Structure of the manuals

<table>
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<td>Detailed reference for using the REST API.</td>
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<tr>
<td>• Foundation Service</td>
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<td>• Network (this document)</td>
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<td>• Application Platform Service</td>
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<tr>
<td>IaaS Features Handbook</td>
<td>Explains the features provided by this service.</td>
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<tr>
<td>IaaS API User Guide</td>
<td>Explains how to use the REST API, how to build the API runtime environment, and sample scripts according to usage sequences, etc.</td>
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Notes

• In this document it is assumed that APIs are executed using curl commands. It is also assumed that "bash" will be used as the execution environment for curl commands.
• For details on the characters that can be used for each service described in this document, refer to "Character Strings Specifiable for Names" in the "Features Handbook".

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Part 1: Virtual Network

Topics:

- Common information
- Network
- Subnet
- Security groups
- Port
- Global IP
1.1 Common information

1.1.1 General requirements

This section describes general requirements to use this API.

- Specify the name and description input parameters using up to 255 characters.
- Set the version of the IP address to be specified in the request parameter to "4" ("ip_version": 4), and specify the IP address (XXX_ip_address) in IPv4 format.
- When executing the API that lists the resources, only some of the availability zone information may be returned. If this happens, it is assumed that infrastructure maintenance is in progress, so wait for a few moments (at least one minute) and then execute the API again.

1.1.2 Common API items

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<td>X-Auth-Token</td>
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1.1.3 Common API error codes

Example common API error codes

Response status

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<td>503</td>
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<td>serviceUnavailable</td>
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<td>badRequest</td>
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</tr>
<tr>
<td>403</td>
<td>resizeNotAllowed</td>
</tr>
<tr>
<td>404</td>
<td>itemNotFound</td>
</tr>
<tr>
<td>405</td>
<td>badMethod</td>
</tr>
<tr>
<td>409</td>
<td>backupOrResizeInProgress</td>
</tr>
<tr>
<td>409</td>
<td>buildInProgress</td>
</tr>
</tbody>
</table>
### Status code Description

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>409</td>
<td>conflictingRequest</td>
</tr>
<tr>
<td>413</td>
<td>overLimit</td>
</tr>
<tr>
<td>413</td>
<td>badMediaType</td>
</tr>
</tbody>
</table>

- If the user has insufficient privileges to issue the target API when issuing the API for showing (Show) or deleting (Delete) resources, the status code 404 may be returned.
- If the user has insufficient privileges to issue the target API when issuing the API for updating (Update) resources, the status code 403 may be returned.
- If the user has insufficient privileges to issue the target API when issuing the API for listing (List) resources, the status code 200 will be returned and a null array will be set in the body. If there are resources with the shared attribute set to "True", information on the target resources only will be returned.

---

### 1.1.4 Generate URLs when using APIs

The APIs require URLs of the network type, which can be generated by the identity service on the Service catalog.

The endpoint URL is returned in the following format by the identity service.

```
https://networking.***.cloud.global.fujitsu.com
```

*** indicates the region identifier

Join the path name of each API in the host section of the endpoint URL, and create the URL.

### 1.1.5 API options

**1.1.5.1 API options**

Two options are available for APIs that retrieve resource information (List, Show).

**1.1.5.2 filter**

Filters can be specified to retrieve only resources matching the specified attributes from the list of resource information to be retrieved.

Multiple attributes can be specified using AND as a condition.

This option can only be used for the List API.

Execution example:

- Retrieve the network with the name "private"
  
  GET /v2.0/networks?name=private

- To filter using multiple attributes with AND. Retrieve the network with the name "private" and that belongs to the AZ1 availability zone.
  
  GET /v2.0/networks?name=private?availability_zone=A1

**1.1.5.3 Column Selection**
The attributes that are retrieved from the resource information can be restricted. This option can only be used for the List and Show APIs.

Execution example:

- List only the id attribute of networks
  
  ```
  GET /v2.0/networks?fields=id
  ```

- To retrieve multiple attributes (id and name)
  
  ```
  GET /v2.0/networks?fields=id&fields=name
  ```
1.2 Network

1.2.1 API List

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GET /v2.0/networks</td>
<td>Lists networks to which the project has access</td>
</tr>
<tr>
<td></td>
<td>List networks</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>POST /v2.0/networks</td>
<td>Creates a network</td>
</tr>
<tr>
<td></td>
<td>Create network</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>GET /v2.0/networks/{network_id}</td>
<td>Shows details of the specified network</td>
</tr>
<tr>
<td></td>
<td>Show network</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>PUT /v2.0/networks/{network_id}</td>
<td>Updates the specified network</td>
</tr>
<tr>
<td></td>
<td>Update network</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>DELETE /v2.0/networks/{network_id}</td>
<td>Deletes the specified network and its associated resources</td>
</tr>
<tr>
<td></td>
<td>Delete network</td>
<td></td>
</tr>
</tbody>
</table>

1.2.2 API details

1.2.2.1 List networks

Lists networks to which the specified project has access.

**URI**
/v2.0/networks

**HTTP method**
GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
    "networks": [
        {
            "status": "ACTIVE",
            "subnets": [
                "54d6f61d-db07-451c-9ab3-b9609b6b6f0b"
            ]
        }
    ]
}
```
Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the network, which is up (true) or down (false).</td>
</tr>
<tr>
<td>id</td>
<td>The network ID.</td>
</tr>
<tr>
<td>name</td>
<td>The network name.</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether this network is shared across all projects.</td>
</tr>
<tr>
<td>status</td>
<td>The network status.</td>
</tr>
<tr>
<td>subnets</td>
<td>The associated subnets.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID.</td>
</tr>
<tr>
<td>router:external</td>
<td>Specifies whether the network is an external network or not.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
<tr>
<td>mtu</td>
<td>The MTU of a network resource. This value is 0.</td>
</tr>
</tbody>
</table>

1.2.2.2 Create network

Creates a network.

**URI**

/v2.0/networks

**HTTP method**

POST
### Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the network, which is up (true) or down (false).</td>
<td>xsd:bool</td>
<td>Optional</td>
</tr>
<tr>
<td>name</td>
<td>The network name. A request body is optional: If you include it, it can specify this optional attribute.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name. If you do not specify this, the resource will be created in the default Availability Zone.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

### Example request

```json
{
  "network": {
    "name": "sample_network",
    "admin_state_up": true,
    "availability_zone": "AZ1"
  }
}
```

### Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

### Response body (normal status)

```json
{
  "network": {
    "status": "ACTIVE",
    "subnets": [],
    "name": "net1",
    "admin_state_up": true,
    "tenant_id": "9bacb3c5d39d41a79512987f338cf177",
    "mtu": 0,
    "shared": false,
    "id": "4e8e5957-649f-477b-9e5b-f1f75b21c03c",
    "availability_zone": "AZ1"
  }
}
```

### Description of response body (normal status)
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the network, which is up (true) or down (false).</td>
</tr>
<tr>
<td>id</td>
<td>The network ID.</td>
</tr>
<tr>
<td>name</td>
<td>The network name.</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether this network is shared across all projects.</td>
</tr>
<tr>
<td>status</td>
<td>The network status.</td>
</tr>
<tr>
<td>subnets</td>
<td>The associated subnets.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
</tbody>
</table>

### 1.2.2.3 Show network

Shows information for a specified network.

**URI**

/v2.0/networks/{network_id}

Description of the URI:

{network_id} UUID The UUID for the network of interest to you.

**HTTP method**

GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
    "network": {
        "status": "ACTIVE",
        "subnets": [
            "54d6f61d-db07-451c-9ab3-b9609b6b6f0b"
        ],
        "name": "private-network",
        "admin_state_up": true,
        "tenant_id": "4fd44f30292945e481c7b8a0c8908869",
        "router:external": true,
        "mtu": 0,
        "shared": true,
        "id": "d32019d3-4c6e-4319-9c1d-6722fc136a22",
        "availability_zone": "AZ1"
    }
}
```
### Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the network, which is up (true) or down (false).</td>
</tr>
<tr>
<td>id</td>
<td>The network ID.</td>
</tr>
<tr>
<td>name</td>
<td>The network name.</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether this network is shared across all projects.</td>
</tr>
<tr>
<td>status</td>
<td>The network status.</td>
</tr>
<tr>
<td>subnets</td>
<td>The associated subnets.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
<tr>
<td>router:external</td>
<td>Specifies whether the network is an external network or not.</td>
</tr>
<tr>
<td>mtu</td>
<td>The MTU of a network resource. This value is 0.</td>
</tr>
</tbody>
</table>

### 1.2.2.4 Update network

Updates a specified network.

**URI**

```
/v2.0/networks/{network_id}
```

Description of the URI:

{network_id} UUID The UUID for the network of interest to you.

**HTTP method**

PUT

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the network, which is up (true) or down (false).</td>
<td>xsd:bool</td>
<td>Optional</td>
</tr>
<tr>
<td>name</td>
<td>The network name.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```
{
    "network": {
        "name": "sample_network_5_updated"
    }
}
```

**Response status**
### Status code Description

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
    "network": {
        "status": "ACTIVE",
        "subnets": [],
        "name": "sample_network_5_updated",
        "admin_state_up": true,
        "tenant_id": "4fd44f30292945e481c7b8a0c8908869",
        "router:external": false,
        "mtu": 0,
        "shared": false,
        "id": "1f370095-98f6-4079-be64-6d3d4a6adcc6",
        "availability_zone": "AZ1"
    }
}
```

**Description of response body (normal status)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>The network status.</td>
</tr>
<tr>
<td>subnets</td>
<td>The associated subnets.</td>
</tr>
<tr>
<td>name</td>
<td>The network name.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the network, which is up (true) or down (false).</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID.</td>
</tr>
<tr>
<td>router:external</td>
<td>Specifies whether the network is an external network or not.</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether this network is shared across all projects. By default, only administrative users can change this value.</td>
</tr>
<tr>
<td>id</td>
<td>The network ID.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
<tr>
<td>mtu</td>
<td>The MTU of a network resource. This value is 0.</td>
</tr>
</tbody>
</table>

**1.2.2.5 Delete network**

Deletes the specified network and its associated resources.
URI
/v2.0/networks/{network_id}
Description of the URI:
{network_id} UUID The UUID for the network of interest to you.

HTTP method
DELETE

Request parameter

CAUTION
Before deleting a network that is specified for subnets that use the Windows virtual server for SAP service or physical server for SAP HANA service, it is necessary to delete the network resources using the subnet.

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
1.3 Subnet

1.3.1 API List

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GET /v2.0/subnets</td>
<td>Lists subnets to which the specified project has access.</td>
</tr>
<tr>
<td>2</td>
<td>POST /v2.0/subnets</td>
<td>Creates a subnet on the specified network.</td>
</tr>
<tr>
<td>3</td>
<td>GET /v2.0/subnets/{subnet_id}</td>
<td>Shows information on the specified subnet.</td>
</tr>
<tr>
<td>4</td>
<td>PUT /v2.0/subnets/{subnet_id}</td>
<td>Updates the specified subnet.</td>
</tr>
<tr>
<td>5</td>
<td>DELETE /v2.0/subnets/{subnet_id}</td>
<td>Deletes the specified subnet.</td>
</tr>
</tbody>
</table>

1.3.2 API details

1.3.2.1 List subnets

Lists subnets to which the specified project has access.

**URI**

/v2.0/subnets

**HTTP method**

GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
  "subnets": [
    {
      "name": "private-subnet",
      "enable_dhcp": true,
      "network_id": "db193ab3-96e3-4cb3-8fc5-05f4296d0324"
    }
  ]
}
```
{ "tenant_id": "26a7980765d0414dbc1fc1f88c0db7e6e",  "dns_nameservers": [],  "gateway_ip": "10.0.0.1",  "ipv6_ra_mode": null,  "allocation_pools": [  {   "start": "10.0.0.2",   "end": "10.0.0.254"  }  ],  "host_routes": [],  "ip_version": 4,  "ipv6_address_mode": null,  "cidr": "10.0.0.0/24",  "id": "08eae331-0402-425a-923c-34f7cfe39c1b",  "subnetpool_id": null,  "availability_zone": "AZ1" },  { "name": "my_subnet",  "enable_dhcp": true,  "network_id": "d32019d3-bc6e-4319-9c1d-6722fc136a22",  "tenant_id": "4fd44f30292945e481c7b8a0c8908869",  "dns_nameservers": [],  "gateway_ip": "192.0.0.1",  "ipv6_ra_mode": null,  "allocation_pools": [  {   "start": "192.0.0.2",   "end": "192.255.255.254"  }  ],  "host_routes": [],  "ip_version": 4,  "ipv6_address_mode": null,  "cidr": "192.0.0.0/8",  "id": "54d6f61d-db07-451c-9ab3-b9609b6b6f0b",  "subnetpool_id": null,  "availability_zone": "AZ1"  }

### Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The subnet name.</td>
</tr>
<tr>
<td>enable_dhcp</td>
<td>Set to &quot;true&quot; if DHCP is enabled, or &quot;false&quot; otherwise.</td>
</tr>
<tr>
<td>network_id</td>
<td>The ID of the attached network.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The ID of the project who owns the network.</td>
</tr>
<tr>
<td>dns_nameservers</td>
<td>A list of DNS name servers for the subnet.</td>
</tr>
<tr>
<td></td>
<td>For example ['8.8.8.7', '8.8.8.8'].</td>
</tr>
<tr>
<td></td>
<td>The specified IP addresses are displayed in sorted order in ascending order.</td>
</tr>
<tr>
<td></td>
<td>The lowest IP address will be the primary DNS address.</td>
</tr>
<tr>
<td>allocation_pools</td>
<td>The start and end addresses for the allocation pools.</td>
</tr>
</tbody>
</table>
### host_routes
A list of host route dictionaries for the subnet. For example:

```
"host_routes": [
    {
        "destination": "0.0.0.0/0",
        "nexthop": "172.16.1.254"
    },
    {
        "destination": "192.168.0.0/24",
        "nexthop": "192.168.1.1"
    }
]
```

### ip_version
The IP version, which is 4.

### gateway_ip
The gateway IP address.

### cidr
The CIDR.

### id
The ID of the subnet.

### availability_zone
The Availability Zone name.

### ipv6_ra_mode
This attribute is used to specify if the Networking service should transmit ICMPv6 packets, for a subnet. This value is null.

### ipv6_address_mode
This attribute is used to control how addressing is handled by OpenStack. There are a number of different ways that guest instances can obtain an IPv6 address, and this attribute exposes these choices to users of the Networking API. This value is null.

### subnetpool_id
The UUID of the subnet pool. This value is null.

## 1.3.2.2 Create subnet

Creates a subnet on the specified network.

### URI

```
/v2.0/subnets
```

### HTTP method

POST

### Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The subnet name.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>network_id</td>
<td>The ID of the attached network.</td>
<td>csapi:uuid</td>
<td>required</td>
</tr>
<tr>
<td>allocation_pools</td>
<td>The start and end addresses for the allocation pools.</td>
<td>xsd:dict</td>
<td>Optional</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
<td>-----------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>dns_nameservers</td>
<td>A list of DNS name servers for the subnet. For example ['8.8.8.7', '8.8.8.8']. The specified IP addresses are displayed in sorted order in ascending order. The lowest IP address will be the primary DNS address.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>host_routes</td>
<td>A list of host route dictionaries for the subnet. For example:</td>
<td>xsd:list</td>
<td>Optional</td>
</tr>
<tr>
<td></td>
<td>&quot;host_routes&quot;: [</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>{</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;destination&quot;: &quot;0.0.0.0/0&quot;,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;nexthop&quot;: &quot;172.16.1.254&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>},</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>{</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;destination&quot;: &quot;192.168.0.0/24&quot;,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;nexthop&quot;: &quot;192.168.0.1&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gateway_ip</td>
<td>The gateway IP address.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>ip_version</td>
<td>The IP version, which can be 4 or 6.</td>
<td>xsd:string</td>
<td>Required</td>
</tr>
<tr>
<td>cidr</td>
<td>The CIDR.</td>
<td>xsd:bool</td>
<td>required</td>
</tr>
<tr>
<td>enable_dhcp</td>
<td>Set to &quot;true&quot; if DHCP is enabled, or &quot;false&quot; otherwise.</td>
<td>xsd:boolean</td>
<td>Optional</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name. If you do not specify this, the resource will be created in the default Availability Zone.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**CAUTION**
- Do not specify an ISP shared address (100.64.0.0/10 or a subnet address of a division of that subnet).
- Only one subnet can be related to a single network.
When creating a subnet for use with the Windows virtual server for SAP service or the physical server for SAP HANA service, please take note of the following points.

- Perform creation with the following string attached to the head of the name parameter.
  
  For the Windows virtual server for SAP service: `fcx_subnet-w:

  For the physical server for SAP HANA service: `fcx_subnet-b:

- The range of the mask value that can be specified for `cidr` is 16 - 29.
- IP addresses other than those specified for `allocation_pools` and `gateway_ip` will be allocated to the servers (VMs) created in the Windows virtual server for SAP service or the physical server for SAP HANA service.
  Specify `allocation_pools` excluding the range of IP addresses that will be used for the Windows virtual server for SAP service or the physical server for SAP HANA service.
- Specify 4 for `ip_version`.
- The information specified for `host_routes`, `enable_dhcp`, and `dns_nameservers` is not set for the servers (VMs) created in the Windows virtual server for SAP service or the physical server for SAP HANA service.

When creating a subnet that uses an SSL-VPN connection, take note of the following points.

- The range of the mask value that can be specified for `cidr` is 16 - 29.
- Specify the IP address of the router specified for the VPN Service for `gateway_ip`.

Example request

```
{
  "subnet": {
    "network_id": "d32019d3-bc6e-4319-9c1d-6722fc136a22",
    "ip_version": 4,
    "cidr": "192.168.199.0/24",
    "availability_zone": "AZ1"
  }
}
```

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
Response body (normal status)

```json
{
    "subnet": {
        "name": "",
        "enable_dhcp": true,
        "network_id": "d32019d3-bc6e-4319-9c1d-6722fc136a22",
        "tenant_id": "4fd44f302945e81c7b8a9e8908869",
        "dns_nameservers": [],
        "gateway_ip": "192.168.199.1",
        "ipv6_ra_mode": null,
        "allocation_pools": [
            {
                "start": "192.168.199.2",
                "end": "192.168.199.254"
            }
        ],
        "host_routes": [],
        "ip_version": 4,
        "ipv6_address_mode": null,
        "cidr": "192.168.199.0/24",
        "id": "3b80198d-4f7b-4f77-9ef5-774d54e17126",
        "subnetpool_id": null,
        "availability_zone": "AZ1"
    }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The subnet name.</td>
</tr>
<tr>
<td>network_id</td>
<td>The ID of the attached network.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The ID of the project who owns the network.</td>
</tr>
<tr>
<td>dns_nameservers</td>
<td>A list of DNS name servers for the subnet. For example [&quot;8.8.8.7&quot;, &quot;8.8.8.8&quot;].</td>
</tr>
<tr>
<td>allocation_pools</td>
<td>The start and end addresses for the allocation pools.</td>
</tr>
</tbody>
</table>
| host_routes         | A list of host route dictionaries for the subnet. For example:

```json
"host_routes": [
    {
        "destination": "0.0.0.0/0",
        "nexthop": "172.16.1.254"
    },
    {
        "destination": "192.168.0.0/24",
        "nexthop": "192.168.0.1"
    }
]
```

gateway_ip          | The gateway IP address. |

ip_version           | The IP version, which is 4. |

cidr                 | The CIDR. |

id                   | The ID of the subnet. |

enable_dhcp          | Set to "true" if DHCP is enabled, or "false" otherwise. |

availability_zone    | The Availability Zone name. |
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipv6_ra_mode</td>
<td>This attribute is used to specify if the Networking service should transmit ICMPv6 packets, for a subnet. Value is 0.</td>
</tr>
<tr>
<td>ipv6_address_mode</td>
<td>This attribute is used to control how addressing is handled by OpenStack. There are a number of different ways that guest instances can obtain an IPv6 address, and this attribute exposes these choices to users of the Networking API. Value is 0.</td>
</tr>
<tr>
<td>subnetpool_id</td>
<td>The UUID of the subnet pool.</td>
</tr>
</tbody>
</table>

1.3.2.3 Show subnet  
Shows information for a specified subnet.

URI

/v2.0/subnets/{subnet_id}

Description of the URI:
{subnet_id} UUID The UUID for the subnet of interest to you.

