication fails.	Contact technical support.
Public	400	VPC.0007	urlTenantId is not equal tokenTenantId	Inconsistent tenant IDs.	The tenant ID in the URL is different from that parsed in the token.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
Public	403	VPC.0010	Rules on xx by ** disallowed by policy	Insufficient permissions to make calls to the underlying system.	Obtain the required permissions.
	403	VPC.2201	Policy doesn't allow <x:x:x> to be performed	Insufficient fine-grained permissions.	Obtain the required permissions.
Public	400	VPC.0014	This enterpriseProject status is disable.	The enterprise project is unavailable.	Use the ID of another available enterprise project.
	400	VPC.0011	EnterpriseProjec-tId is invalid	Invalid enterprise project ID.	Enter a valid enterprise project ID.

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Module	Status Code	Error Code	Message	Description	Handling Measure
Creating a port	400	VPC.2500	Param is invalid.	Invalid port parameter.	Check whether the parameter values are valid based on the returned error message and API reference document.
	409	VPC.0701	IP is in use	The IP address of the port has been used.	Change the IP address.
	409	VPC.2511	Quota exceeded for resources: ['vip'].	The maximum number of virtual IP addresses has been reached.	Delete virtual IP addresses that are no longer required.
	500	VPC.2502	The system error.	Calling the backend service fails.	Try again later or contact technical support.
Querying a port	404	VPC.2502	Port xx not found	The port does not exist.	Check whether the port exists.
	500	VPC.2502	The system error.	An error is returned for the failure to call the backend service.	Check whether the Neutron service is normal or contact technical support.
Querying ports	404	VPC.2502	Port xx not found	The port does not exist.	Check whether the port exists.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	500	VPC.2502	The system error.	An error is returned for the failure to call the backend service.	Check whether the Neutron service is normal or contact technical support.
Deleting a port	400	VPC.2500	Port's device_id is not empty.	Invalid parameters.	Check whether the parameter values are valid based on the returned error message.
	404	VPC.2502	Port xx not found	Invalid parameters.	Check whether the port exists.
	500	VPC.2502	Neutron Error.	Calling the backend service fails.	Try again later or contact technical support.
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.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
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.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
	409	VPC.0103	Resource status is busy, try it 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.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
	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.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
	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.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
	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.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
	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.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	500	VPC.0209	subnet is still used ,such as computer, LB.	The subnet cannot be deleted because it is being used by an ECS or load balancer.	Delete the ECS or load balancer in the subnet.
	500	VPC.0210	Subnet has been used by routes, please remove the routes first and try again.	The subnet cannot be deleted because it is being used by the custom route.	Delete the custom route.
	500	VPC.0211	subnet is still used by LBaas.	The subnet cannot be deleted because it is being used by load balancers.	Delete load balancers in the subnet.
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.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	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.
	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.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	409	VPC.0703	No more IP addresses available on network xxx.	Insufficient IP addresses.	Check whether the subnet has sufficient IP addresses.
Querying a Private IP Address	404	VPC.0704	Query resource by id fail.	The private IP address does not exist.	Check whether the private IP address exists.
Querying Private IP Addresses	400	VPC.0702	query 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.
	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	privateIp is in use.	The private IP address is in use.	Check whether the private IP address is being used by other resource.

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Module	Status Code	Error Code	Message	Description	Handling Measure
Creating a security group	400	VPC.0601	Creating securitygroup name is invalid.	The parameters of the security group are incorrect.	Check whether the parameter values are valid based on the returned error message and API reference document.
	500	VPC.0602	Add security group fail.	An internal error occurs in the security group.	Check whether the Neutron service is normal or contact technical support.
	409	VPC.0604	Quota exceeded for resources: ['security_group'].	Insufficient security group quota.	Delete the security group that is no longer required or apply for increasing the quota.
Querying a security group	400	VPC.0601	Securitygroup id is invalid.	The parameters of the security group are incorrect.	Check whether the security group ID is valid.
	500	VPC.0602	Query security group fail.	An internal error occurs in the security group.	Check whether the Neutron service is normal or contact technical support.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	404	VPC.0603	Securitygroup is not exist.	The security group does not exist.	Check whether the security group ID is correct or whether the security group exists under the tenant.
	404/500	VPC.0612	Neutron Error.	An internal error occurs in the security group.	Contact technical support.
Querying security groups	400	VPC.0601	Query security groups error limit is invalid.	The parameters of the security group are incorrect.	Check whether the parameter values are valid based on the returned error message and API reference document.
	500	VPC.0602	Query security groups fail.	An internal error occurs in the security group.	Check whether the Neutron service is normal or contact technical support.