HTTP method

GET

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```
{
  "subnet": {
    "name": "my_subnet",
    "enable_dhcp": true,
    "network_id": "d32019d3-bc6e-4319-9c1d-6722fc136a22",
    "tenant_id": "4fd44f30292945e481c7b8a0c8908869",
    "dns_nameservers": [],
    "gateway_ip": "192.0.0.1",
    "ipv6_ra_mode": null,
    "allocation_pools": [
      {
        "start": "192.0.0.2",
        "end": "192.255.255.254"
      }
    ],
    "host_routes": [],
    "ip_version": 4,
    "ipv6_address_mode": null,
    "cidr": "192.0.0.0/8",
    "id": "54d6f61d-db07-451c-9ab3-b9609b66f0b"
  }
}
```
Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The subnet name.</td>
</tr>
<tr>
<td>network_id</td>
<td>The ID of the attached network.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The ID of the project who owns the network.</td>
</tr>
</tbody>
</table>
| dns_nameservers   | A list of DNS name servers for the subnet. For example 
|                   | "["8.8.8.7", "8.8.8.8"]". The specified IP addresses are displayed in sorted order in ascending order. The lowest IP address will be the primary DNS address. |
| allocation_pools  | The start and end addresses for the allocation pools. |
| host_routes       | A list of host route dictionaries for the subnet. For example: |
|                   | "host_routes": [ |
|                   |   |
|                   |   "destination": "0.0.0.0/0", |
|                   |   "nexthop": "172.16.1.254" |
|                   |   |
|                   |   "destination": "192.168.0.0/24", |
|                   |   "nexthop": "192.168.0.1" |
| gateway_ip        | The gateway IP address. |
| ip_version        | The IP version, which can be 4 or 6. |
| cidr              | The CIDR. |
| id                | The ID of the subnet. |
| enable_dhcp       | Set to "true" if DHCP is enabled, or "false" otherwise. |
| availability_zone | The Availability Zone name. |
| ipv6_ra_mode      | This attribute is used to specify if the Networking service should transmit ICMPv6 packets, for a subnet. This value is null. |
| ipv6_address_mode | This attribute is used to control how addressing is handled by OpenStack. There are a number of different ways that guest instances can obtain an IPv6 address, and this attribute exposes these choices to users of the Networking API. This value is null. |
| subnetpool_id     | The UUID of the subnet pool. This value is null. |

1.3.2.4 Update subnet
Updates the specified subnet.

**URI**

`/v2.0/subnets/{subnet_id}`

Description of the URI:

{subnet_id}: The UUID of the subnet.

**HTTP method**

PUT

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The subnet name.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>gateway_ip</td>
<td>The gateway IP address.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>enable_dhcp</td>
<td>Set to &quot;true&quot; if DHCP is enabled, or &quot;false&quot; otherwise.</td>
<td>xsd:boolean</td>
<td>Optional</td>
</tr>
<tr>
<td>dns_nameservers</td>
<td>A list of DNS name servers for the subnet. For example [&quot;8.8.8.7&quot;, &quot;8.8.8.8&quot;].</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>host_routes</td>
<td>A list of host route dictionaries for the subnet. For example:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;host_routes&quot;: [</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;destination&quot;:&quot;0.0.0.0/0&quot;,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;nexthop&quot;:&quot;172.16.1.254&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>],</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;destination&quot;:&quot;192.168.0.0/24&quot;,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;nexthop&quot;:&quot;192.168.0.1&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CAUTION**

For a subnet for use with the Window virtual server for SAP service or the physical server for SAP HANA service, please take note of the following points.

- It is not possible to change the string "fcx_subnet-w:" or "fcx_subnet-b:" at the start of the name parameter.
- gateway_ip cannot be changed.
- The information specified for host_routes, enable_dhcp, and dns_nameservers is not set for the servers (VMs) created in the Windows virtual server for SAP service or the physical server for SAP HANA service.

**CAUTION**

When updating a subnet that uses an SSL-VPN connection, take note of the following points.

- Do not delete gateway_ip (change it to null).
When updating host_routes, take note of the following points.

- After update, to reflect the changes on any running VMs it is necessary to restart those VMs.
- If the subnet is specified when creating or adding a load balancer, after update it is necessary to re-create the relevant load balancer to reflect the changes.

Example request

```
{
  "subnet": {
    "name": "my_subnet"
  }
}
```

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```
{
  "subnet": {
    "name": "private-subnet",
    "enable_dhcp": true,
    "network_id": "db193ab3-96e3-4cb3-8fc5-05f4296d0324",
    "tenant_id": "26a78075d0d414f0f1f898d07e6e",
    "dns_nameservers": [],
    "gateway_ip": "10.0.0.1",
    "ipv6_ra_mode": null,
    "allocation_pools": [
      {
        "start": "10.0.0.2",
        "end": "10.0.0.254"
      }
    ],
    "host_routes": [],
    "ip_version": 4,
    "ipv6_address_mode": null,
    "cidr": "10.0.0.0/24",
    "id": "08eae331-0402-425a-923c-34f7cfe39c1b",
    "subnetpool_id": null,
    "availability_zone": "AZ1"
  }
}
```

Description of response body (normal status)
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The subnet name.</td>
</tr>
<tr>
<td>enable_dhcp</td>
<td>Set to &quot;true&quot; if DHCP is enabled, or &quot;false&quot; otherwise.</td>
</tr>
<tr>
<td>network_id</td>
<td>The ID of the attached network.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The ID of the project who owns the network.</td>
</tr>
<tr>
<td>dns_nameservers</td>
<td>A list of DNS name servers for the subnet. For example ['8.8.8.7', '8.8.8.8'].</td>
</tr>
<tr>
<td>allocation_pools</td>
<td>The start and end addresses for the allocation pools.</td>
</tr>
<tr>
<td>host_routes</td>
<td>A list of host route dictionaries for the subnet. For example:</td>
</tr>
<tr>
<td></td>
<td>```</td>
</tr>
<tr>
<td></td>
<td>&quot;host_routes&quot;: [</td>
</tr>
<tr>
<td></td>
<td>{</td>
</tr>
<tr>
<td></td>
<td>&quot;destination&quot;:&quot;0.0.0.0/0&quot;,</td>
</tr>
<tr>
<td></td>
<td>&quot;nexthop&quot;:&quot;172.16.1.254&quot;</td>
</tr>
<tr>
<td></td>
<td>},</td>
</tr>
<tr>
<td></td>
<td>{</td>
</tr>
<tr>
<td></td>
<td>&quot;destination&quot;:&quot;192.168.0.0/24&quot;,</td>
</tr>
<tr>
<td></td>
<td>&quot;nexthop&quot;:&quot;192.168.0.1&quot;</td>
</tr>
<tr>
<td></td>
<td>]</td>
</tr>
<tr>
<td>ip_version</td>
<td>The IP version, which can be 4 or 6.</td>
</tr>
<tr>
<td>gateway_ip</td>
<td>The gateway IP address.</td>
</tr>
<tr>
<td>cidr</td>
<td>The CIDR.</td>
</tr>
<tr>
<td>id</td>
<td>The ID of the subnet.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
<tr>
<td>ipv6_ra_mode</td>
<td>This attribute is used to specify if the Networking service should transmit ICMPv6 packets, for a subnet. This value is null.</td>
</tr>
<tr>
<td>ipv6_address_mode</td>
<td>This attribute is used to control how addressing is handled by OpenStack. There are a number of different ways that guest instances can obtain an IPv6 address, and this attribute exposes these choices to users of the Networking API. This value is null.</td>
</tr>
<tr>
<td>subnetpool_id</td>
<td>The UUID of the subnet pool. This value is null.</td>
</tr>
</tbody>
</table>

### 1.3.2.5 Delete subnet

Deletes the specified subnet.

**URI**

/v2.0/subnets/{subnet_id}

Description of the URI:

{subnet_id} UUID The UUID for the subnet of interest to you.
HTTP method

DELETE

Request parameter

⚠️ CAUTION When a subnet is deleted, DHCP can no longer be used in the network where it was created. If using DHCP, the subnet alone cannot be deleted; the network must be deleted as well.

⚠️ CAUTION Before deleting a subnet that uses the Windows virtual server for SAP service or physical server for SAP HANA service, it is necessary to delete the network resources using it.

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
1.4 Security groups

1.4.1 API List

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>POST /v2.0/security-groups</td>
<td>Creates a security group</td>
</tr>
<tr>
<td></td>
<td>Create security group</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>GET /v2.0/security-groups/{security_group_id}</td>
<td>Shows the specified security group</td>
</tr>
<tr>
<td></td>
<td>Show security group</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>PUT /v2.0/security-groups/{security_group_id}</td>
<td>Updates information about the specified security group</td>
</tr>
<tr>
<td></td>
<td>Update security group</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>DELETE /v2.0/security-groups/{security_group_id}</td>
<td>Deletes the specified security group</td>
</tr>
<tr>
<td></td>
<td>Delete security group</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>POST /v2.0/security-group-rules</td>
<td>Creates security group rules</td>
</tr>
<tr>
<td></td>
<td>Create security group rule</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>DELETE /v2.0/security-group-rules/{rules-security-groups-id}</td>
<td>Deletes the specified rule from a security group</td>
</tr>
<tr>
<td></td>
<td>Delete security group rule</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>GET /v2.0/security-groups</td>
<td>Lists security groups</td>
</tr>
<tr>
<td></td>
<td>List security groups</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>GET /v2.0/security-group-rules</td>
<td>Lists security group rules</td>
</tr>
<tr>
<td></td>
<td>List security group rules</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>GET /v2.0/security-group-rules/{rules-security-groups-id}</td>
<td>Shows details about the specified security group rule</td>
</tr>
<tr>
<td></td>
<td>Show security group rule</td>
<td></td>
</tr>
</tbody>
</table>

- If the security group is omitted when creating the port (Port) of an instance, the default security group of the project will be used. The default security group rules of the initial state are as follows.

<table>
<thead>
<tr>
<th>Direction</th>
<th>IP version</th>
<th>Communication destination</th>
<th>Protocol number</th>
<th>Protocol-specific information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egress</td>
<td>IPv6</td>
<td>All</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>Egress</td>
<td>IPv4</td>
<td>All</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>Ingress</td>
<td>IPv6</td>
<td>Default security group</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>Ingress</td>
<td>IPv4</td>
<td>Default security group</td>
<td>All</td>
<td>All</td>
</tr>
</tbody>
</table>

- The rules of the initial state during security group creation are as follows.
<table>
<thead>
<tr>
<th>Direction</th>
<th>IP version</th>
<th>Communication destination</th>
<th>Protocol number</th>
<th>Protocol-specific information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egress</td>
<td>IPv6</td>
<td>All</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>Egress</td>
<td>IPv4</td>
<td>All</td>
<td>All</td>
<td>All</td>
</tr>
</tbody>
</table>

1.4.2 API details

1.4.2.1 Create security group

Creates an OpenStack Networking security group.

**URI**

/v2.0/security-groups

**HTTP method**

POST

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>A symbolic name for the security group. Not required to be unique.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>Describes the security group.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```json
{
    "security_group": {
        "name": "new-webservers",
        "description": "security group for webservers"
    }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
}
```
"security_group": {
    "description": "security group for webservers",
    "id": "2076db17-a522-4506-91de-c6dd8e837028",
    "name": "new-webservers",
    "security_group_rules": [
        {
            "direction": "egress",
            "ethertype": "IPv4",
            "id": "38ce2d8e-e8f1-48bd-83c2-d33cb9f50c3d",
            "port_range_max": null,
            "port_range_min": null,
            "protocol": null,
            "remote_group_id": null,
            "remote_ip_prefix": null,
            "security_group_id": "2076db17-a522-4506-91de-c6dd8e837028",
            "tenant_id": "e4f50856753b4dc6afe5fa6b9b6c550"
        },
        {
            "direction": "egress",
            "ethertype": "IPv6",
            "id": "565b9502-12de-4ffd-91e9-68885cffe6ae1",
            "port_range_max": null,
            "port_range_min": null,
            "protocol": null,
            "remote_group_id": null,
            "remote_ip_prefix": null,
            "security_group_id": "2076db17-a522-4506-91de-c6dd8e837028",
            "tenant_id": "e4f50856753b4dc6afe5fa6b9b6c550"
        }
    ],
    "tenant_id": "e4f50856753b4dc6afe5fa6b9b6c550"
}

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>The security group description.</td>
</tr>
<tr>
<td>id</td>
<td>The UUID for the security group.</td>
</tr>
<tr>
<td>name</td>
<td>The security group name.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID.</td>
</tr>
<tr>
<td>security_group_rules</td>
<td>The security group rule objects to associate with this security group.</td>
</tr>
</tbody>
</table>

1.4.2.2 Show security group

Shows information for a specified security group.

URI

/v2.0/security-groups/{security_group_id}

Description of the URI:

{security_group_id} UUID The UUID of the security group IP.

HTTP method

GET
Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>security_group</td>
<td>Security group object.</td>
</tr>
<tr>
<td>description</td>
<td>The security group description.</td>
</tr>
<tr>
<td>id</td>
<td>The UUID for the security group.</td>
</tr>
<tr>
<td>name</td>
<td>The security group name.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID.</td>
</tr>
<tr>
<td>security_group_rules</td>
<td>The security group rule objects to associate with this security group.</td>
</tr>
</tbody>
</table>

1.4.2.3 Update security group

Updates an OpenStack Networking security group.

URI

/v2.0/security-groups/{security_group_id}

HTTP method

PUT

Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The security group name.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>The security group description.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

Example request

```
{
    "security_group": {
        "name": "new-webservers",
        "description": "security group for webservers"
    }
}
```

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Status code</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```
{
    "security_group": {
        "description": "security group for webservers",
        "id": "2076db17-a522-4506-91de-c6dd8e837028",
        "name": "new-webservers",
        "security_group_rules": [
            {
                "direction": "egress",
                "ethertype": "IPv4",
                "id": "38ce2d8e-e8f1-48bd-83c2-d33cb9f50c3d",
                "port_range_max": null,
                "port_range_min": null,
                "protocol": null,
                "remote_group_id": null,
                "remote_ip_prefix": null,
                "security_group_id": "2076db17-a522-4506-91de-c6dd8e837028",
                "tenant_id": "e4f50856753b4dc6afee5fa6b9b6c550"
            },
            {
                "direction": "egress",
                "ethertype": "IPv6",
                "id": "565b9502-12de-4fffd-91e9-68885c66ae1",
                "port_range_max": null,
                "port_range_min": null,
                "protocol": null,
                "remote_group_id": null,
                "remote_ip_prefix": null,
                "security_group_id": "2076db17-a522-4506-91de-c6dd8e837028",
                "tenant_id": "e4f50856753b4dc6afee5fa6b9b6c550"
            }
        ],
        "tenant_id": "e4f50856753b4dc6afee5fa6b9b6c550"
    }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>The security group description.</td>
</tr>
<tr>
<td>id</td>
<td>The UUID for the security group.</td>
</tr>
<tr>
<td>name</td>
<td>The security group name.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID.</td>
</tr>
<tr>
<td>security_group_rules</td>
<td>The security group rule objects to associate with this security group.</td>
</tr>
</tbody>
</table>

1.4.2.4 Delete security group

Deletes an OpenStack Networking security group.
URI
/v2.0/security-groups/{security_group_id}
Description of the URI:
{security_group_id} UUID The UUID of the security group IP.

HTTP method
DELETE

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>204</td>
<td>No Content</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

1.4.2.5 Create security group rule

Creates an OpenStack Networking security group rule.

URI
/v2.0/security-group-rules

HTTP method
POST

Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>direction</td>
<td>Ingress or egress: The direction in which the security group rule is applied. For a compute instance, an ingress security group rule is applied to incoming (ingress) traffic for that instance. An egress rule is applied to traffic leaving the instance.</td>
<td>xsd:string</td>
<td>Required</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>port_range_min</td>
<td>The minimum port number in the range that is matched by the security group rule. When the protocol is TCP or UDP, this value must be less than or equal to the value of the port_range_max attribute. If this value is not specified, the security group rule matches all numbers of port. If port_range_min is 0, all port numbers are allowed regardless of port_range_max. When the protocol is ICMP, this value must be an ICMP type. If this value is not specified, the security group rule matches all ICMP types.</td>
<td>xsd:int</td>
<td>Optional</td>
</tr>
<tr>
<td>ethertype</td>
<td>Must be IPv4, and addresses represented in CIDR must match the ingress or egress rules. If this values is not specified, IPv4 is set.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>port_range_max</td>
<td>The maximum port number in the range that is matched by the security group rule. When the protocol is TCP or UDP, the port_range_min attribute constrains the port_range_max attribute. When the protocol is ICMP, this value must be an ICMP code. If this value is not specified, the security group rule matches all ICMP codes.</td>
<td>xsd:int</td>
<td>Optional</td>
</tr>
<tr>
<td>protocol</td>
<td>The protocol that is matched by the security group rule. Valid values are null, tcp, udp, icmp, and digits between 0-and 255</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>remote_group_id</td>
<td>The remote group ID to be associated with this security group rule. You can specify either remote_group_id or remote_ip_prefix in the request body.</td>
<td>csapi:uuid</td>
<td>Optional</td>
</tr>
<tr>
<td>security_group_id</td>
<td>The security group ID to associate with this security group rule.</td>
<td>csapi:uuid</td>
<td>Required</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>remote_ip_prefix</td>
<td>The remote IP prefix to be associated with this security group rule. You can specify either remote_group_id or remote_ip_prefix in the request body. This attribute matches the specified IP prefix as the source or destination IP address of the IP packet. If direction is ingress matches source, otherwise matches destination.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```json
{
   "security_group_rule": {
      "direction": "ingress",
      "port_range_min": "80",
      "ethertype": "IPv4",
      "port_range_max": "80",
      "protocol": "tcp",
      "remote_group_id": "85cc3048-abc3-43cc-89b3-37734126ac5",
      "security_group_id": "a7734e61-b545-452d-a3cd-0189cbd9747a"
   }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>buildInProgress (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
   "security_group_rule": {
      "direction": "ingress",
      "ethertype": "IPv4",
      "id": "2bc0accf-312e-429a-956e-e4407625eb62",
      "port_range_max": 80,
      "port_range_min": 80,
      "protocol": "tcp",
      "remote_group_id": "85cc3048-abc3-43cc-89b3-37734126ac5",
      "remote_ip_prefix": null,
      "security_group_id": "a7734e61-b545-452d-a3cd-0189cbd9747a",
      "tenant_id": "e4f50856753b4dc6aflee5fa6b9b6c550"
   }
}
```
### Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>The security group rule ID.</td>
</tr>
<tr>
<td>direction</td>
<td>Ingress or egress: The direction in which the security group rule is applied. For a compute instance, an ingress security group rule is applied to incoming (ingress) traffic for that instance. An egress rule is applied to traffic leaving the instance.</td>
</tr>
<tr>
<td>port_range_min</td>
<td>The minimum port number in the range that is matched by the security group rule. When the protocol is TCP or UDP, if this value is not specified, the security group rule matches all numbers of port. If port_range_min is 0, all port numbers are allowed regardless of port_range_max. When the protocol is ICMP, this value must be an ICMP type. If this value is null, the security group rule matches all ICMP types.</td>
</tr>
<tr>
<td>ethertype</td>
<td>Must be IPv4 or IPv6, and addresses represented in CIDR must match the ingress or egress rules.</td>
</tr>
<tr>
<td>port_range_max</td>
<td>The maximum port number in the range that is matched by the security group rule. When the protocol is ICMP, if this value is not specified, the security group rule matches all ICMP codes.</td>
</tr>
<tr>
<td>protocol</td>
<td>The protocol that is matched by the security group rule. Valid values are null, tcp, udp, icmp, and digits between 0-and 255</td>
</tr>
<tr>
<td>remote_group_id</td>
<td>The remote group ID to be associated with this security group rule.</td>
</tr>
<tr>
<td>security_group_id</td>
<td>The security group ID to associate with this security group rule.</td>
</tr>
<tr>
<td>remote_ip_prefix</td>
<td>The remote IP prefix to be associated with this security group rule. This attribute matches the specified IP prefix as the source or destination IP address of the IP packet. If direction is ingress matches source, otherwise matches destination.</td>
</tr>
</tbody>
</table>

#### 1.4.2.6 Delete security group rule

Deletes a specified rule from a OpenStack Networking security group.

**URI**

/v2.0/security-group-rules/{rules-security-groups-id}

Description of the URI:

{rules-security-groups-id} UUID The UUID of the security group rule IP.

**HTTP method**

DELETE

**Response status**
1.4.2.7 List security groups

Lists all OpenStack Networking security groups to which the specified project has access.

URI
/n2.0/security-groups

HTTP method
GET

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

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

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>security_group</td>
<td>Security group object.</td>
</tr>
<tr>
<td>description</td>
<td>The security group description.</td>
</tr>
<tr>
<td>id</td>
<td>The UUID for the security group.</td>
</tr>
<tr>
<td>name</td>
<td>The security group name.</td>
</tr>
</tbody>
</table>

1.4.2.8 List security group rules

Lists a summary of all OpenStack Networking security group rules that the specified project can access.

**URI**

/v2.0/security-group-rules

**HTTP method**

GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
Response body (normal status)

```json
{
  "security_group_rules": [
    {
      "direction": "egress",
      "ethertype": "IPv6",
      "id": "3c0e45ff-adaf-4124-b083-bf390e5482ff",
      "port_range_max": null,
      "port_range_min": null,
      "protocol": null,
      "remote_group_id": null,
      "remote_ip_prefix": null,
      "security_group_id": "85cc3048-abc3-43cc-89b3-37734126ac5",
      "tenant_id": "e4f50856753b4dc6afe5fa6b9b6c550"
    },
    {
      "direction": "egress",
      "ethertype": "IPv4",
      "id": "93aa42e5-80db-4581-9381-39608bd0e448",
      "port_range_max": null,
      "port_range_min": null,
      "protocol": null,
      "remote_group_id": null,
      "remote_ip_prefix": null,
      "security_group_id": "85cc3048-abc3-43cc-89b3-37734126ac5",
      "tenant_id": "e4f50856753b4dc6afe5fa6b9b6c550"
    },
    {
      "direction": "ingress",
      "ethertype": "IPv6",
      "id": "c0b09f00-1d49-4e64-a0a7-8a186d928138",
      "port_range_max": null,
      "port_range_min": null,
      "protocol": null,
      "remote_group_id": "85cc3048-abc3-43cc-89b3-37734126ac5",
      "remote_ip_prefix": null,
      "security_group_id": "85cc3048-abc3-43cc-89b3-37734126ac5",
      "tenant_id": "e4f50856753b4dc6afe5fa6b9b6c550"
    },
    {
      "direction": "ingress",
      "ethertype": "IPv4",
      "id": "f7d45c89-008e-4bab-88ad-d6811724c51c",
      "port_range_max": null,
      "port_range_min": null,
      "protocol": null,
      "remote_group_id": "85cc3048-abc3-43cc-89b3-37734126ac5",
      "remote_ip_prefix": null,
      "security_group_id": "85cc3048-abc3-43cc-89b3-37734126ac5",
      "tenant_id": "e4f50856753b4dc6afe5fa6b9b6c550"
    }
  ]
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>direction</td>
<td>Ingress or egress: The direction in which the security group rule is applied. For a compute instance, an ingress security group rule is applied to incoming (ingress) traffic for that instance. An egress rule is applied to traffic leaving the instance.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ethertype</td>
<td>Must be IPv4 or IPv6, and addresses represented in CIDR must match the ingress or egress rules.</td>
</tr>
<tr>
<td>security_group_id</td>
<td>The security group ID to associate with this security group rule.</td>
</tr>
<tr>
<td>port_range_min</td>
<td>The minimum port number in the range that is matched by the security group rule. When the protocol is TCP or UDP, if this value is not specified, the security group rule matches all numbers of port. If port_range_min is 0, all port numbers are allowed regardless of port_range_max. When the protocol is ICMP, this value must be an ICMP type. If this value is null, the security group rule matches all ICMP types.</td>
</tr>
<tr>
<td>port_range_max</td>
<td>The maximum port number in the range that is matched by the security group rule. When the protocol is ICMP, if this value is not specified, the security group rule matches all ICMP codes.</td>
</tr>
<tr>
<td>protocol</td>
<td>The protocol that is matched by the security group rule. Valid values are null, tcp, udp, icmp, and digits between 0 and 255.</td>
</tr>
<tr>
<td>remote_group_id</td>
<td>The remote group ID to be associated with this security group rule.</td>
</tr>
<tr>
<td>remote_ip_prefix</td>
<td>The remote IP prefix to be associated with this security group rule. This attribute matches the specified IP prefix as the source or destination IP address of the IP packet. If direction is ingress matches source, otherwise matches destination.</td>
</tr>
</tbody>
</table>

### 1.4.2.9 Show security group rule

Shows detailed information for a specified security group rule.

**URI**

```
/v2.0/security-group-rules/{rules-security-groups-id}
```

Description of the URI:

- `{rules-security-groups-id}` UUID The UUID of the security group rule IP.

**HTTP method**

GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**
```json
{
    "security_group_rule": {
        "direction": "egress",
        "ethertype": "IPv6",
        "id": "3c0e45ff-adaf-4124-b083-bf390e5482ff",
        "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"
    }
}
```

### Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>direction</td>
<td>Ingress or egress: The direction in which the security group rule is applied. For a compute instance, an ingress security group rule is applied to incoming (ingress) traffic for that instance. An egress rule is applied to traffic leaving the instance.</td>
</tr>
<tr>
<td>ethertype</td>
<td>Must be IPv4 or IPv6, and addresses represented in CIDR must match the ingress or egress rules.</td>
</tr>
<tr>
<td>id</td>
<td>The security group rule ID.</td>
</tr>
<tr>
<td>port_range_max</td>
<td>The maximum port number in the range that is matched by the security group rule. When the protocol is ICMP, if this value is not specified, the security group rule matches all ICMP codes.</td>
</tr>
<tr>
<td>port_range_min</td>
<td>The minimum port number in the range that is matched by the security group rule. When the protocol is TCP or UDP, if this value is not specified, the security group rule matches all numbers of port. If port_range_min is 0, all port numbers are allowed regardless of port_range_max. When the protocol is ICMP, this value must be an ICMP type. If this value is null, the security group rule matches all ICMP types.</td>
</tr>
<tr>
<td>protocol</td>
<td>The protocol that is matched by the security group rule. Valid values are null, tcp, udp, icmp, and digits between 0 and 255.</td>
</tr>
<tr>
<td>remote_group_id</td>
<td>The remote group ID to be associated with this security group rule.</td>
</tr>
<tr>
<td>remote_ip_prefix</td>
<td>The remote IP prefix to be associated with this security group rule. This attribute matches the specified IP prefix as the source or destination IP address of the IP packet. If direction is ingress matches source, otherwise matches destination.</td>
</tr>
<tr>
<td>security_group_id</td>
<td>The security group ID to associate with this security group rule.</td>
</tr>
</tbody>
</table>
## 1.5 Port

### 1.5.1 API List

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GET /v2.0/ports</td>
<td>List ports to which the project has access</td>
</tr>
<tr>
<td>2</td>
<td>POST /v2.0/ports</td>
<td>Create port</td>
</tr>
<tr>
<td>3</td>
<td>GET /v2.0/ports/{port_id}</td>
<td>Show port</td>
</tr>
<tr>
<td>4</td>
<td>PUT /v2.0/ports/{port_id}</td>
<td>Update port</td>
</tr>
<tr>
<td>5</td>
<td>DELETE /v2.0/ports/{port_id}</td>
<td>Delete port</td>
</tr>
</tbody>
</table>

### 1.5.2 API details

#### 1.5.2.1 List ports

Lists ports to which the project has access.

**URI**

/v2.0/ports

**HTTP method**

GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
   "ports": [
       {
           "status": "ACTIVE",
           "name": "",
           "allowed_address_pairs": []
       }
   ]
}
```
"admin_state_up": true,
"network_id": "70c1db1f-b701-45bd-96e0-a313ee3430b3",
"tenant_id": "d397de8a63f341818f198abb0966f6f3",
"extra_dhcp_opts": [],
"device_owner": "network:router_interface",
"mac_address": "fa:16:3e:58:42:ed",
"binding:vnic_type": "normal",
"fixed_ips": [  
  
  ],
"id": "d80b1a3b-4fc1-49f3-952e-1e2ab7081d8b",
"security_groups": [],
"device_id": "9ae135f4-b6e0-4dad-9e91-3c223e385824",
"availability_zone": "AZ1"
],

"status": "ACTIVE",
"name": "",
"allowed_address_pairs": [],
"admin_state_up": true,
"network_id": "f27aa545-cbdd-4907-b0c6-c9e8b039d0c2",
"tenant_id": "d397de8a63f341818f198abb0966f6f3",
"extra_dhcp_opts": [],
"device_owner": "network:router_interface",
"mac_address": "fa:16:3e:bb:3c:e4",
"binding:vnic_type": "normal",
"fixed_ips": [
  
  ],
"id": "f71a6703-d6de-4be1-a91a-a570ede1d159",
"security_groups": [],
"device_id": "9ae135f4-b6e0-4dad-9e91-3c223e385824",
"availability_zone": "AZ1"
]
]

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>The port status. Value is ACTIVE or DOWN.</td>
</tr>
<tr>
<td>name</td>
<td>The port name.</td>
</tr>
<tr>
<td>allowed_address_pairs</td>
<td>Allowed address pairs.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the port, which is up (true) or down (false).</td>
</tr>
<tr>
<td>network_id</td>
<td>The ID of the attached network.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The ID of the project who owns the network.</td>
</tr>
<tr>
<td>extra_dhcp_opts</td>
<td>Extra DHCP options.</td>
</tr>
<tr>
<td>device_owner</td>
<td>The ID of the entity that uses this port. For example, a dhcp agent.</td>
</tr>
<tr>
<td>mac_address</td>
<td>The MAC address of the port.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>fixed_ips</td>
<td>IP addresses for the port. Includes the IP address and subnet ID.</td>
</tr>
<tr>
<td>id</td>
<td>The ID of the port.</td>
</tr>
<tr>
<td>security_groups</td>
<td>The IDs of any attached security groups.</td>
</tr>
<tr>
<td>device_id</td>
<td>The ID of the device that uses this port. For example, a virtual server.</td>
</tr>
<tr>
<td>binding:vnic_type</td>
<td>The vnic type that is bound to the port. This value is one of the following:</td>
</tr>
<tr>
<td></td>
<td>• normal(virtual nic)</td>
</tr>
<tr>
<td></td>
<td>• direct(pci passthrough)</td>
</tr>
<tr>
<td></td>
<td>• macvtap(virtual interface with a tap-like software interface)</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
</tbody>
</table>

### 1.5.2.2 Create port

Creates a port on the specified network.

**URI**

`/v2.0/ports`

**HTTP method**

`POST`

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>A symbolic name for the port.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>allowed_address_pairs</td>
<td>Allowed address pairs. It is not possible to specify &quot;0.0.0.0/0&quot;, which allows all communication, for ip_address.</td>
<td>xsd:dict</td>
<td>Optional</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>The administrative status of the port, which is up (true) or down (false).</td>
<td>xsd:bool</td>
<td>Optional</td>
</tr>
<tr>
<td>mac_address</td>
<td>The MAC address. If you specify an address that is not valid, a 400 Bad Request error is returned. If you do not specify a MAC address, OpenStack Networking tries to allocate one. If a failure occurs, a 503 Service Unavailable error is returned.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>
### Key

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>fixed_ips</td>
<td>If you specify only a subnet ID, OpenStack Networking allocates an available IP from that subnet to the port. If you specify both a subnet ID and an IP address, OpenStack Networking tries to allocate the specified address to the port.</td>
<td>xsd:dict</td>
<td>Optional</td>
</tr>
<tr>
<td>security_groups</td>
<td>Security groups. Specify one or more security group IDs.</td>
<td>csapi:uuid</td>
<td>Optional</td>
</tr>
<tr>
<td>network_id</td>
<td>The ID of the network.</td>
<td>csapi:uuid</td>
<td>Required</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name. If you do not specify this, the resource will be created in the default Availability Zone.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**CAUTION** For a port for use with the Windows virtual server for SAP service or the physical server for SAP HANA service, it is possible to specify the IP address specified in gateway_ip and allocation_pools of the subnet related to the network ID for fixed_ips.

**CAUTION** Do not add the first interface after consecutively creating the subnet. Please issue it after receiving the API response.

### Example request

```json
{
    "port": {
        "network_id": "a87cc70a-3e15-4acf-8205-9b711a3531b7",
        "name": "private-port",
        "admin_state_up": true,
        "availability_zone": "AZ1"
    }
}
```

### Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>macGenerationFailure (503)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>serviceUnavailable (503)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
Response body (normal status)

```json
{
    "port": {
        "status": "DOWN",
        "name": "private-port",
        "allowed_address_pairs": [],
        "admin_state_up": true,
        "network_id": "a87cc70a-3e15-4acbf-8205-9b711a3531b7",
        "tenant_id": "d6700c0c9faaf343-88af-d796509c97d2",
        "binding:vnic_type": "normal",
        "device_owner": ""
        "mac_address": "fa:16:3e:c9:cb:f0",
        "fixed_ips": [
            {
                "subnet_id": "a0304c3a-4f08-4c43-88af-d796509c97d2",
                "ip_address": "10.0.0.2"
            }
        ],
        "id": "65c0ee9f-d634-4522-8954-51021b570b0d",
        "security_groups": [
            "f0ac4394-7e4a-4409-9701-ba8be283dbc3"
        ],
        "device_id": "",
        "availability_zone": "AZ1"
    }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>The port status. Value is ACTIVE or DOWN.</td>
</tr>
<tr>
<td>name</td>
<td>The port name.</td>
</tr>
<tr>
<td>allowed_address_pairs</td>
<td>Allowed address pairs.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the router, which is up (true) or down (false).</td>
</tr>
<tr>
<td>network_id</td>
<td>The ID of the attached network.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The ID of the project who owns the network.</td>
</tr>
<tr>
<td>extra_dhcp_opts</td>
<td>Extra DHCP options.</td>
</tr>
<tr>
<td>device_owner</td>
<td>The ID of the entity that uses this port. For example, a dhcp agent.</td>
</tr>
<tr>
<td>mac_address</td>
<td>The MAC address of the port.</td>
</tr>
<tr>
<td>fixed_ips</td>
<td>IP addresses for the port. Includes the IP address and subnet ID.</td>
</tr>
<tr>
<td>id</td>
<td>The ID of the port.</td>
</tr>
<tr>
<td>security_groups</td>
<td>The IDs of any attached security groups.</td>
</tr>
<tr>
<td>device_id</td>
<td>The ID of the device that uses this port. For example, a virtual server.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>binding:vnic_type</td>
<td>The vnic type that is bound to the port. This value is one of the following:</td>
</tr>
<tr>
<td></td>
<td>• normal(virtual nic)</td>
</tr>
<tr>
<td></td>
<td>• direct(pci passthrough)</td>
</tr>
<tr>
<td></td>
<td>• macvtap(virtual interface with a tap-like software interface)</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
</tbody>
</table>

If security_groups is omitted, the default security group of the project will be used.

1.5.2.3 Show port

Shows information for a specified port.

URI

/v2.0/ports/{port_id}

Description of the URI:

{port_id} UUID The UUID for the port.

HTTP method

GET

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
    "port": {
        "status": "ACTIVE",
        "name": "",
        "allowed_address_pairs": [],
        "admin_state_up": true,
        "network_id": "a87cc70a-3e15-4ac8-8205-9b711a3531b7",
        "tenant_id": "7e02058126cc4950b75f9970368ba177",
        "extra_dhcp_opts": [],
        "device_owner": "network:router_interface",
        "mac_address": "fa:16:3e:23:fd:d7",
        "binding:vnic_type": "normal",
        "fixed_ips": [
            {
                "subnet_id": "a0304c3a-4f08-4c43-88af-d796509c97d2",
                "ip_address": "10.0.0.1"
            }
        ],
        "id": "46d4bf9b-9b26-e41f3-bd2e-e6dce1ccedeb2"
    }
}
```
"security_groups": [],
"device_id": "5e3898d7-11be-483e-9732-b2f5eccd2b2e",
"availability_zone": "$AZ1"
}

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>The port status. Value is ACTIVE or DOWN.</td>
</tr>
<tr>
<td>name</td>
<td>The port name.</td>
</tr>
<tr>
<td>allowed_address_pairs</td>
<td>Allowed address pairs.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the port, which is up (true) or down (false).</td>
</tr>
<tr>
<td>network_id</td>
<td>The ID of the attached network.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The ID of the project who owns the network.</td>
</tr>
<tr>
<td>extra_dhcp_opts</td>
<td>Extra DHCP options.</td>
</tr>
<tr>
<td>device_owner</td>
<td>The ID of the entity that uses this port. For example, a dhcp agent.</td>
</tr>
<tr>
<td>mac_address</td>
<td>The MAC address of the port.</td>
</tr>
<tr>
<td>fixed_ips</td>
<td>IP addresses for the port. Includes the IP address and subnet ID.</td>
</tr>
<tr>
<td>id</td>
<td>The ID of the port.</td>
</tr>
<tr>
<td>security_groups</td>
<td>The IDs of any attached security groups.</td>
</tr>
<tr>
<td>device_id</td>
<td>The ID of the device that uses this port. For example, a virtual server.</td>
</tr>
<tr>
<td>binding:vnic_type</td>
<td>The vnic type that is bound to the port. This value is one of the following:</td>
</tr>
<tr>
<td></td>
<td>• normal (virtual nic)</td>
</tr>
<tr>
<td></td>
<td>• direct (pci passthrough)</td>
</tr>
<tr>
<td></td>
<td>• macvtap (virtual interface with a tap-like software interface)</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
</tbody>
</table>

### 1.5.2.4 Update port
Updates a specified port.

**URI**

/v2.0/ports/{port_id}

Description of the URI:
{port_id} UUID The UUID for the port.

**HTTP method**

PUT
### Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>A symbolic name for the port.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>allowed_address_pairs</td>
<td>Allowed address pairs. It is not possible to specify &quot;0.0.0.0/0&quot;, which allows all communication, for ip_address.</td>
<td>xsd:dict</td>
<td>Optional</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>The administrative status of the port, which is up (true) or down (false).</td>
<td>xsd:bool</td>
<td>Optional</td>
</tr>
<tr>
<td>fixed_ips</td>
<td>If you specify only a subnet ID, OpenStack Networking allocates an available IP from that subnet to the port. If you specify both a subnet ID and an IP address, OpenStack Networking tries to allocate the specified address to the port.</td>
<td>xsd:dict</td>
<td>Optional</td>
</tr>
<tr>
<td></td>
<td>CAUTION</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Do not specify this parameter when the port is associated with floating IP.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Do not change ports that have &quot;network: dhcp&quot; or &quot;network: router_interface&quot; as the &quot;device_owner&quot;.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>security_groups</td>
<td>Security groups. Specify one or more security group IDs.</td>
<td>csapi:uuid</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**CAUTION**
For a port for use with the Windows virtual server for SAP service or the physical server for SAP HANA service, it is possible to specify the IP address specified in gateway_ip and allocation_pools of the subnet related to the network ID for fixed_ips.