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Module	Status Code	Error Code	Message	Description	Handling Measure
Creating a security group rule	409	VPC.0602	1.Security group rule already exists. 2.Quota exceeded for resources: ['security_group_rule']. 3.Failed to create the security group rule concurrently. The rule already exists.	The security group rule already exists. Insufficient security group rule quota. Failed to create the security group rule concurrently. The rule already exists.	Change the request body for creating a security group rule. Delete the security group rule that is no longer required or apply for increasing the quota. Check whether the security group rules created concurrently are different from each other.
Route table	400	VPC.2800	Routetable ID is invalid.	Invalid route table parameters.	Ensure that the request parameters are correct.
	400/500	VPC.2801	NeutronError	Internal route table error.	Check the request parameters or contact technical support.
	404	VPC.2802	RouteTable is not exist	The route table could not be found.	Check whether the route table exists.
	400	VPC.2803	NeutronError	The destination of the route overlaps the subnet.	The destination of the route in the request parameters already exists.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	409	VPC.2804	The routetable that been bonded by subnet can't be deleted	Failed to delete the route table because it is associated with one or more subnets.	Disassociate the subnets from the route table and try again.
	500	VPC.2805	NeutronError	Failed to change the next hop of the route.	Contact technical support.
	500	VPC.2806	Query subnet id by network id failed for illegal argument	Failed to associate subnets with or disassociate them from the route table.	Contact technical support.
	400	VPC.2807	subnet not exist or not belong to the vpc, associate routertable failed	The subnet to be associated with the route table does not exist or does not belong to the VPC.	Check the request parameters or change the subnet to one in the VPC of the route table.
	404	VPC.2808	RouteTable is not exist	The route table could not be found.	Check whether the route table exists.
	400	VPC.2809	NeutronError	The destination of the route overlaps with that of a system route.	Ensure that the destination in each route is unique.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	400	VPC.2810	the vpc cannot support customized routetable	The current VPC does not support the custom route function.	Change the VPC or contact technical support.
	400	VPC.2811	InvalidVgwForRouteGateway	The virtual gateway of the current Direct Connect connection has not been associated with any device and the route cannot be delivered.	Select another Direct Connect connection.
	400	VPC.2812	The destination of route to add is exist already	The route destination already exists.	Use an available destination.
	400	VPC.2813	RoutePerRouteTableOverLimit	The route quota is insufficient.	Increase the route quota or select another route table.
	500	VPC.2814	internal server error	An internal processing error occurs in the route table.	Contact technical support.
	400	VPC.2815	DuplicatedDestination	The route destination already exists.	Use an available destination.
	400	VPC.2816	subnet has been bonded by routetable	The subnet has already been associated to a route table.	Disassociate the subnet, and then associate it with another route table.

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Module	Status Code	Error Code	Message	Description	Handling Measure
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 **action** is **create** or **delete**.
	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.
	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 **resource_type** is **vpcs**.
	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 resourceInstancesReq is null.	The matches exist, and the value is null.	Use valid matches.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	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 resourceInstancesReq is duplicate.	There are duplicate tag values in the tag list.	Use valid tags.
	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 **matches** is not the resource name.	Use valid matches.
	400	VPC.1801	Limit in resourceInstancesReq is invalid. Offset in resourceInstancesReq is invalid.	Invalid **limit** or **offset** value.	Use valid **limit** and **offset** values.
	400	VPC.1801	ResourceInstancesReq 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.