**Example request**

```json
{
    "port": {
        "name": "private-port",
        "admin_state_up": true
    }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Status code</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>badRequest (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
  "port": {
    "status": "DOWN",
    "name": "private-port",
    "allowed_address_pairs": [],
    "admin_state_up": true,
    "network_id": "a87cc70a-3e15-4acf-8205-9b711a3531b7",
    "tenant_id": "d6700c0c9f9fa4f1cb322cd4a1f3906fa",
    "binding:vnic_type": "normal",
    "device_owner": "",
    "mac_address": "fa:16:3e:c9:cb:f0",
    "fixed_ips": [
      {
        "subnet_id": "a0304c3a-4f08-4c43-88af-d796509c97d2",
        "ip_address": "10.0.0.2"
      }
    ],
    "id": "65c0ee9f-d634-4522-8954-51021b970b0d",
    "security_groups": [
      "f0ac4394-7e4a-4409-9701-ba8be283dbc3"
    ],
    "device_id": "",
    "availability_zone": "AZ1"
  }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>The port status. Value is ACTIVE or DOWN.</td>
</tr>
<tr>
<td>name</td>
<td>The port name.</td>
</tr>
<tr>
<td>allowed_address_pairs</td>
<td>Allowed address pairs.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the router, which is up (true) or down (false).</td>
</tr>
<tr>
<td>network_id</td>
<td>The ID of the attached network.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The ID of the project who owns the network.</td>
</tr>
<tr>
<td>extra_dhcp_opts</td>
<td>Extra DHCP options.</td>
</tr>
<tr>
<td>device_owner</td>
<td>The ID of the entity that uses this port. For example, a dhcp agent.</td>
</tr>
<tr>
<td>mac_address</td>
<td>The MAC address of the port.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>fixed_ips</td>
<td>IP addresses for the port. Includes the IP address and subnet ID.</td>
</tr>
<tr>
<td>id</td>
<td>The ID of the port.</td>
</tr>
<tr>
<td>security_groups</td>
<td>The IDs of any attached security groups.</td>
</tr>
<tr>
<td>device_id</td>
<td>The ID of the device that uses this port. For example, a virtual server.</td>
</tr>
<tr>
<td>binding:vnic_type</td>
<td>This value is one of the following:</td>
</tr>
<tr>
<td></td>
<td>• normal (virtual nic)</td>
</tr>
<tr>
<td></td>
<td>• direct (pci passthrough)</td>
</tr>
<tr>
<td></td>
<td>• macvtap (virtual interface with a tap-like software interface)</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
</tbody>
</table>

### 1.5.2.5 Delete port

Deletes a specified port.

**URI**

```
/v2.0/ports/{port_id}
```

Description of the URI:

{port_id} UUID The UUID for the port.

**HTTP method**

DELETE

**Request parameter**

Advisory Notes

- Do not delete ports that are attached to virtual servers.
- Do not delete the port on the subnet used for SSL-VPN connections that has "network:dhcp" as the "device_owner".

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
1.6 Global IP

1.6.1 API List

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GET /v2.0/floatingips</td>
<td>Lists floating IPs.</td>
</tr>
<tr>
<td>2</td>
<td>POST /v2.0/floatingips</td>
<td>Create floating IP. When port information is specified, associates the floating IP with the specified port.</td>
</tr>
<tr>
<td>3</td>
<td>GET /v2.0/floatingips/{floatingip_id}</td>
<td>Shows details of the specified floating IP.</td>
</tr>
<tr>
<td>4</td>
<td>PUT /v2.0/floatingips/{floatingip_id}</td>
<td>Update floating IP. Updates the specified floating IP and its association with an internal port.</td>
</tr>
<tr>
<td>5</td>
<td>DELETE /v2.0/floatingips/{floatingip_id}</td>
<td>Delete floating IP. Deletes a floating IP and, if present, its associated port.</td>
</tr>
</tbody>
</table>

1.6.2 API details

1.6.2.1 List floating IPs

Lists floating IPs that are accessible to the project who submits the request.

**URI**

/v2.0/floatingips

**HTTP method**

GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```
{
  "floatingips": [ 
    {
      "router_id": "d23abc8d-2991-4a55-ba98-2aaea84cc72f",
      "tenant_id": "4969c491a3c74ee4af974e6d800e62de"
    }
  ]
}```
"floating_network_id": "376da547-b977-4cfe-9cbe-275c80deb7f57",
"fixed_ip_address": "10.0.0.3",
"floating_ip_address": "172.24.4.228",
"port_id": "ce705c24-c1ef-408a-bda3-7bba946164ab",
"id": "2f245a7b-796b-4f26-9c9-9e082d246fda7",
"status": "ACTIVE",
"availability_zone": "AZ1"
},
{
"router_id": null,
"tenant_id": "4969c491a3c74ee4af9746d800c62de",
"floating_network_id": "376da547-b977-4cfe-9cbe-275c80deb7f57",
"fixed_ip_address": null,
"floating_ip_address": "172.24.4.227",
"port_id": null,
"id": "61cea8655-49cb-4846-997d-801b70c71bde",
"status": "DOWN",
"availability_zone": "AZ1"
}
]
}

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>floatingip</td>
<td>A floatingip object.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID.</td>
</tr>
<tr>
<td>router_id</td>
<td>The router ID.</td>
</tr>
<tr>
<td>status</td>
<td>The floatingip status.</td>
</tr>
<tr>
<td>floating_network_id</td>
<td>The ID of the network associated with the floating IP.</td>
</tr>
<tr>
<td>fixed_ip_address</td>
<td>The fixed IP address associated with the floating IP.</td>
</tr>
<tr>
<td>floating_ip_address</td>
<td>The floating IP address.</td>
</tr>
<tr>
<td>port_id</td>
<td>The port ID.</td>
</tr>
<tr>
<td>id</td>
<td>The floating IP ID.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

1.6.2.2 Create floating IP

Creates a floating IP, and, if you specify port information, associates the floating IP with an internal port.

URI

/v2.0/floatingips

HTTP method

POST

Request parameter
<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>floatingip</td>
<td>A floatingip object.</td>
<td>xsd:string</td>
<td>Required</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>floating_network_id</td>
<td>The ID of the network associated with the floating IP.</td>
<td>csapi:uuid</td>
<td>Required</td>
</tr>
<tr>
<td>fixed_ip_address</td>
<td>The fixed IP address associated with the floating IP.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>port_id</td>
<td>The port ID</td>
<td>csapi:uuid</td>
<td>Optional</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

If you do not specify this, the resource will be created in the default Availability Zone.

**Example request**

```json
{
    "floatingip": {
        "floating_network_id": "376da547-b977-4cfe-9cba-275c80deb5f7",
        "port_id": "ce705c24-c1ef-408a-bda3-7bb9d946164ab",
        "availability_zone": "AZ1"
    }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
    "floatingip": {
        "router_id": "d23abc8d-2991-4a55-ba98-2aaee84cc72f",
        "status": "DOWN",
        "tenant_id": "4969c491a3c74ee4af9d74e6d800c62de",
        "floating_network_id": "376da547-b977-4cfe-9cba-275c80deb5f7",
        "fixed_ip_address": "10.0.0.3",
        "floating_ip_address": "172.24.4.228",
        "port_id": "ce705c24-c1ef-408a-bda3-7bbd946164ab",
        "id": "2f245a7b-796b-4f26-9cf9-9e82d248fda7",
        "availability_zone": "AZ1"
    }
}
```

**Description of response body (normal status)**
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>floatingip</td>
<td>A floatingip object.</td>
</tr>
<tr>
<td>router_id</td>
<td>The router ID.</td>
</tr>
<tr>
<td>status</td>
<td>The floatingip status.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID.</td>
</tr>
<tr>
<td>floating_network_id</td>
<td>The ID of the network associated with the floating IP.</td>
</tr>
<tr>
<td>fixed_ip_address</td>
<td>The fixed IP address associated with the floating IP.</td>
</tr>
<tr>
<td>floating_ip_address</td>
<td>The floating IP address.</td>
</tr>
<tr>
<td>port_id</td>
<td>The port ID.</td>
</tr>
<tr>
<td>id</td>
<td>The floating IP ID.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

1.6.2.3 Show floating IP details
Shows details for a specified floating IP.

URI
/v2.0/floatingips/{floatingip_id}
Description of the URI:
{floatingip_id} UUID The UUID of the floating IP.

HTTP method
GET

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
    "floatingip": {
        "fixed_ip_address": "10.0.0.3",
        "floating_ip_address": "172.24.4.228",
        "availability_zone": "AZ1"
    }
}
```

Description of response body (normal status)
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>floatingip</td>
<td>A floatingip object.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID.</td>
</tr>
<tr>
<td>router_id</td>
<td>The router ID.</td>
</tr>
<tr>
<td>status</td>
<td>The floatingip status.</td>
</tr>
<tr>
<td>floating_network_id</td>
<td>The ID of the network associated with the floating IP.</td>
</tr>
<tr>
<td>fixed_ip_address</td>
<td>The fixed IP address associated with the floating IP.</td>
</tr>
<tr>
<td>floating_ip_address</td>
<td>The floating IP address.</td>
</tr>
<tr>
<td>port_id</td>
<td>The port ID.</td>
</tr>
<tr>
<td>id</td>
<td>The floating IP ID.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

**1.6.2.4 Update floating IP**

Updates a floating IP and its association with an internal port.

**URI**

```
/v2.0/floatingips/{floatingip_id}
```

Description of the URI:

- `{floatingip_id}` UUID: The UUID of the floating IP.

**HTTP method**

PUT

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>port_id</td>
<td>The port ID.</td>
<td>csapi:uuid</td>
<td>Required</td>
</tr>
<tr>
<td>fixed_ip_address</td>
<td>The fixed IP address associated with the floating IP.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```json
{
   "floatingip": {
       "port_id": "fc861431-0e6c-4842-a0ed-e2363f9bc3a8"
   }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Status code</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Confirm the following two points when floating IP exists.
1. Subnet that the specified port belongs must be attached to router.
2. External network must be attached to same router described in 1.

Response body (normal status)

```
{
  "floatingip": {
    "router_id": "d23abc8d-2991-4a55-ba98-2aeea84cc72f",
    "tenant_id": "4969c491a3c74e4af974e6d800c62de",
    "floating_network_id": "376da547-b977-4cfe-9cbe-275e80debf57",
    "fixed_ip_address": "10.0.0.4",
    "floating_ip_address": "172.24.4.228",
    "port_id": "fc861431-0e6c-4842-a0ed-e2363f9bc3a8",
    "id": "2f245a7b-796b-4f26-9cf9-9e82d248fda7",
    "availability_zone": "AZ1"
  }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>floatingip</td>
<td>A floatingip object.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID.</td>
</tr>
<tr>
<td>router_id</td>
<td>The router ID.</td>
</tr>
<tr>
<td>status</td>
<td>The floatingip status.</td>
</tr>
<tr>
<td>floating_network_id</td>
<td>The ID of the network associated with the floating IP.</td>
</tr>
<tr>
<td>fixed_ip_address</td>
<td>The fixed IP address associated with the floating IP.</td>
</tr>
<tr>
<td>floating_ip_address</td>
<td>The floating IP address.</td>
</tr>
<tr>
<td>port_id</td>
<td>The port ID.</td>
</tr>
<tr>
<td>id</td>
<td>The floating IP ID.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

1.6.2.5 Delete floating IP

Deletes a floating IP.
URI
/v2.0/floatingips/{floatingip_id}
Description of the URI:
{floatingip_id} UUID The UUID of the floating IP.

HTTP method
DELETE

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
Part 2: Virtual router

Topics:

• Common information
• Router
• Network connections between projects
• Firewall
2.1 Common information

2.1.1 General requirements

This section describes general requirements to use this API.

- Specify the name input parameter using up to 255 characters, and the description input parameter using up to 1024 characters.
- Set the version of the IP address to be specified in the request parameter to "4" ("ip_version": 4), and specify the IP address (XXX_ip_address) in IPv4 format.
- When executing the API that lists the resources, only some of the availability zone information may be returned. If this happens, it is assumed that infrastructure maintenance is in progress, so wait for a few moments (at least one minute) and then execute the API again.

2.1.2 Common API items

Request header

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content-Type</td>
<td>application/json</td>
<td>-</td>
</tr>
<tr>
<td>Accept</td>
<td>application/json</td>
<td>-</td>
</tr>
<tr>
<td>X-Auth-Token</td>
<td>authentication token</td>
<td>-</td>
</tr>
</tbody>
</table>

2.1.3 Common API error codes

Example common API error codes

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>500,400,other codes possible</td>
<td>computeFault</td>
</tr>
<tr>
<td>501</td>
<td>notImplemented</td>
</tr>
<tr>
<td>503</td>
<td>serverCapacityUnavailable</td>
</tr>
<tr>
<td>503</td>
<td>serviceUnavailable</td>
</tr>
<tr>
<td>400</td>
<td>badRequest</td>
</tr>
<tr>
<td>401</td>
<td>unauthorized</td>
</tr>
<tr>
<td>403</td>
<td>forbidden</td>
</tr>
<tr>
<td>403</td>
<td>resizeNotAllowed</td>
</tr>
<tr>
<td>404</td>
<td>itemNotFound</td>
</tr>
<tr>
<td>405</td>
<td>badMethod</td>
</tr>
<tr>
<td>409</td>
<td>backupOrResizeInProgress</td>
</tr>
<tr>
<td>Status code</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>409</td>
<td>buildInProgress</td>
</tr>
<tr>
<td>409</td>
<td>conflictingRequest</td>
</tr>
<tr>
<td>413</td>
<td>overLimit</td>
</tr>
<tr>
<td>413</td>
<td>badMediaContentType</td>
</tr>
</tbody>
</table>

**CAUTION**

- If the user has insufficient privileges to issue the target API when issuing the API for showing (Show) or deleting (Delete) resources, the status code 404 may be returned.
- If the user has insufficient privileges to issue the target API when issuing the API for updating (Update) resources, the status code 403 may be returned.
- If the user has insufficient privileges to issue the target API when issuing the API for listing (List) resources, the status code 200 will be returned and a null array will be set in the body. If there are resources with the shared attribute set to “True”, information on the target resources only will be returned.

### 2.1.4 Generate URLs when using APIs

The APIs (router and firewall) require URLs of the network type, which can be generated by the identity service on the Service catalog.

The endpoint URL is returned in the following format by the identity service.

```
https://networking.***.cloud.global.fujitsu.com
```

*** indicates the region identifier

The APIs (inter-project network connections) require URLs of the networking-ex type, which can be generated by the identity service on the Service catalog.

The endpoint URL is returned in the following format by the identity service.

```
https://networking-ex.***.cloud.global.fujitsu.com
```

*** indicates the region identifier

Join the path name of each API in the host section of the endpoint URL, and create the URL.

### 2.1.5 API options

#### 2.1.5.1 API options

Two options are available for APIs that retrieve resource information (List, Show).

#### 2.1.5.2 filter

Filters can be specified to retrieve only resources matching the specified attributes from the list of resource information to be retrieved.

Multiple attributes can be specified using AND as a condition.

This option can only be used for the List API.
Execution example:

- Retrieve the network with the name "private"
  GET /v2.0/routers?name=private
- To filter using multiple attributes with AND. Retrieve the network with the name "private" and that belongs to the AZ1 availability zone.
  GET /v2.0/routers?name=private?availability_zone=AZ1

2.1.5.3 Column Selection

The attributes that are retrieved from the resource information can be restricted. This option can only be used for the List and Show APIs.

Execution example:

- List only the id attribute of networks
  GET /v2.0/routers?fields=id
- To retrieve multiple attributes (id and name)
  GET /v2.0/routers?fields=id&fields=name
# 2.2 Router

## 2.2.1 API list

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>POST /v2.0/routers</td>
<td>Create router</td>
</tr>
<tr>
<td></td>
<td>Create router</td>
<td>Creates a logical router</td>
</tr>
<tr>
<td>2</td>
<td>GET /v2.0/routers/{router_id}</td>
<td>Show router details</td>
</tr>
<tr>
<td></td>
<td>Show router details</td>
<td>Shows details about the specified router</td>
</tr>
<tr>
<td>3</td>
<td>DELETE /v2.0/routers/{router_id}</td>
<td>Delete router</td>
</tr>
<tr>
<td></td>
<td>Delete router</td>
<td>Deletes a logical router</td>
</tr>
<tr>
<td></td>
<td>If present, also deletes its external gateway interface</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>PUT /v2.0/routers/{router_id}</td>
<td>Update router</td>
</tr>
<tr>
<td></td>
<td>Update router</td>
<td>Updates the specified logical router</td>
</tr>
<tr>
<td>5</td>
<td>PUT /v2.0/routers/{router_id}</td>
<td>Update extra route</td>
</tr>
<tr>
<td></td>
<td>Update extra route</td>
<td>Updates routing information</td>
</tr>
<tr>
<td>6</td>
<td>PUT /v2.0/routers/{router_id}/add_router_interface</td>
<td>Add interface to router</td>
</tr>
<tr>
<td></td>
<td>Add interface to router</td>
<td>Adds an internal interface to the specified logical router</td>
</tr>
<tr>
<td>7</td>
<td>PUT /v2.0/routers/{router_id}/remove_router_interface</td>
<td>Remove interface from router</td>
</tr>
<tr>
<td></td>
<td>Remove interface from router</td>
<td>Deletes an internal interface from the specified logical router</td>
</tr>
<tr>
<td>8</td>
<td>GET /v2.0/routers</td>
<td>List routers</td>
</tr>
<tr>
<td></td>
<td>List routers</td>
<td>Lists routers that the project who submits the request can access</td>
</tr>
</tbody>
</table>

## 2.2.2 API details

### 2.2.2.1 Create router
 Creates a logical router.

**URI**
/v2.0/routers

**HTTP method**
POST

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The router name.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the router, which is up (true) or down (false).</td>
<td>xsd:bool</td>
<td>Optional</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name. If you do not specify this, the resource will be created in the default Availability Zone.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**CAUTION** Do not specify external_gateway_info.

**Example request**

```json
{
   "router": {
      "name": "another_router",
      "admin_state_up": true,
      "availability_zone": "AZ1"
   }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
   "router": {
      "status": "ACTIVE",
      "external_gateway_info": null,
      "name": "another_router",
      "admin_state_up": true,
      "tenant_id": "6b96ff0cb17a4b859e1e575d221683d3",
      "id": "8604a0de-7f6b-409a-a47c-a1cc7bc77b2e",
      "availability_zone": "AZ1"
   }
}
```

**Description of response body (normal status)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>router</td>
<td>A router object.</td>
</tr>
<tr>
<td>status</td>
<td>The router status.</td>
</tr>
</tbody>
</table>
### 2.2.2.2 Show router details

Shows details for a specified router.

**URI**

```
/v2.0/routers/{router_id}
```

Description of the URI:

- `{router_id}` UUID The UUID of the router.

**HTTP method**

GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
  "router": {
    "status": "ACTIVE",
    "external_gateway_info": {
      "network_id": "ec3a5b3c-9caa-4638-95f9-d33778fb32a2",
      "enable_snat": true,
      "external_fixed_ips": [
        {
          "subnet_id": "41dc310d-52a2-42ab-a193-1564c0cf8cc6",
          "ip_address": "133.162.136.103"
        }
      ],
      "enable_snat": true,
      "external_fixed_ips": [
        {
          "subnet_id": "41dc310d-52a2-42ab-a193-1564c0cf8cc6",
          "ip_address": "133.162.136.103"
        }
      ],
      "name": "another_router",
      "admin_state_up": true,
      "tenant_id": "6b96ff0cb17a4b859e1e575d221683d3",
      "routes": [
        {
          "nexthop": "10.1.0.10",
          ...  # More routes could be present
        }
      ]
    }
  }
}
```
Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>router</td>
<td>A router object.</td>
</tr>
<tr>
<td>status</td>
<td>The router status.</td>
</tr>
</tbody>
</table>
| external_gateway_info | The external gateway information of the router. If the router has an external
                          gateway, this would be a dict with network_id, enable_snat and external_fixed_ips. Otherwise, this would be null. |
| name                  | The router name.                                                             |
| admin_state_up        | The administrative state of the router, which is up (true) or down (false). |
| tenant_id             | The project ID.                                                              |
| id                    | The router ID.                                                               |
| routes                | List of dictionary(static route definitions) in this format:                 |
|                       | [                                                                           |
|                       |   {                                                                         |
|                       |     "next_hop": "IPADDRESS",                                                |
|                       |     "destination": "CIDR"                                                   |
|                       |   }                                                                         |
|                       | ]                                                                           |
| availability_zone     | The Availability Zone name                                                  |

2.2.2.3 Delete router

Deletes a logical router and, if present, its external gateway interface.

URI

/v2.0/routers/{router_id}

Description of the URI:

{router_id} UUID The UUID of the router.

HTTP method

DELETE

Response status
### 2.2.2.4 Update router

Updates a logical router.

**URI**

`/v2.0/routers/{router_id}`

Description of the URI:

- `{router_id}` UUID: The UUID of the router.

**HTTP method**

**PUT**

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>external_gateway_info</td>
<td>The network_id, for the external gateway.</td>
<td>xsd:dict</td>
<td>Optional</td>
</tr>
<tr>
<td>name</td>
<td>The router name.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the router, which is up (true) or down (false).</td>
<td>xsd:bool</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**CAUTION**

- Do not specify "external_gateway_info".
- To change the value of an already set "external_gateway_info", temporarily set "external_gateway_info" as a blank value. After that, change the value to that of the "external_gateway_info" that you want to set.

**Example request**

```json
{
    "router": {
        "external_gateway_info": {
            "network_id": "8ca37218-28ff-41cb-9b10-039601ea7e6b"
        }
    }
}
```
### Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>serviceUnavailable (503)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**CAUTION**

If 503 error message returned, when external gateway is being configured. Please try it again about 2 minutes later.

### Response body (normal status)

```
|
| "router": |
| "status": "ACTIVE", |
| "external_gateway_info": |
| "network_id": "8ca37218-28ff-41cb-9b10-039601ea7e6b", |
| "enable_snat": true, |
| "external_fixed_ips": |
| |
| "subnet_id": "41dc310d-52a2-42ab-a193-1564c0cf8cc6", |
| "ip_address": "133.162.136.103" |
| |
| "name": "another_router", |
| "admin_state_up": true, |
| "tenant_id": "6b96ff0cb17a4b859e1e575d221683d3", |
| "routes": |
| |
| "nexthop": "10.1.0.10", |
| "destination": "40.0.1.0/24" |
| |
| "id": "8604a0de-7f6b-409a-a47c-a1cc7bc77b2e", |
| "availability_zone": "AZ1" |
| }
```

### Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>router</td>
<td>A router object.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>status</td>
<td>The router status.</td>
</tr>
<tr>
<td>external_gateway_info</td>
<td>The external gateway information of the router. If the router has an external gateway, this would be a dict with network_id, enable_snat and external_fixed_ips. Otherwise, this would be null.</td>
</tr>
<tr>
<td>name</td>
<td>The router name.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the router, which is up (true) or down (false).</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID.</td>
</tr>
<tr>
<td>id</td>
<td>The router ID.</td>
</tr>
<tr>
<td>routes</td>
<td>List of dictionary(static route definitions) in this format:</td>
</tr>
<tr>
<td></td>
<td>[</td>
</tr>
<tr>
<td></td>
<td>{</td>
</tr>
<tr>
<td></td>
<td>&quot;nexthop&quot;:&quot;IPADDRESS&quot;,</td>
</tr>
<tr>
<td></td>
<td>&quot;destination&quot;:&quot;CIDR&quot;</td>
</tr>
<tr>
<td></td>
<td>}</td>
</tr>
<tr>
<td></td>
<td>]</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
</tbody>
</table>

2.2.2.5 Update extra route

Updates logical router with routes attribute.

**URI**

/v2.0/routers/{router_id}

Description of the URI:

{router_id} UUID The UUID of the router.

**HTTP method**

PUT

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>routes</td>
<td>Extra route configuration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nexthop</td>
<td>The IP address of the next hop.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
<td>--------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>destination</td>
<td>The destination CIDR.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**CAUTION** Do not specify the same CIDR as the one the router interface belongs to.

**Example request**

```json
{
    "router": {
        "routes": [
            {
                "nexthop": "10.1.0.10",
                "destination": "40.0.1.0/24"
            }
        ]
    }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```
{"router": {
    "status": "ACTIVE",
    "external_gateway_info": {
        "network_id": "5c26e0bb-a9a9-429c-9703-5c417a221096",
        "name": "router1",
        "admin_state_up": true,
        "tenant_id": "936fa220b2c24a87af51026439af7a3e",
        "routes": [{
            "nexthop": "10.1.0.10",
            "destination": "40.0.1.0/24"
        }]
    },
    "id": "babc8173-46f6-4b6f-8b95-38c1683a4e22",
    "availability_zone": "AZ["
}}
```

**Description of response body (normal status)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>The router status.</td>
</tr>
</tbody>
</table>
### 2.2.2.6 Add interface to router

Adds an internal interface to a logical router.

**URI**

/v2.0/routers/{router_id}/add_router_interface

Description of the URI:

{router_id} UUID The UUID of the router.

**HTTP method**

PUT

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>subnet_id</td>
<td>The subnet ID. (exclusive with port_id)</td>
<td>csapi:UUID</td>
<td>Optional</td>
</tr>
<tr>
<td>port_id</td>
<td>The port ID. (exclusive with subnet_id)</td>
<td>csapi:UUID</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**CAUTION** You must specify either subnet_id or port_id

**CAUTION** Do not add the first interface after consecutively creating the router. Please issue it after receiving the API response.

**Example request**

```
{
    "subnet_id": "a2f1f29d-571b-4533-907f-5803ab96ead1"
}
```

**Response status**
### Status code | Description
--- | ---
200 | Normal response codes
badRequest (400) | Error response codes
unauthorized (401) | Error response codes
itemNotFound (404) | Error response codes
conflict (409) | Error response codes

**Response body (normal status)**
```
{
  "subnet_id": "a2f1f29d-571b-4533-907f-5803ab96ead1",
  "port_id": "3a44f4e5-1694-493a-a1fb-393881e673a4",
  "tenant_id": "6b96ff0cb17a4b859e1e575d221683d3",
  "id": "8604a0de-7f6b-409a-a47c-a1cc7bc77b2e",
  "availability_zone": "AZ1"
}
```

### Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>subnet_id</td>
<td>The subnet ID</td>
</tr>
<tr>
<td>port_id</td>
<td>The port ID</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID</td>
</tr>
<tr>
<td>id</td>
<td>The router ID</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
</tbody>
</table>

### 2.2.2.7 Remove interface from router

Removes an internal interface from a logical router.

**URI**

`/v2.0/routers/{router_id}/remove_router_interface`

Description of the URI:

- `{router_id}` UUID The UUID of the router.

**HTTP method**

PUT

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>subnet_id</td>
<td>The subnet ID</td>
<td>csapi:UUID</td>
<td>Optional</td>
</tr>
<tr>
<td>port_id</td>
<td>The port ID</td>
<td>csapi:UUID</td>
<td>Optional</td>
</tr>
</tbody>
</table>
Example request

```
{
    "subnet_id": "a2f1f29d-571b-4533-907f-5803ab96ead1"
}
```

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```
{
    "id": "8604a0de-7f6b-409a-a47c-a1cc7bc77b2e",
    "tenant_id": "2f245a7b-796b-4f26-9cf9-9e82d248fda7",
    "port_id": "3a44f4e5-1694-493a-a1fb-393881c673a4",
    "subnet_id": "a2f1f29d-571b-4533-907f-5803ab96ead1",
    "availability_zone": "AZ1"
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>The router ID</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID</td>
</tr>
<tr>
<td>port_id</td>
<td>The port ID</td>
</tr>
<tr>
<td>subnet_id</td>
<td>The subnet ID</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
</tbody>
</table>

2.2.2.8 List routers

Lists logical routers that are accessible to the project who submits the request.

URI

```
/v2.0/routers
```

- 70 -
HTTP method
GET

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
[
    {
        "routers": [
            {
                "status": "ACTIVE",
                "external_gateway_info": null,
                "name": "second_routers",
                "admin_state_up": true,
                "tenant_id": "6b96ff0cb17a4b859e1e575d221683d3",
                "id": "7177abc4-5ae9-4bb7-b0d4-89e94a4abf3b",
                "routes": [
                    {
                        "nexthop": "10.1.0.10",
                        "destination": "40.0.1.0/24"
                    }
                ],
                "availability_zone": "AZ1"
            },
            {
                "status": "ACTIVE",
                "external_gateway_info": {
                    "network_id": "3c5bcddd-6af9-4e6b-9c3e-c153e521cab8",
                    "enable_snat": true,
                    "external_fixed_ips": [
                        {
                            "subnet_id": "41dc310d-52a2-42ab-a193-1564c0cf8cc6",
                            "ip_address": "133.162.136.103"
                        }
                    ],
                },
                "name": "router1",
                "admin_state_up": true,
                "tenant_id": "33a40233088643acb66ffeb0ebea679",
                "id": "a9254bcb-2613-4a13-ac04c-adc581fba50d",
                "routes": [
                    {
                        "nexthop": "11.1.0.10",
                        "destination": "41.0.1.0/24"
                    }
                ],
                "availability_zone": "AZ1"
            }
        ]
    }
]
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>The router status.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>external_gateway_info</td>
<td>The external gateway information of the router. If the router has an external gateway, this would be a dict with network_id, enable_snat and external_fixed_ips. Otherwise, this would be null.</td>
</tr>
<tr>
<td>name</td>
<td>The router name.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the router, which is up (true) or down (false).</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The Project ID.</td>
</tr>
<tr>
<td>id</td>
<td>The router ID.</td>
</tr>
<tr>
<td>routes</td>
<td>List of dictionary(static route definitions) in this format:</td>
</tr>
<tr>
<td></td>
<td>`{</td>
</tr>
<tr>
<td></td>
<td>&quot;nexthop&quot;:&quot;IPADDRESS&quot;,</td>
</tr>
<tr>
<td></td>
<td>&quot;destination&quot;:&quot;CIDR&quot;</td>
</tr>
<tr>
<td></td>
<td>}</td>
</tr>
<tr>
<td></td>
<td>Static route definitions: next_hop is the IP address of the next hop. destination is the destination CIDR.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>
2.3 Network connections between projects

2.3.1 API List

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PUT /v2.0/routers/{router_id}/add_cross_project_router_interface</td>
<td>Adds an internal interface to a logical router. Specify a port on the network of a project that is different to the logical router within the same domain, and create the connection interface.</td>
</tr>
<tr>
<td>2</td>
<td>PUT /v2.0/routers/{router_id}/remove_cross_project_router_interface</td>
<td>Removes an internal interface from a logical router. Specify a port on the network of a project that is different to the logical router within the same domain, and delete the connection interface.</td>
</tr>
<tr>
<td>3</td>
<td>PUT /v2.0/routers/{router_id}</td>
<td>Updates a logical router. Updates the routing information between different projects within the same domain.</td>
</tr>
</tbody>
</table>

2.3.2 API details

2.3.2.1 Add interface to router (Create connection interface)

Adds an internal interface to a logical router.
Specify a port on the network of a project that is different to the logical router within the same domain, and create the connection interface.

**URI**
/v2.0/routers/{router_id}/add_cross_project_router_interface

**Description of the URI:**

{router_id} UUID The UUID of the router.

**HTTP method**
PUT

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>port_id</td>
<td>The port ID.</td>
<td>csapi:UUID</td>
<td>MUST</td>
</tr>
</tbody>
</table>

**Example request**

```json
{
    "port_id": "a2f1f29d-571b-4533-907f-5803ab96ead1"
}
```
Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
  "subnet_id": "a2f1f29d-571b-4533-907f-5803ab96ead1",
  "port_id": "1accb5ac-b258-483e-af3a-f41f6df8190c",
  "tenant_id": "e10f4ade5a7649c49e1a6817196516ad",
  "id": "8604a0de-7f6b-409a-a47c-a1cc7bc77b2e",
  "availability_zone": "AZ1"
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>subnet_id</td>
<td>The subnet ID</td>
</tr>
<tr>
<td>port_id</td>
<td>The port ID</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID</td>
</tr>
<tr>
<td>id</td>
<td>The router ID</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
</tbody>
</table>

Notes

- If a port on the network of the same project as the logical router is specified, an error will occur. (response code: 400)
- If a logical router outside the domain to which the user belongs is specified, an error will occur. (response code: 403)
- If a port on a network outside the domain to which the user belongs is specified, an error will occur. (response code: 404)

2.3.2.2 Remove interface from router (Delete connection interface)

Removes an internal interface from a logical router.

Specify a port on the network of a project that is different to the logical router within the same domain, and delete the connection interface.
URI

/v2.0/routers/{router_id}/remove_cross_project_router_interface

Description of the URI:

{router_id} UUID The UUID of the router.

HTTP method

PUT

Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>port_id</td>
<td>The port ID.</td>
<td>csapi:uuid</td>
<td>MUST</td>
</tr>
</tbody>
</table>

Example request

```json
{
  "port_id": "1accb5ac-b258-483e-af3a-f41f6df8190c"
}
```

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized</td>
<td>Error response codes</td>
</tr>
<tr>
<td>forbidden</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound</td>
<td>Error response codes</td>
</tr>
<tr>
<td>conflict</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
  "id": "8604a0de-7f6b-409a-a47c-a1cc7bc77b2e",
  "tenant_id": "e10f4ade5a7649c49e1a6817196516ad",
  "port_id": "1accb5ac-b258-483e-af3a-f41f6df8190c",
  "subnet_id": "a2f1f29d-571b-4533-907f-5803ab96ead1",
  "availability_zone": "AZ1"
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>The router ID</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID</td>
</tr>
<tr>
<td>port_id</td>
<td>The port ID</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>subnet_id</td>
<td>The subnet ID</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
</tbody>
</table>

**Notes**

If a port on the network of the same project as the logical router is specified, an error will occur. (response code: 400)
If a logical router outside the domain to which the user belongs is specified, an error will occur. (response code: 403)
If a port on a network outside the domain to which the user belongs is specified, an error will occur. (response code: 404)

### 2.3.2.3 Update router (Update routing information)

Updates a logical router.
Updates the routing information between different projects within the same domain.

**URI**

```
/v2.0/routers/{router_id}
```

Description of the URI:
{router_id} UUID The UUID of the router.

**HTTP method**

PUT

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>routes</td>
<td>List of dictionary(static route definitions) in this format:</td>
<td>xsd:list</td>
<td>MUST</td>
</tr>
<tr>
<td></td>
<td>[</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;nexthop&quot;:&quot;IPADDRESS&quot;,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;destination&quot;:&quot;CIDR&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Static route definitions:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>next_hop is the IP address of the next hop.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>destination is the destination CIDR.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example request**

```
{
  "router": {},
  "routes": [
    {
      "nexthop": "IPADDRESS",
      "destination": "CIDR"
    }
  ]
}
```
Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>badRequest (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```
{
  "router": {
    "status": "ACTIVE",
    "external_gateway_info": {
      "network_id": "8ca37218-28ff-41cb-9b10-039601ea7e6b"
    },
    "name": "another_router",
    "admin_state_up": true,
    "tenant_id": "6b96ff0cb17a4b859e1e575d221683d3",
    "id": "8604a0de-7f6b-409a-a470-1cc7bc77b2e",
    "routes": [
      {
        "nexthop": "10.54.249.65",
        "destination": "0.0.0.0/0"
      },
      {
        "nexthop": "10.54.249.65",
        "destination": "10.54.249.128/26"
      }
    ],
    "availability_zone": "AZ1"
  }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>router</td>
<td>A routers object.</td>
</tr>
<tr>
<td>status</td>
<td>The router status.</td>
</tr>
<tr>
<td>external_gateway_info</td>
<td>The network_id, for the external gateway.</td>
</tr>
<tr>
<td>name</td>
<td>The router name.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>The administrative state of the router, which is up (true) or down (false).</td>
</tr>
<tr>
<td>tenant_id</td>
<td>The project ID.</td>
</tr>
<tr>
<td>id</td>
<td>The router ID.</td>
</tr>
<tr>
<td>routes</td>
<td>List of dictionary(static route definitions) in this format:</td>
</tr>
<tr>
<td></td>
<td>[</td>
</tr>
<tr>
<td></td>
<td>{</td>
</tr>
<tr>
<td></td>
<td>&quot;next_hop&quot;:&quot;IPADDRESS&quot;,</td>
</tr>
<tr>
<td></td>
<td>&quot;destination&quot;:&quot;CIDR&quot;</td>
</tr>
<tr>
<td></td>
<td>}</td>
</tr>
<tr>
<td></td>
<td>]</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
</tbody>
</table>

**Notes**

If a logical router outside the domain to which the user belongs is specified, an error will occur. (response code: 403)
## 2.4 Firewall

### 2.4.1 API list

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GET /v2.0/fw/firewall_rules&lt;br&gt;List firewall rules</td>
<td>Lists all firewall rules</td>
</tr>
<tr>
<td>2</td>
<td>GET /v2.0/fw/firewall_rules/{firewall_rule_id}&lt;br&gt;Show firewall rule details</td>
<td>Shows details about the specified firewall rule</td>
</tr>
<tr>
<td>3</td>
<td>POST /v2.0/fw/firewall_rules&lt;br&gt;Create firewall rule</td>
<td>Creates a firewall rule</td>
</tr>
<tr>
<td>4</td>
<td>PUT /v2.0/fw/firewall_rules/{firewall_rule_id}&lt;br&gt;Update firewall rule</td>
<td>Updates the specified firewall rule</td>
</tr>
<tr>
<td>5</td>
<td>DELETE /v2.0/fw/firewall_rules/{firewall_rule_id}&lt;br&gt;Delete firewall rule</td>
<td>Deletes the specified firewall rule</td>
</tr>
<tr>
<td>6</td>
<td>GET /v2.0/fw/firewall_policies&lt;br&gt;List firewall policies</td>
<td>Lists all firewall policies</td>
</tr>
<tr>
<td>7</td>
<td>GET /v2.0/fw/firewall_policies/{firewall_policy_id}&lt;br&gt;Show firewall policy details</td>
<td>Shows details about the specified firewall policy</td>
</tr>
<tr>
<td>8</td>
<td>POST /v2.0/fw/firewall_policies&lt;br&gt;Create firewall policy</td>
<td>Creates a firewall policy</td>
</tr>
<tr>
<td>9</td>
<td>PUT /v2.0/fw/firewall_policies/{firewall_policy_id}&lt;br&gt;Update firewall policy</td>
<td>Updates the specified firewall policy</td>
</tr>
<tr>
<td>10</td>
<td>DELETE /v2.0/fw/firewall_policies/{firewall_policy_id}&lt;br&gt;Delete firewall policy</td>
<td>Deletes the specified firewall policy</td>
</tr>
<tr>
<td>11</td>
<td>PUT /v2.0/fw/firewall_policies/{firewall_policy-id}/insert_rule&lt;br&gt;Insert firewall rule in firewall policy</td>
<td>Inserts a firewall rule into the specified firewall policy</td>
</tr>
<tr>
<td>12</td>
<td>PUT /v2.0/fw/firewall_policies/{firewall_policy-id}/remove_rule&lt;br&gt;Remove firewall rule from firewall policy</td>
<td>Removes a firewall rule from the specified firewall policy</td>
</tr>
<tr>
<td>13</td>
<td>GET /v2.0/fw/firewalls&lt;br&gt;List firewalls</td>
<td>Lists all firewalls</td>
</tr>
<tr>
<td>14</td>
<td>GET /v2.0/fw/firewalls/{firewall-id}&lt;br&gt;Show firewall details</td>
<td>Shows details about the specified firewall</td>
</tr>
<tr>
<td>Item</td>
<td>API</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-----</td>
<td>-------------</td>
</tr>
<tr>
<td>15</td>
<td>POST /v2.0/fw/firewalls</td>
<td>Create firewall</td>
</tr>
<tr>
<td>16</td>
<td>PUT /v2.0/fw/firewalls/{firewall-id}</td>
<td>Update firewall</td>
</tr>
<tr>
<td>17</td>
<td>PUT /v2.0/fw/firewalls/{firewall-id}/reset_connections</td>
<td>Update firewall (Connection reset)</td>
</tr>
<tr>
<td>18</td>
<td>DELETE /v2.0/fw/firewalls/{firewall-id}</td>
<td>Delete firewall</td>
</tr>
</tbody>
</table>