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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]	A value in tags exceeds the maximum length.	Use valid values in tags.
	400	VPC.1801	ResourceInstancesReq is null or invalid.	The matches dictionary structure is missing.	Use a valid matches dictionary structure.
	400	VPC.1801	The number of Matches in resourceInstancesReq is 0.	The matches are an empty list.	Use a valid matches list.
	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.
Querying the network IP address usage	400	VPC.2301	parameter network_id is invalid.	The request parameter is incorrect.	Enter a valid network ID.
	400	VPC.2302	Network xxx could not be found.	The network is not found.	Ensure that the network ID exists.

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Module	Status Code	Error Code	Message	Description	Handling Measure
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.
	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.

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Module	Status Code	Error Code	Message	Description	Handling Measure
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.
	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.

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Module	Status Code	Error Code	Message	Description	Handling Measure
Querying a VPC (V3)	404	VPC.9904	Vpc xxx could not be found.	The queried VPC does not exist.	Check whether the VPC to be queried exists.
Adding a secondary CIDR block to a VPC (V3)	400	VPC.9911	xxx is not a valid cidr format.	Invalid CIDR block format.	Enter a valid CIDR block.
	400	VPC.9912	Input extend cidr num xxx over limit xxx.	The number of secondary CIDR blocks to be added exceeds the upper limit.	Check whether there are too many secondary CIDR blocks in the VPC.
	409	VPC.9914	Add Extend cidr xxx conflict with exist cidr xxx.	The secondary CIDR block conflicts with an existing CIDR block.	Enter a different secondary CIDR block.
	400	VPC.9916	Add Extend cidr %s conflict with black list cidr %s-24.	The secondary CIDR block overlaps with a blacklisted CIDR block.	Enter a secondary CIDR block that is not blacklisted. For details about the secondary CIDR block blacklist, see the *API Reference*.
Removing a secondary CIDR block from a VPC (V3)	404	VPC.9915	Extend cidr xxx could not be found.	The secondary CIDR block to be removed does not exist.	Enter an existing secondary CIDR block.

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Module	Status Code	Error Code	Message	Description	Handling Measure
Querying an IP address group	404	VPC.9904	Address_group xxx could not be found.	The IP address group does not exist.	Check whether the IP address group exists.
Creating an IP address group	400	VPC.9901	Duplicate ip_set in request body xxx.	The **ip_set** request body contains duplicate data.	Ensure that the **ip_set** request body does not contain duplicate data.
	400	VPC.9901	Invalid ip_set:xxx parameter in request body.	Invalid data in the value of parameter **ip_set**.	Ensure that the data in the value of parameter **ip_set** is valid.
	409	VPC.9905	Quota exceeded for resources: 'address_group'.	Insufficient IP address group quota.	Delete the address groups that are not required or increase the quota.
Updating an IP address group	400	VPC.9901	Duplicate ip_set in request body xxx.	The **ip_set** request body contains duplicate data.	Ensure that the **ip_set** request body does not contain duplicate data.
	400	VPC.9901	Invalid ip_set:xxx parameter in request body.	Invalid data in the value of parameter **ip_set**.	Ensure that the data in the value of parameter **ip_set** is valid.
	404	VPC.9904	Address_group xxx could not be found.	The IP address group to be updated does not exist.	Check whether the IP address group exists.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	409	VPC.9905	Quota exceeded for resources: ['address_group_contain_ipset'].	Insufficient IP address group rule quota.	Delete rules that are not required from the IP address group or increase the rule quota.
Deleting an IP address group	404	VPC.9904	Address_group xxx could not be found.	The IP address group to be deleted does not exist.	Check whether the IP address group exists.
	409	VPC.9907	1. Addressgroup xxx is used by securitygroup rules. 2. Addressgroup xxx is used by firewall rules.	1. The IP address group is used by a security group rule. 2. The IP address group is used by a network ACL rule.	Check whether the security group rule or network ACL rule is required. If not, use the API for forcibly deleting the IP address group.
Querying a security group (V3)	404	VPC.9904	Security group xxx does not exist.	The security group to be queried does not exist.	Check whether the security group to be queried exists.
Creating a security group (V3)	409	VPC.9905	Quota exceeded for resources: security_group.	Insufficient security group quota.	Delete the security groups that are not required or increase the quota.
Updating a security group (V3)	404	VPC.9904	SecurityGroup xxx could not be found.	The security group to be updated does not exist.	Check whether the security group to be queried exists.