2.4.2 API details

2.4.2.1 List firewall rules
Lists firewall rules.

**URI**
/v2.0/fw/firewall_rules

**HTTP method**
GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
  "firewall_rules": [
    {
      "action": "allow",
      "description": "",
      "destination_ip_address": null,
      "destination_port": "80",
      "enabled": true,
      "firewall_policy_id": "c69933c1-b472-44f9-8226-30dc4ff454c",
      "id": "8722e0e0-9cc9-4490-9660-8c9a5732fbb0",
      "ip_version": 4,
      "name": "ALLOW_HTTP",
      "position": 1,
      "protocol": "tcp",
      "shared": false,
      "source_ip_address": null,
      "source_port": null,
      "tenant_id": "45977fa2dbd74820968d0d8970117",
      "availability_zone": "AZ1"
    }
  ]
}```
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>Action to be performed on the traffic matching the rule (allow, deny).</td>
</tr>
<tr>
<td>description</td>
<td>Human readable description for the firewall Rule (1024 character limit).</td>
</tr>
<tr>
<td>destination_ip_address</td>
<td>Destination IP address or CIDR.</td>
</tr>
<tr>
<td>destination_port</td>
<td>Destination port number or a range. If range, port numbers are separated by colon.</td>
</tr>
<tr>
<td>enabled</td>
<td>When set to False will disable this rule in the firewall policy. Facilitates selectively turning off rules without having to disassociate the rule from the firewall policy.</td>
</tr>
<tr>
<td>firewall_policy_id</td>
<td>This is a read-only attribute which gets populated with the uuid of the firewall policy when this firewall rule is associated with a firewall policy. A firewall rule can be associated with one firewall policy at a time. The association can however be updated to a different firewall policy. This attribute can be &quot;null&quot; if the rule is not associated with any firewall policy.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the firewall rule object.</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall rule (255 character limit). Does not have to be unique.</td>
</tr>
<tr>
<td>position</td>
<td>This is a read-only attribute that gets assigned to this rule when the rule is associated with a firewall policy. It indicates the position of this rule in that firewall policy. This position number starts at 1. The position can be &quot;null&quot; if the firewall rule is not associated with any policy.</td>
</tr>
<tr>
<td>protocol</td>
<td>The protocol that is matched by the firewall rule. Valid values are null, tcp, udp, and icmp.</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether this firewall rule is shared across all projects. This value is always False.</td>
</tr>
<tr>
<td>source_ip_address</td>
<td>Source IP address or CIDR.</td>
</tr>
<tr>
<td>source_port</td>
<td>Source port number or a range. If range, port numbers are separated by colon.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the firewall rule. Only admin users can specify a project identifier other than their own.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

2.4.2.2 Show firewall rule details

Shows firewall rule details.
## URI

/v2.0/fw/firewall_rules/{firewall_rule-id}

## HTTP method

GET

## Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

## Response body (normal status)

```json
{
  "firewall_rule": {
    "action": "allow",
    "description": "",
    "destination_ip_address": null,
    "destination_port": "80",
    "enabled": true,
    "firewall_policy_id": null,
    "id": "8722e0e0-9cc9-4490-9660-8c9a5732fbb0",
    "ip_version": 4,
    "name": "ALLOW_HTTP",
    "position": null,
    "protocol": "tcp",
    "shared": false,
    "source_ip_address": null,
    "source_port": null,
    "tenant_id": "45977fa2dbd7482098dd68d0d8970117",
    "availability_zone": "AZ1"
  }
}
```

## Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>Action to be performed on the traffic matching the rule (allow, deny).</td>
</tr>
<tr>
<td>description</td>
<td>Human readable description for the firewall Rule (1024 character limit).</td>
</tr>
<tr>
<td>destination_ip_address</td>
<td>Destination IP address or CIDR.</td>
</tr>
<tr>
<td>destination_port</td>
<td>Destination port number or a range. If range, port numbers are separated by colon.</td>
</tr>
<tr>
<td>enabled</td>
<td>When set to False will disable this rule in the firewall policy. Facilitates selectively turning off rules without having to disassociate the rule from the firewall policy.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>firewall_policy_id</td>
<td>This is a read-only attribute which gets populated with the uuid of the firewall policy when this firewall rule is associated with a firewall policy. A firewall rule can be associated with one firewall policy at a time. The association can however be updated to a different firewall policy. This attribute can be &quot;null&quot; if the rule is not associated with any firewall policy.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the firewall rule object.</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall rule (255 character limit). Does not have to be unique.</td>
</tr>
<tr>
<td>position</td>
<td>This is a read-only attribute that gets assigned to this rule when the rule is associated with a firewall policy. It indicates the position of this rule in that firewall policy. This position number starts at 1. The position can be &quot;null&quot; if the firewall rule is not associated with any policy.</td>
</tr>
<tr>
<td>protocol</td>
<td>The protocol that is matched by the firewall rule. Valid values are null, tcp, udp, and icmp.</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether this firewall rule is shared across all projects. This value is always False.</td>
</tr>
<tr>
<td>source_ip_address</td>
<td>Source IP address or CIDR.</td>
</tr>
<tr>
<td>source_port</td>
<td>Source port number or a range. If range, port numbers are separated by colon.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the firewall rule. Only admin users can specify a project identifier other than their own.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

### 2.4.2.3 Create firewall rule

Creates a firewall rule.

**URI**

/v2.0/fw/firewall_rules

**HTTP method**

POST

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>Action to be performed on the traffic matching the rule (allow, deny).</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>Description</td>
<td>Human readable description for the firewall Rule (1024 character limit).</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>destination_ip_address</td>
<td>Destination IP address or CIDR.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------</td>
<td>-------------------</td>
</tr>
<tr>
<td>destination_port</td>
<td>Destination port number or a range. If range, port numbers are separated by colon. Specify a small port number first.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>enabled</td>
<td>When set to False will disable this rule in the firewall policy. Facilitates selectively turning off rules without having to disassociate the rule from the firewall policy.</td>
<td>xsd:bool</td>
<td>Optional</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall rule (255 character limit). Does not have to be unique.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>protocol</td>
<td>The protocol that is matched by the firewall rule. Valid values are null, tcp, udp, and icmp. (Avoid the use of null when specifying the protocol for Firewall rules. Instead, create multiple rules for both 'tcp' and 'udp' protocols independently.)</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>source_ip_address</td>
<td>Source IP address or CIDR.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>source_port</td>
<td>Source port number or a range. If range, port numbers are separated by colon.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name. If you do not specify this, the resource will be created in the default Availability Zone.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```
{
    "firewall_rule": {
        "action": "allow",
        "destination_port": "80",
        "enabled": true,
        "name": "ALLOW_HTTP",
        "protocol": "tcp",
        "availability_zone": "AZ1"
    }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
Response body (normal status)

```
{
  "firewall_rule": {
    "action": "allow",
    "description": "",
    "destination_ip_address": null,
    "destination_port": "80",
    "enabled": true,
    "firewall_policy_id": null,
    "id": "8722e0e0-9cc9-4490-9660-8c9a5732fbb0",
    "ip_version": 4,
    "name": "ALLOW_HTTP",
    "position": null,
    "protocol": "tcp",
    "shared": false,
    "source_ip_address": null,
    "source_port": null,
    "tenant_id": "45977fa2dbd7482098dd68970117",
    "availability_zone": "AZ1"
  }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>Action to be performed on the traffic matching the rule (allow, deny).</td>
</tr>
<tr>
<td>Description</td>
<td>Human readable description for the firewall Rule (1024 character limit).</td>
</tr>
<tr>
<td>destination_ip_address</td>
<td>Destination IP address or CIDR.</td>
</tr>
<tr>
<td>destination_port</td>
<td>Destination port number or a range</td>
</tr>
<tr>
<td>enabled</td>
<td>When set to False will disable this rule in the firewall policy. Facilities selectively turning off rules without having to disassociate the rule from the firewall policy</td>
</tr>
<tr>
<td>firewall_policy_id</td>
<td>This is a read-only attribute which gets populated with the uuid of the firewall policy when this firewall rule is associated with a firewall policy. A firewall rule can be associated with one firewall policy at a time. The association can however be updated to a different firewall policy. This attribute can be &quot;null&quot; if the rule is not associated with any firewall policy.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the firewall rule object.</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall rule (255 character limit). Does not have to be unique.</td>
</tr>
<tr>
<td>position</td>
<td>This is a read-only attribute that gets assigned to this rule when the rule is associated with a firewall policy. It indicates the position of this rule in that firewall policy. This position number starts at 1. The position can be &quot;null&quot; if the firewall rule is not associated with any policy.</td>
</tr>
<tr>
<td>protocol</td>
<td>The protocol that is matched by the firewall rule. Valid values are null, tcp, udp, and icmp.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether this firewall rule is shared across all projects. This value is always False.</td>
</tr>
<tr>
<td>source_ip_address</td>
<td>Source IP address or CIDR.</td>
</tr>
<tr>
<td>source_port</td>
<td>Source port number or a range.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

### 2.4.2.4 Update firewall rule

Updates a firewall rule.

**URI**

/v2.0/fw/firewall_rules/{firewall_rule-id}

**HTTP method**

PUT

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>Action to be performed on the traffic matching the rule (allow, deny).</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>Description</td>
<td>Human readable description for the firewall Rule (1024 character limit).</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>destination_ip_address</td>
<td>Destination IP address or CIDR.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>destination_port</td>
<td>Destination port number or a range. If range, port numbers are separated by colon.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>enabled</td>
<td>When set to False will disable this rule in the firewall policy. Facilitates selectively turning off rules without having to disassociate the rule from the firewall policy.</td>
<td>xsd:bool</td>
<td>Optional</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall rule (255 character limit). Does not have to be unique.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>protocol</td>
<td>The protocol that is matched by the firewall rule. Valid values are null, tcp, udp, and icmp. (Avoid the use of null when specifying the protocol for Firewall rules. Instead, create multiple rules for both 'tcp' and 'udp' protocols independently.)</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>source_ip_address</td>
<td>Source IP address or CIDR.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-----------</td>
<td>-------------------</td>
</tr>
<tr>
<td>source_port</td>
<td>Source port number or a range. If range, port numbers are separated by colon.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```json
{
    "firewall_rule": {
        "enabled": true
    }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
    "firewall_rule": {
        "action": "allow",
        "description": "",
        "destination_ip_address": null,
        "destination_port": "80",
        "enabled": true,
        "firewall_policy_id": "c69933c1-b472-44f9-8226-30dc4ff454c",
        "id": "8722e0e0-9cc9-4490-9660-8c9a5732fbb0",
        "ip_version": 4,
        "name": "ALLOW_HTTP",
        "position": 1,
        "protocol": "tcp",
        "shared": false,
        "source_ip_address": null,
        "source_port": null,
        "tenant_id": "45977fa2d2bdf7482098dd68d0d8970117",
        "availability_zone": "AZ1"
    }
}
```

**Description of response body (normal status)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>Action to be performed on the traffic matching the rule (allow, deny).</td>
</tr>
</tbody>
</table>
### Item Description

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>Human readable description for the firewall Rule (1024 character limit).</td>
</tr>
<tr>
<td>destination_ip_address</td>
<td>Destination IP address or CIDR.</td>
</tr>
<tr>
<td>destination_port</td>
<td>Destination port number or a range</td>
</tr>
<tr>
<td>enabled</td>
<td>When set to False will disable this rule in the firewall policy. Facilitates selectively turning off rules without having to disassociate the rule from the firewall policy</td>
</tr>
<tr>
<td>firewall_policy_id</td>
<td>This is a read-only attribute which gets populated with the uuid of the firewall policy when this firewall rule is associated with a firewall policy. A firewall rule can be associated with one firewall policy at a time. The association can however be updated to a different firewall policy. This attribute can be &quot;null&quot; if the rule is not associated with any firewall policy.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the firewall rule object.</td>
</tr>
<tr>
<td>ip_version</td>
<td>IP Protocol Version</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall rule (255 character limit). Must not have to be unique.</td>
</tr>
<tr>
<td>position</td>
<td>This is a read-only attribute that gets assigned to this rule when the rule is associated with a firewall policy. It indicates the position of this rule in that firewall policy. This position number starts at 1. The position can be &quot;null&quot; if the firewall rule is not associated with any policy.</td>
</tr>
<tr>
<td>protocol</td>
<td>The protocol that is matched by the firewall rule. Valid values are null, tcp, udp, and icmp.</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether this firewall rule is shared across all projects. This value is always False.</td>
</tr>
<tr>
<td>source_ip_address</td>
<td>Source IP address or CIDR.</td>
</tr>
<tr>
<td>source_port</td>
<td>Source port number or a range.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the firewall rule. Only admin users can specify a project identifier other than their own.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

### 2.4.2.5 Delete firewall rule

Deletes a firewall rule.

**URI**

`/v2.0/fw/firewall_rules/{firewall_rule-id}`

**HTTP method**

DELETE

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Status code</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Conflict (409)</td>
<td>Error response codes The Conflict error response is returned when an operation is performed while the firewall is in a PENDING state.</td>
</tr>
</tbody>
</table>

2.4.2.6 List firewall policies
Displays a list of firewall policies.

**URI**
/v2.0/fw/firewall_policies

**HTTP method**
GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Forbidden (403)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```
{
  "firewall_policies": [
    {
      "audited": false,
      "description": "",
      "firewall_rules": [
        "8722e0e0-9cc9-4490-9660-8c9a5732fbb0"
      ],
      "id": "c69933c1-b472-44f9-8226-30dc4f4d54f2",
      "name": "test-policy",
      "shared": false,
      "tenant_id": "45977fa2d8d74820988d68d0d8970117",
      "availability_zone": "AZ1"
    }
  ]
}
```

**Description of response body (normal status)**
### audited
When this is set to "True" by the policy owner, it indicates that the firewall policy has been audited. This attribute is used in the audit workflow for firewall policies. As this attribute is set to "False" whenever changes are made to a firewall policy or a related firewall rule, it is necessary to explicitly set it to "True" using an update operation.

**CAUTION**
The "auditid" parameter is a flag function that can be used to confirm whether the firewall policy has been audited. It has no effect on the operation of the firewall.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>Description of the firewall policy (Up to 1024 characters)</td>
</tr>
<tr>
<td>firewall_rules</td>
<td>List indicating the order of firewall rule ID application. The rules of firewalls are applied in the order they are displayed in this list.</td>
</tr>
<tr>
<td>id</td>
<td>Firewall policy ID</td>
</tr>
<tr>
<td>name</td>
<td>Name of the firewall policy (Up to 255 characters)</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether to share this firewall rule among all projects. This value is always &quot;False&quot;.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the firewall policy</td>
</tr>
<tr>
<td>availability_zone</td>
<td>Availability zone name</td>
</tr>
</tbody>
</table>

### 2.4.2.7 Show firewall policy details
Displays details of firewall policies.

**URI**
`/v2.0/fw/firewall_policies/{firewall_policy-id}`

**HTTP method**
GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
    "firewall_policy": {
```
Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>audited</td>
<td>When this is set to &quot;True&quot; by the policy owner, it indicates that the firewall policy has been audited. This attribute is used in the audit workflow for firewall policies. As this attribute is set to &quot;False&quot; whenever changes are made to a firewall policy or a related firewall rule, it is necessary to explicitly set it to &quot;True&quot; using an update operation.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the firewall policy (Up to 1024 characters)</td>
</tr>
<tr>
<td>firewall_rules</td>
<td>List indicating the order of firewall rule ID application. The rules of firewalls are applied in the order they are displayed in this list.</td>
</tr>
<tr>
<td>id</td>
<td>Firewall policy ID</td>
</tr>
<tr>
<td>name</td>
<td>Name of the firewall policy (Up to 255 characters) It is not required to be unique.</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether to share this firewall rule among all projects. This value is always &quot;False&quot;.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the firewall The only person who can specify a project identifier other than that of their own project is an administrator.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>Availability zone name</td>
</tr>
</tbody>
</table>

2.4.2.8 Create firewall policy

Creates a firewall policy.

URI

/v2.0/fw/firewall_policies

HTTP method

POST
## Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>audited</td>
<td>When this is set to &quot;True&quot; by the policy owner, it indicates that the firewall policy has been audited. This attribute is used in the audit workflow for firewall policies. As this attribute is set to &quot;False&quot; whenever changes are made to a firewall policy or a related firewall rule, it is necessary to explicitly set it to &quot;True&quot; using an update operation.</td>
<td>xsd:bool</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>Description of the firewall policy (Up to 255 characters)</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>firewall_rules</td>
<td>List indicating the order of firewall rule ID application. The rules of firewalls are applied in the order they are displayed in this list.</td>
<td>xsd:list</td>
<td>Optional</td>
</tr>
<tr>
<td>name</td>
<td>Name of the firewall policy (Up to 255 characters)</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>availability_zone</td>
<td>Availability zone name If the security group is omitted, the resource will be created in the default availability zone.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

### Example request

```json
{
  "firewall_policy": {
    "firewall_rules": [
      "8722e0e0-9cc9-4490-9660-8c9a5732fbb0"
    ],
    "name": "test-policy",
    "availability_zone": "AZ1"
  }
}
```

### Response status
<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```
{
    "firewall_policy": {
        "audited": false,
        "description": "",
        "firewall_rules": [
            "8722e0e0-9cc9-4490-9660-8c9a5732fbb0"
        ],
        "id": "c69933c1-b472-44f9-8226-30dc4f4d54c",
        "name": "test-policy",
        "shared": false,
        "tenant_id": "45977fa2bd7482098dd68dd8970117",
        "availability_zone": "AZ1"
    }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>audited</td>
<td>When this is set to &quot;True&quot; by the policy owner, it indicates that the firewall policy has been audited. This attribute is used in the audit workflow for firewall policies. As this attribute is set to &quot;False&quot; whenever changes are made to a firewall policy or a related firewall rule, it is necessary to explicitly set it to &quot;True&quot; using an update operation.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the firewall policy (Up to 1024 characters)</td>
</tr>
<tr>
<td>firewall_rules</td>
<td>List indicating the order of firewall rule ID application. The rules of firewalls are applied in the order they are displayed in this list.</td>
</tr>
<tr>
<td>id</td>
<td>Firewall policy ID</td>
</tr>
<tr>
<td>name</td>
<td>Name of the firewall policy (Up to 255 characters). It is not required to be unique.</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether to share this firewall rule among all projects. This value is always &quot;False&quot;.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the firewall policy. The only person who can specify a project identifier other than that of their own project is an administrator.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>Availability zone name</td>
</tr>
</tbody>
</table>

2.4.2.9 Update firewall policy

Updates the list of firewall policies.

**URI**

/v2.0/fw/firewall_policies/{firewall_policy-id}
### HTTP method
PUT

### Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>audited</td>
<td>When this is set to &quot;True&quot; by the policy owner, it indicates that the firewall policy has been audited. This attribute is used in the audit workflow for firewall policies. As this attribute is set to &quot;False&quot; whenever changes are made to a firewall policy or a related firewall rule, it is necessary to explicitly set it to &quot;True&quot; using an update operation.</td>
<td>xsd:bool</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>Description of the firewall policy (Up to 255 characters)</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>firewall_rules</td>
<td>List indicating the order of firewall rule ID application. The rules of firewalls are applied in the order they are displayed in this list.</td>
<td>xsd:list</td>
<td>Optional</td>
</tr>
<tr>
<td>name</td>
<td>Name of the firewall policy (Up to 255 characters)</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```json
{
    "firewall_policy": {
        "firewall_rules": [
            "a08ef905-0ff6-4784-8374-175ffe7dade",
            "8722e0e0-9cc9-4490-9660-8c9a5732fbb0"
        ]
    }
}
```

### Response status
### Status code

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

### Response body (normal status)

```json
{
  "firewall_policy": {
    "audited": false,
    "description": "",
    "firewall_rules": [
      "a08ef905-0ff6-4784-8374-175ffe7dade",
      "8722e0e0-9cc9-4490-9660-8c9a5732fbb0"
    ],
    "id": "c69933c1-b472-44f9-8226-30dc4fffd454c",
    "name": "test-policy",
    "shared": false,
    "tenant_id": "45977fa2bd7482098dd68d08970117",
    "availability_zone": "AZ1"
  }
}
```

### Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>audited</td>
<td>When this is set to &quot;True&quot; by the policy owner, it indicates that the firewall policy has been audited. This attribute is used in the audit workflow for firewall policies. As this attribute is set to &quot;False&quot; whenever changes are made to a firewall policy or a related firewall rule, it is necessary to explicitly set it to &quot;True&quot; using an update operation.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the firewall policy (Up to 1024 characters)</td>
</tr>
<tr>
<td>firewall_rules</td>
<td>List indicating the order of firewall rule ID application. The rules of firewalls are applied in the order they are displayed in this list.</td>
</tr>
<tr>
<td>id</td>
<td>Firewall policy ID</td>
</tr>
<tr>
<td>name</td>
<td>Name of the firewall policy (Up to 255 characters)</td>
</tr>
<tr>
<td></td>
<td>It is not required to be unique.</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether to share this firewall rule among all projects. This value is always &quot;False&quot;.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the firewall</td>
</tr>
<tr>
<td></td>
<td>The only person who can specify a project identifier other than that of their own project is an administrator.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>Availability zone name</td>
</tr>
</tbody>
</table>

### 2.4.2.10 Delete firewall policy

Deletes a firewall policy.
2.4.2.11 Insert firewall rule in firewall policy

Inserts a firewall rule in a firewall policy relative to the position of other rules.

**URI**

/v2.0/fw/firewall_policies/{firewall_policy-id}/insert_rule

**HTTP method**

PUT

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>firewall_rule_id</td>
<td>uuid of firewall rule for insertion.</td>
<td>xsd:uuid</td>
<td>Required</td>
</tr>
<tr>
<td>insert_after</td>
<td>Insert the specified firewall rule on firewall_rule_id after this rule.</td>
<td>xsd:uuid</td>
<td>Optional</td>
</tr>
<tr>
<td>insert_before</td>
<td>Insert the specified firewall rule on firewall_rule_id before this rule.</td>
<td>xsd:uuid</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```json
{
    "firewall_rule_id": "7bc34b8c-8d3b-4ada-a9c8-1f4c11c65692",
    "insert_after": "a08ef905-0ff6-4784-8374-175ffee7dade",
    "insert_before": ""
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Status code</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td></td>
<td>Bad Request error is returned in the case the rule information is missing.</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```
{
    "audited": false,
    "description": "",
    "firewall_list": [],
    "firewall_rules": ["a08ef905-0ff6-4784-8374-175fffe7dade",
                       "7bc34b8c-8d3b-4ada-a9c8-1f4c11c65692",
                       "8722e0e0-9cc9-4490-9660-8c9a5732fb0"],
    "id": "c69933c1-b472-44f9-8226-30dc4ff454c",
    "name": "test-policy",
    "shared": false,
    "tenant_id": "45977fa2dbd7482098dd68d0d8970117",
    "availability_zone": "AZ1"
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>audited</td>
<td>When set to True by the policy owner indicates that the firewall policy has been audited. This attribute is meant to aid in the firewall policy audit workflows. Each time the firewall policy or the associated firewall rules are changed, this attribute will be set to False and will have to be explicitly set to True through an update operation.</td>
</tr>
<tr>
<td>description</td>
<td>Human readable description for the firewall policy (1024 character limit)</td>
</tr>
<tr>
<td>firewall_list</td>
<td>The list of firewall uuid that associates with this firewall policy. These firewalls will implement the rules contained in this firewall policy.</td>
</tr>
<tr>
<td>firewall_rules</td>
<td>This is an ordered list of firewall rule uuids. The firewall applies the rules in the order in which they appear in this list.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the firewall policy object.</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall policy (255 character limit). Does not have to be unique.</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether this firewall rule is shared across all projects. This value is always False.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the firewall policy. Only admin users can specify a project identifier other than their own.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>
2.4.2.12 Remove firewall rule from firewall policy

Removes a firewall rule from a firewall policy.

URI

```
/v2.0/fw/firewall_policies/{firewall_policy-id}/remove_rule
```

HTTP method

PUT

Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>firewall_rule_id</td>
<td>uuid of firewall rule for removal.</td>
<td>xsd:uuid</td>
<td>Required</td>
</tr>
</tbody>
</table>

Example request

```
{
    "firewall_rule_id": "7bc34b8c-8d3b-4ada-a9c8-1f4c11c65692"
}
```

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Error response codes

- Bad Request error is returned if the rule information is missing or when a firewall rule is tried to be removed from a firewall policy to which it is not associated.

Response body (normal status)

```
{
    "audited": false,
    "description": "",
    "firewall_list": [],
    "firewall_rules": [
        "a08ef905-0ff6-4784-8374-175fff7dade",
        "872260e0-9cc9-4490-9660-8c9a5732fb0"
    ],
    "id": "e69933c1-b472-44f9-8226-30dc4f4d454c",
    "name": "test-policy",
    "shared": false,
    "tenant_id": "45977fa2db07482098dd68d0d8970117",
    "availability_zone": "AZ1"
}
```
### Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>audited</td>
<td>When set to True by the policy owner indicates that the firewall policy has been audited. This attribute is meant to aid in the firewall policy audit workflows. Each time the firewall policy or the associated firewall rules are changed, this attribute will be set to False and will have to be explicitly set to True through an update operation.</td>
</tr>
<tr>
<td>description</td>
<td>Human readable description for the firewall policy (1024 character limit)</td>
</tr>
<tr>
<td>firewall_list</td>
<td>The list of firewall uuid that associates with this firewall policy. These firewalls will implement the rules contained in this firewall policy.</td>
</tr>
<tr>
<td>firewall_rules</td>
<td>This is an ordered list of firewall rule uuids. The firewall applies the rules in the order in which they appear in this list.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the firewall policy object.</td>
</tr>
<tr>
<td>shared</td>
<td>Indicates whether this firewall rule is shared across all projects. This value is always False.</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall policy (255 character limit). Does not have to be unique.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the firewall policy. Only admin users can specify a project</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

### 2.4.2.13 List firewalls

Lists firewalls.

**URI**

/v2.0/fw/firewalls

**HTTP method**

GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```
{
    "firewalls": [
        {
            "status": "ACTIVE",
            "router_ids": [
                "fe00194c-d73c-4b46-b94a-622bf28fc9e2"
            ]
        }
    ]
}
```
### Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the firewall. If false (down), firewall does not forward packets and will drop all traffic to/from VMs behind the firewall.</td>
</tr>
<tr>
<td>Description</td>
<td>Human readable description for the firewall (1024 character limit).</td>
</tr>
<tr>
<td>firewall_policy_id</td>
<td>The firewall policy uuid that this firewall is associated with. This firewall will implement the rules contained in the firewall policy represented by this uuid.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the firewall object.</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall (255 character limit). Does not have to be unique.</td>
</tr>
<tr>
<td>status</td>
<td>Indicates whether firewall resource is currently operational. Possible values include: ACTIVE, INACTIVE, DOWN, ERROR, PENDING_CREATE, PENDING_UPDATE, or PENDING_DELETE.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the firewall. Only admin users can specify a project identifier other than their own.</td>
</tr>
<tr>
<td>router_id (not recommended)</td>
<td>The ID of the router that this firewall applied.</td>
</tr>
<tr>
<td>router_ids</td>
<td>The IDs of the routers that this firewall applied.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The IDs of the routers that this firewall applied.</td>
</tr>
</tbody>
</table>

**CAUTION**

- router_id is not a recommended parameter. It only remains to enable smooth migration to the new parameter router_ids. You should use router_ids. router_id may be deleted in the future.
- The router_id attribute and the router_ids attribute are only included in the response of each firewall when either of them is enabled.

#### 2.4.2.14 Shows firewall details.

Shows firewall details.

**URI**

```
/v2.0/fw/firewalls/{firewall-id}
```
HTTP method
GET

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```
{
    "firewall": {
        "status": "ACTIVE",
        "router_ids": [
            "fe00194c-d73c-4b46-b94a-622bf28fc9e2"
        ],
        "name": "",
        "admin_state_up": true,
        "tenant_id": "45977fa22d7482098dd68d0d970117",
        "firewall_policy_id": "c6933c1-b472-4f9-8226-30dc4ff454c",
        "id": "3b0ef8f4-82c7-44d4-a4fb-6177f9a21977",
        "description": "",
        "availability_zone": "AZ1"
    }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the firewall. If false (down), firewall does not forward packets and will drop all traffic to/from VMs behind the firewall.</td>
</tr>
<tr>
<td>description</td>
<td>Human readable description for the firewall (1024 character limit).</td>
</tr>
<tr>
<td>firewall_policy_id</td>
<td>The firewall policy uuid that this firewall is associated with. This firewall will implement the rules contained in the firewall policy represented by this uuid.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the firewall object.</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall (255 character limit). Does not have to be unique.</td>
</tr>
<tr>
<td>status</td>
<td>Indicates whether firewall resource is currently operational. Possible values include: ACTIVE, INACTIVE, DOWN, ERROR, PENDING_CREATE, PENDING_UPDATE, or PENDING_DELETE.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the firewall. Only admin users can specify a project identifier other than their own.</td>
</tr>
<tr>
<td>router_id (not recommended)</td>
<td>The ID of the router that this firewall applied.</td>
</tr>
<tr>
<td>router_ids</td>
<td>The IDs of the routers that this firewall applied.</td>
</tr>
</tbody>
</table>
router_id is not a recommended parameter. It only remains to enable smooth migration to the new parameter router_ids. You should use router_ids. router_id may be deleted in the future.

The router_id attribute and the router_ids attribute are only included in the response of the relevant firewall when either of them is enabled.

2.4.2.15 Create firewall

Creates a firewall.

**URI**

/v2.0/fw/firewalls

**HTTP method**

POST

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the firewall. If false (down), firewall does not forward packets and will drop all traffic to/from VMs behind the firewall.</td>
<td>xsd:bool</td>
<td>Optional</td>
</tr>
<tr>
<td>firewall_policy_id</td>
<td>The firewall policy uuid that this firewall is associated with. This firewall will implement the rules contained in the firewall policy represented by this uuid.</td>
<td>csapi:uuid</td>
<td>Required</td>
</tr>
<tr>
<td>router_id</td>
<td>The ID of the router that this firewall be applied. If you specify both router_ids and router_id at the same time, the resource will be created at all routers of router_ids.</td>
<td>xsd:string</td>
<td>Optional (not recommended)</td>
</tr>
<tr>
<td>router_ids</td>
<td>The list of IDs for the routers that this firewall be applied. If you specify both router_ids and router_id at the same time, the resource will be created at all routers of router_ids. If you do not specify either router_ids or router_id, the resource will be created at all routers in the project at that time.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>----------------</td>
<td>------------------------------------------------------------------------------</td>
<td>------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Description</td>
<td>Human readable description for the firewall (255 character limit).</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall (255 character limit). Does not have to be unique.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name. If you do not specify this, the resource will be created in the default Availability Zone.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```
{
    "firewall": {
        "router_ids": [
            "fe00194c-d73c-4b46-b94a-622bf28fc9e2"
        ],
        "admin_state_up": true,
        "firewall_policy_id": "c69933c1-b472-44f9-8226-30dc4ff454c",
        "availability_zone": "AZ1"
    }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>itemNotFound (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```
{
    "firewall": {
        "status": "PENDING_CREATE",
        "router_ids": [
            "fe00194c-d73c-4b46-b94a-622bf28fc9e2"
        ],
        "name": ""
    }
}
```
"admin_state_up": true,
"tenant_id": "45977fa2dbd7482098dd68d0d8970117",
"firewall_policy_id": "c69933c1-b472-44f9-8226-30dc4ffd454c",
"id": "3b0ef8f4-82c7-44d4-a4fb-6177f9a21977",
"description": "",
"availability_zone": "AZ1"
"}

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the firewall. If false (down), firewall does not forward packets and will drop all traffic to/from VMs behind the firewall.</td>
</tr>
<tr>
<td>Description</td>
<td>Human readable description for the firewall (1024 character limit).</td>
</tr>
<tr>
<td>firewall_policy_id</td>
<td>The firewall policy uuid that this firewall is associated with. This firewall will implement the rules contained in the firewall policy represented by this uuid.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the firewall object.</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall (255 character limit). Does not have to be unique.</td>
</tr>
<tr>
<td>status</td>
<td>Indicates whether firewall resource is currently operational. Possible values include: ACTIVE, INACTIVE, DOWN, ERROR, PENDING_CREATE, PENDING_UPDATE, or PENDING_DELETE.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the firewall. Only admin users can specify a project identifier other than their own.</td>
</tr>
<tr>
<td>router_id (not recommended)</td>
<td>The ID of the router that this firewall applied.</td>
</tr>
<tr>
<td>router_ids</td>
<td>The list of IDs for routers that this firewall applied</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

**CAUTION**

router_id is not a recommended parameter. It only remains to enable smooth migration to the new parameter router_ids. You should use router_ids. router_id may be deleted in the future.

**CAUTION**

The router_id attribute and the router_ids attribute are only included in the response of the relevant firewall when either of them is enabled.

### 2.4.2.16 Update firewall

Updates a firewall, provided status is not PENDING_*.

**URI**

/v2.0/fw/firewalls/{firewall-id}

**HTTP method**

PUT
### Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the firewall. If false (down), firewall does not forward packets and will drop all traffic to/from VMs behind the firewall.</td>
<td>xsd:bool</td>
<td>Optional</td>
</tr>
<tr>
<td>firewall_policy_id</td>
<td>The firewall policy uuid that this firewall is associated with. This firewall will implement the rules contained in the firewall policy represented by this uuid.</td>
<td>csapi:uuid</td>
<td>Optional</td>
</tr>
<tr>
<td>router_id</td>
<td>The ID of the router that this firewall be applied. If you do not specify this, the resource will be created at all routers in the project. If router_ids has already been specified for the firewall, router_id cannot be set.</td>
<td>xsd:string</td>
<td>Optional (not recommended)</td>
</tr>
<tr>
<td>router_ids</td>
<td>The IDs of the routers that this firewall be applied. If you specify both router_ids and router_id at the same time, the resource will be created at all routers of router_ids.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>Human readable description for the firewall (255 character limit).</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall (255 character limit). Does not have to be unique.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**CAUTION**

router_id is not a recommended parameter. It only remains to enable smooth migration to the new parameter router_ids. You should use router_ids. router_id may be deleted in the future.

**CAUTION**

When the router_ids attribute is specified in the request parameters used to update a firewall with the router_id attribute specified, the router_id attribute will be disabled and the router_ids attribute will be enabled.

**Example request**

```
{
  "firewall": {
    "admin_state_up": "false"
  }
}
```

**Response status**
<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
  "firewall": {
    "status": "PENDING_UPDATE",
    "router_ids": ["fe00194c-d73c-4b46-b94a-622bf28fc9e2"],
    "name": "",
    "admin_state_up": false,
    "tenant_id": "45977fa2dbd7482098dd68d0d8970117",
    "firewall_policy_id": "c69933c1-b472-44f9-8226-30dc4fd454c",
    "id": "3b0ef8f4-82c7-44d4-a4fb-6177f9a21977",
    "description": "",
    "availability_zone": "AZ1"
  }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the firewall. If false (down), firewall does not forward packets and will drop all traffic to/from VMs behind the firewall.</td>
</tr>
<tr>
<td>description</td>
<td>Human readable description for the firewall (1024 character limit).</td>
</tr>
<tr>
<td>firewall_policy_id</td>
<td>The firewall policy uuid that this firewall is associated with. This firewall will implement the rules contained in the firewall policy represented by this uuid.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the firewall object.</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the firewall (255 character limit). Does not have to be unique.</td>
</tr>
<tr>
<td>status</td>
<td>Indicates whether firewall resource is currently operational. Possible values include: ACTIVE, INACTIVE, DOWN, ERROR, PENDING_CREATE, PENDING_UPDATE, or PENDING_DELETE.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the firewall. Only admin users can specify a project identifier other than their own.</td>
</tr>
<tr>
<td>router_id (not recommended)</td>
<td>The ID of the router that this firewall applied.</td>
</tr>
<tr>
<td>router_ids</td>
<td>The IDs of the routers that this firewall applied.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>
**2.4.2.17 Update firewall (Connection reset)**

Connection reset for applying firewall rule to the current communication immediately.

**URI**

`/v2.0/fw/firewalls/{firewall-id}/reset_connections`

**Description of the URI:**

All connections managed by routers that use the specified firewall will be deleted a few seconds after the API response. This reflects the rules set for the firewall to communication. Existing communications that were in progress via routers that use the specified firewall, including communications permitted by it, will be disconnected at the time. If any communication permission rules exist, the disconnection will be temporary, so communication will be resumed.

**HTTP method**

PUT

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>target</td>
<td>null</td>
<td>null</td>
<td>Required</td>
</tr>
</tbody>
</table>

**Example request**

```
{
    "target": null
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td></td>
<td>Firewall xxx could not be found</td>
</tr>
<tr>
<td>Conflict (409)</td>
<td>Error response codes</td>
</tr>
<tr>
<td></td>
<td>Operation cannot be performed since associated Firewall xxx is in (*)</td>
</tr>
<tr>
<td></td>
<td>(*) . . . PENDING_STATE or PENDING_UPDATE or PENDING_DELETE</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
Response body (normal status)

```
{
  "target": null
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>target</td>
<td>Connection deletion target (null indicates that all firewall connections were deleted)</td>
</tr>
</tbody>
</table>

### 2.4.2.18 Delete firewall

Deletes a firewall.

**URI**

`/v2.0/fw/firewalls/{firewall-id}`

**HTTP method**

DELETE

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error Response Codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error Response Codes</td>
</tr>
<tr>
<td>conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
Part 3: VPN

Topics:

- Common information
- Common for VPNs
- SSL-VPN V2
- IPsec VPN
3.1 Common information

3.1.1 General requirements

This section describes general requirements to use this API.

- Specify the name and description input parameters using up to 255 characters.
- When executing the API that lists the resources, only some of the availability zone information may be returned. If this happens, it is assumed that infrastructure maintenance is in progress, so wait for a few moments (at least one minute) and then execute the API again.
- Set the version of the IP address to be specified in the request parameter to "4"("ip_version": 4), and specify the IP address (XXX_ip_address) in IPv4 format.

3.1.2 Common API items

Request header

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content-Type</td>
<td>application/json</td>
<td>-</td>
</tr>
<tr>
<td>Accept</td>
<td>application/json</td>
<td>-</td>
</tr>
<tr>
<td>X-Auth-Token</td>
<td>authentication token</td>
<td>-</td>
</tr>
</tbody>
</table>

3.1.3 Common API error codes

Example common API error codes

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>500,400,other codes possible</td>
<td>computeFault</td>
</tr>
<tr>
<td>501</td>
<td>notImplemented</td>
</tr>
<tr>
<td>503</td>
<td>serverCapacityUnavailable</td>
</tr>
<tr>
<td>503</td>
<td>serviceUnavailable</td>
</tr>
<tr>
<td>400</td>
<td>badRequest</td>
</tr>
<tr>
<td>401</td>
<td>unauthorized</td>
</tr>
<tr>
<td>403</td>
<td>forbidden</td>
</tr>
<tr>
<td>403</td>
<td>resizeNotAllowed</td>
</tr>
<tr>
<td>404</td>
<td>itemNotFound</td>
</tr>
<tr>
<td>405</td>
<td>badMethod</td>
</tr>
<tr>
<td>409</td>
<td>backupOrResizeInProgress</td>
</tr>
<tr>
<td>409</td>
<td>buildInProgress</td>
</tr>
<tr>
<td>Status code</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>409</td>
<td>conflictingRequest</td>
</tr>
<tr>
<td>413</td>
<td>overLimit</td>
</tr>
<tr>
<td>413</td>
<td>badMediaType</td>
</tr>
</tbody>
</table>

CAUTION

• If the user has insufficient privileges to issue the target API when issuing the API for showing (Show) or deleting (Delete) resources, the status code 404 may be returned.
• If the user has insufficient privileges to issue the target API when issuing the API for updating (Update) resources, the status code 403 may be returned.
• If the user has insufficient privileges to issue the target API when issuing the API for listing (List) resources, the status code 200 will be returned and a null array will be set in the body. If there are resources with the shared attribute set to “True”, information on the target resources only will be returned.

3.1.4 Generate URLs when using APIs

The APIs require URLs of the network type, which can be generated by the identity service on the Service catalog.

The endpoint URL is returned in the following format by the identity service.