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Module	Status Code	Error Code	Message	Description	Handling Measure
Deleting a security group (V3)	404	VPC.9904	Security_group xxx could not be found.	The security group to be deleted does not exist.	Check whether the security group exists.
	409	VPC.9902	Security Group xxx is in use.	The security group to be deleted is associated with a port.	Disassociate the port from the security group and try again.
Querying a security group rule (V3)	404	VPC.9904	Security_group_rule xxx could not be found.	The security group rule to be queried does not exist.	Check whether the security group rule exists.
Creating a security group rule (V3)	409	VPC.9905	Quota exceeded for resources: ['security_group_rule'].	Insufficient security group rule quota.	Delete the security group rules that are not required or increase the quota.
	404	VPC.9904	security_group_id xxx could not be found.	The security group defined by **security_group_id** does not exist.	Check whether the security group information is correct.
	404	VPC.9904	remote security group xxx could not be found.	The security group defined by **remote_group_id** does not exist.	Check whether the security group information is correct.

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Module	Status Code	Error Code	Message	Description	Handling Measure
	404	VPC.9904	Address group xxx does not exist.	The IP address group defined by **remote_address_group_id** does not exist.	Check whether the IP address group information is correct.
	400	VPC.9902	Security group rule for ethertype xxx not supported. Allowed values are [IPv4, IPv6].	Invalid **ethertype** value.	Modify the request parameter. Enter a valid **ethertype** value. Supported values are IPv4 and IPv6, which are case insensitive.
	400	VPC.9902	Ethertype xxx and address_group ip_version xxx not match	The **ethertype** value in the request is inconsistent with the IP version of the IP address group.	Check the IP version of the IP address group defined by **remote_address_group_id**. The IP address version must be the same as the **ethertype** value.
	409	VPC.9902	Security group rule already exists. Rule id is xxx.	The security group rule already exists.	Ensure that the specified security group rule does not conflict with existing rules.

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Module	Status Code	Error Code	Message	Description	Handling Measure
Deleting a security group rule (V3)	404	VPC.9904	Security_group_rule xxx could not be found.	The security group rule to be queried does not exist.	Check whether the security group rule exists.

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 a project ID by calling the API used to **query projects based on specified criteria**.

The API used to obtain a project ID is GET https://{Endpoint}/v3/projects. {Endpoint} is the IAM endpoint and can be obtained from Regions and Endpoints. For details about API authentication, see **Authentication**.

The following is an example response. The value of **id** is the project ID.

```
{
    "projects": [
        {
            "domain_id": "65ewtrgaggshhk1223245sghjlse684b",
            "is_domain": false,
            "parent_id": "65ewtrgaggshhk1223245sghjlse684b",
            "name": "project_name",
            "description": "",
            "links": {
                "next": null,
                "previous": null,
                "self": "https://www.example.com/v3/projects/a4adasfjljaaaakla12334jklga9sasfg"
            },
            "id": "a4adasfjljaaaakla12334jklga9sasfg",
            "enabled": true
        }
    ],
    "links": {
        "next": null,
        "previous": null,
        "self": "https://www.example.com/v3/projects"
    }
}
```


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Obtain a Project ID from the Console

To obtain a project ID from the console, perform the following operations:

1. Log in to the management console.
2. Click the username and select **My Credentials** from the drop-down list. On the **API Credentials** page, view the project ID in the project list.

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