```
https://networking.***.cloud.global.fujitsu.com
*** indicates the region identifier
```

Join the path name of each API in the host section of the endpoint URL, and create the URL.

3.1.5 API options

3.1.5.1 API options

Two options are available for APIs that retrieve resource information (List, Show).

CAUTION

SSL-VPN does not support two types of parameters.

3.1.5.2 filter

Filters can be specified to retrieve only resources matching the specified attributes from the list of resource information to be retrieved.

Multiple attributes can be specified using AND as a condition.

This option can only be used for the List API.

Execution example:

• Retrieve the network with the name "private"
  GET /v2.0/vpn/vpnservices?name=private

• To filter using multiple attributes with AND. Retrieve the network with the name "private" and that belongs to the AZ1 availability zone.
  GET /v2.0/vpn/vpnservices?name=private?availability_zone=AZ1
3.1.5.3 Column Selection

The attributes that are retrieved from the resource information can be restricted. This option can only be used for the List and Show APIs.

Execution example:

• List only the id attribute of networks
  GET /v2.0/vpn/vpnservices?fields=id

• To retrieve multiple attributes (id and name)
  GET /v2.0/vpn/vpnservices?fields=id&fields=name
3.2 Common for VPNs

3.2.1 API List

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GET /v2.0/vpn/vpnservices</td>
<td>Lists VPN services</td>
</tr>
<tr>
<td>2</td>
<td>GET /v2.0/vpn/vpnservices/{service-id}</td>
<td>Shows details about the specified VPN service</td>
</tr>
<tr>
<td>3</td>
<td>POST /v2.0/vpn/vpnservices</td>
<td>Creates a VPN service</td>
</tr>
<tr>
<td>4</td>
<td>PUT /v2.0/vpn/vpnservices/{service-id}</td>
<td>Updates the specified VPN service that is not in a PENDING state</td>
</tr>
<tr>
<td>5</td>
<td>DELETE /v2.0/vpn/vpnservices/{service-id}</td>
<td>Deletes the specified VPN service</td>
</tr>
</tbody>
</table>

3.2.2 API details

3.2.2.1 List VPN services

Lists VPN services.

URI

/v2.0/vpn/vpnservices

HTTP method

GET

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Forbidden (403)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
    "vpnservices": [
        {
            "router_id": "ec8619be-0ba8-4955-8835-3b49dd76f89"
        }
    ]
}
```
"status": "PENDING_CREATE",
"name": "myservice",
"admin_state_up": true,
"subnet_id": "f4fb4528-ed93-467c-a57b-11c7ea9f963e",
"tenant_id": "cc81365fe364111a901e90491fe1330",
"id": "9faaf49f-dd89-4e39-a8c6-101839aa49bc",
"description": "",
"availability_zone": "AZ1"
}
]

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>router_id</td>
<td>Router ID to which the VPN service is inserted.</td>
</tr>
<tr>
<td>status</td>
<td>Indicates whether IPsec VPN service is currently operational. Possible values include: ACTIVE, DOWN, BUILD, ERROR, PENDING_CREATE, PENDING_UPDATE, or PENDING_DELETE.</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the VPN service. Does not have to be unique.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the vpnservice. If false (down), port does not forward packets.</td>
</tr>
<tr>
<td>subnet_id</td>
<td>The subnet on which the project wants the VPN service.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the VPN service. Only admin users can specify a project identifier other than their own.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the VPN Service object.</td>
</tr>
<tr>
<td>description</td>
<td>Human readable description for the VPN service.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

3.2.2.2 Show VPN service details

Shows details about a specified VPN service.

**URI**

/v2.0/vpn/vpnservices/{service-id}

**HTTP method**

GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
Response body (normal status)

```json
{
  "vpnservice": {
    "router_id": "ec8619be-0ba8-4955-8835-3b49dd76f89",
    "status": "PENDING_CREATE",
    "name": "myservice",
    "admin_state_up": true,
    "subnet_id": "f4fb4528-ed93-467c-a57b-11c7ea9f963e",
    "tenant_id": "ccb81365fe36411a9011e90491fe1330",
    "id": "9faaf49f-dd99-4e39-a8c6-101839aa49bc",
    "description": "",
    "availability_zone": "AZ1"
  }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>router_id</td>
<td>Router ID to which the VPN service is inserted.</td>
</tr>
<tr>
<td>status</td>
<td>Indicates whether IPsec VPN service is currently operational. Possible values include: ACTIVE, DOWN, BUILD, ERROR, PENDING_CREATE, PENDING_UPDATE, or PENDING_DELETE.</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the VPN service. Does not have to be unique.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the vpnservice. If false (down), port does not forward packets.</td>
</tr>
<tr>
<td>subnet_id</td>
<td>The subnet on which the project wants the VPN service.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the VPN service. Only admin users can specify a project identifier other than their own.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the VPN Service object.</td>
</tr>
<tr>
<td>description</td>
<td>Human readable description for the VPN service.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
</tbody>
</table>

3.2.2.3 Create VPN service

Creates a VPN service.

**URI**

/v2.0/vpn/vpnservices

**HTTP method**

POST

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>subnet_id</td>
<td>The subnet on which the project wants the VPN service.</td>
<td>uuid-str</td>
<td>Required</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------------------------------------------</td>
<td>----------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>router_id</td>
<td>Router ID to which the VPN service is inserted.</td>
<td>uuid-str</td>
<td>Required</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the VPN service. Does not have to be unique.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the vpnservice. If false (down), port does not forward packets.</td>
<td>bool</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>Human readable description for the VPN service.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name. If you do not specify this, the resource will be created in the default Availability Zone.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```json
{
    "vpnservice": {
        "subnet_id": "f4fb4528-ed93-467c-a57b-11c7ea9f963e",
        "router_id": "ec8619be-0ba8-4955-8835-3b49d076f89",
        "name": "myservice",
        "admin_state_up": true,
        "availability_zone": "AZ1"
    }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
    "vpnservice": {
        "subnet_id": "f4fb4528-ed93-467c-a57b-11c7ea9f963e",
        "router_id": "ec8619be-0ba8-4955-8835-3b49d076f89",
        "status": "PENDING_CREATE",
        "name": "myservice",
        "admin_state_up": true,
        "subnet_id": "f4fb4528-ed93-467c-a57b-11c7ea9f963e",
        "network_id": "cbb81365fe36411a9011e90491fe1330",
        "id": "9faaf49f-dd89-4e39-a8c6-101839aa49bc",
        "description": "",
        "availability_zone": "AZ1"
    }
}
```
### 3.2.2.4 Update VPN service

Updates a VPN service, provided status is not indicating a PENDING_* state.

**URI**

```
/v2.0/vpn/vpnservices/{service-id}
```

**HTTP method**

`PUT`

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Human readable name for the VPN service. Does not have to be unique.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the vpnservice. If false (down), port does not forward packets.</td>
<td>bool</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>Human readable description for the VPN service.</td>
<td>string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```json
{
  "vpnservice": {
    "description": "Updated description"
  }
}
```
Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
    "vpnservice": {
        "router_id": "881b7b30-4efb-407e-a162-5630a7af3595",
        "status": "ACTIVE",
        "name": "myvpn",
        "admin_state_up": true,
        "subnet_id": "25f8a35c-82d5-4f55-a45b-6965936b33f6",
        "tenant_id": "26de9cd6cae94c8cb9f79d660d628e1f",
        "id": "41bfebf97-af4e-4f6b-a5d3-4678859d2485",
        "description": "Updated description",
        "availability_zone": "AZ1"
    }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>router_id</td>
<td>Router ID to which the VPN service is inserted.</td>
</tr>
<tr>
<td>status</td>
<td>Indicates whether IPsec VPN service is currently operational. Possible values include: ACTIVE, DOWN, BUILD, ERROR, PENDING_CREATE, PENDING_UPDATE, or PENDING_DELETE.</td>
</tr>
<tr>
<td>name</td>
<td>Human readable name for the VPN service. Does not have to be unique.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the vpnservice. If false (down), port does not forward packets.</td>
</tr>
<tr>
<td>subnet_id</td>
<td>The subnet on which the project wants the VPN service.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Owner of the VPN service. Only admin users can specify a project identifier other than their own.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the VPN Service object.</td>
</tr>
<tr>
<td>description</td>
<td>Human readable description for the VPN service.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

3.2.2.5 Delete VPN service

Deletes a VPN service.

URI

/v2.0/vpn/vpnservices/{service-id}
HTTP method
DELETE

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
3.3 SSL-VPN V2

3.3.1 API List

### SSL-VPN-V2

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GET /v2.0/vpn/ssl-vpn-v2-connections</td>
<td>Lists SSL-VPN-V2 connections</td>
</tr>
<tr>
<td>2</td>
<td>GET /v2.0/vpn/ssl-vpn-v2-connections/{sslvpnv2connection-id}</td>
<td>Shows details for a specified SSL VPN V2 Connection</td>
</tr>
<tr>
<td>3</td>
<td>POST /v2.0/vpn/ssl-vpn-v2-connections</td>
<td>Create SSL VPN V2 Connection</td>
</tr>
<tr>
<td>4</td>
<td>PUT /v2.0/vpn/ssl-vpn-v2-connections/{sslvpnv2connection-id}</td>
<td>Update SSL VPN V2 Connection</td>
</tr>
<tr>
<td>5</td>
<td>DELETE /v2.0/vpn/ssl-vpn-v2-connections/{sslvpnv2connection-id}</td>
<td>Delete SSL VPN V2 Connection</td>
</tr>
</tbody>
</table>

3.3.2 Notes

Note the following when using the SSL-VPN-V2 feature:
- Install OpenVPN client on the client.
- Obtain the following certificates, required for building SSL-VPN-V2 connection environments and setting up clients:
  - CA certificate of the server
  - Certificate of the client
  - Secret key of the client

3.3.3 API details

3.3.3.1 List SSL VPN V2 Connections

Lists SSL VPN V2 Connections

**URI**
/v2.0/vpn/ssl-vpn-v2-connections

**HTTP method**
GET
Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Forbidden (403)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
    "ssl_vpn_v2_connections": [
        {
            "id": "2322fdea-783d-923b-cc4e-abc023ed874f",
            "tenant_id": "1219eaa01e0e254dac4f08c9123ae9cd",
            "name": "conn1",
            "status": "DOWN",
            "client_address_pool_cidrs": ["10.8.0.0/24", "10.8.1.0/24"],
            "credential_id": "434a9843-ecc0-4653-8f3a-e604d97aad0c",
            "admin_state_up": true,
            "vpnservice_id": "cc91b7af-8304-4aff-ad07-86bdaaee2e93",
            "availability_zone": "AZ1",
            "protocol": "udp",
            "security_groups": ["8060f6ab-e327-4e01-9ccf-f1432c2b2c9"],
            "access_points": [
                {
                    "external_address": "172.16.1.10",
                    "internal_gateway": "10.9.1.24",
                    "client_address_pool_cidr": "10.8.0.0/24",
                    "floatingip": "11bb315e-a0cb-4de3-acfc-0052240722e"
                },
                {
                    "external_address": "172.16.1.11",
                    "internal_gateway": "10.9.1.25",
                    "client_address_pool_cidr": "10.8.1.0/24",
                    "floatingip": "53a14e86-4e9e-4f91-8c0d-ed934294269e"
                }
            ]
        },
        {
            "id": "86445a53-c95c-4203-8382-6c88b768ca0",
            "tenant_id": "1219eaa01e0e254dac4f08c9123ae9cd",
            "name": "conn2",
            "status": "ACTIVE",
            "client_address_pool_cidrs": ["10.8.2.0/24", "10.8.3.0/24"],
            "credential_id": "434a9843-ecc0-4653-8f3a-e604d97aad0c",
            "admin_state_up": true,
            "vpnservice_id": "2b0cff43-af8f-4605-8f0b-ad06517474d5",
            "availability_zone": "AZ2",
            "protocol": "udp",
            "security_groups": ["2874b9e4-7fa7-4777-bb22-a26a30d7afe37b"],
            "access_points": [
                {
                    "external_address": "172.16.2.10",
                    "internal_gateway": "10.9.2.24",
                    "client_address_pool_cidr": "10.8.2.0/24",
                    "floatingip": "cbad162e-e9f9-48d6-9beb-ad06517474d5"
                },
                {
                    "external_address": "172.16.2.11",
                    "internal_gateway": "10.9.2.25",
                    "client_address_pool_cidr": "10.8.3.0/24",
                    "floatingip": "f1ef93fb-6fde-4f91-8c0d-ad934294269e"
                }
            ]
        }
    ]
}
```
### Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the SSL VPN V2 connection.</td>
</tr>
<tr>
<td>name</td>
<td>Name of the SSL VPN V2 connection.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the SSL VPN V2 connection. If false (down), port does not forward packets.</td>
</tr>
<tr>
<td>client_address_pool_cidrs</td>
<td>The list of &quot;client_address_pool_cidr&quot;.</td>
</tr>
<tr>
<td>credential_id</td>
<td>UUID for VPNCredential Container on keymanagement. When you did not specify this parameter when creating the resource, this value returns 'null'.</td>
</tr>
<tr>
<td>vpnservice_id</td>
<td>UUID for VPNService</td>
</tr>
<tr>
<td>id</td>
<td>UUID for SSL VPN V2 connection Object.</td>
</tr>
<tr>
<td>status</td>
<td>Indicates whether the SSL VPN V2 connection is currently operational. Possible values include: ACTIVE DOWN PENDING_CREATE PENDING_UPDATE PENDING_DELETE ERROR</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
<tr>
<td>protocol</td>
<td>Communication protocol used by VPN connection: udp, tcp</td>
</tr>
<tr>
<td>security_groups</td>
<td>Security groups set to SSL VPN V2 Server.</td>
</tr>
<tr>
<td>access_points</td>
<td>Information for accessing SSL VPN V2 connection. This consists of &quot;external_address&quot;, &quot;internal_gateway&quot;, &quot;client_address_pool_cidr&quot; and &quot;floatingip&quot;.</td>
</tr>
<tr>
<td>external_address</td>
<td>External IP address to connect to SSL VPN V2 Server from SSL-VPN clients.</td>
</tr>
<tr>
<td>internal_gateway</td>
<td>Gateway IP address to connect to remote SSL-VPN clients.</td>
</tr>
<tr>
<td>client_address_pool_cidr</td>
<td>Client address pool subnet which will be used by SSL-VPN client.</td>
</tr>
<tr>
<td>floatingip</td>
<td>Floating IP associates to the port of SSL VPN V2 Server. When you did not specify the parameter &quot;floatingips&quot; when creating the resource, this value returns 'null'.</td>
</tr>
</tbody>
</table>

### 3.3.3.2 Shows details for a specified SSL VPN V2 Connection

Shows details for a specified SSL VPN V2 Connection.

**URI**

/v2.0/vpn/ssl-vpn-v2-connections/{sslvpnv2connection-id}

Description of the URI:

{sslvpnv2connection-id} : Unique identifier for the SSL VPN V2 Connection.
HTTP method
GET

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
    "ssl_vpn_v2_connection": {
        "id": "2322fdea-783d-923b-cc4e-abc023ed874f",
        "tenant_id": "1219ecaa01e0254dac4f-08c9123aefcd",
        "name": "conn1",
        "status": "DOWN",
        "client_address_pool_cidrs": ["10.8.0.0/24", "10.8.1.0/24"],
        "credential_id": "434a9843-ecc0-4653-8f3a-e604d9d7aadc",
        "admin_state_up": true,
        "vpnservice_id": "cc91b7af-8304-4aff-ad07-86bdbaae2e93",
        "availability_zone": "AZ1",
        "protocol": "udp",
        "security_groups": ["8060f6ab-e327-4e01-9ccd-f1432cfab2c9"],
        "access_points": [
            {
                "external_address": "172.16.1.10",
                "internal_gateway": "10.9.1.24",
                "client_address_pool_cidr": "10.8.0.0/24",
                "floatingip": "11bb315e-a0cb-4d9e-4de3-acf6-00522e4072e"
            },
            {
                "external_address": "172.16.1.11",
                "internal_gateway": "10.9.1.25",
                "client_address_pool_cidr": "10.8.1.0/24",
                "floatingip": "53a1d86-4396-4f91-8c0d-ed934294269e"
            }
        ]
    }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the SSL VPN V2 connection.</td>
</tr>
<tr>
<td>name</td>
<td>Name of the SSL VPN V2 connection.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the SSL VPN V2 connection. If false (down), port does not forward packets.</td>
</tr>
<tr>
<td>client_address_pool_cidrs</td>
<td>The list of 'client_address_pool_cidr'.</td>
</tr>
<tr>
<td>credential_id</td>
<td>UUID for VPNCredential Container on keymanagement. When you did not specify this parameter when creating the resource, this value returns 'null'.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>vpnservice_id</td>
<td>UUID for VPNService</td>
</tr>
<tr>
<td>id</td>
<td>UUID for SSL VPN V2 connection Object.</td>
</tr>
<tr>
<td>status</td>
<td>Indicates whether the SSL VPN V2 connection is currently operational. Possible values include: ACTIVE DOWN PENDING_CREATE PENDING_UPDATE PENDING_DELETE ERROR</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
<tr>
<td>protocol</td>
<td>Communication protocol used by VPN connection: udp, tcp</td>
</tr>
<tr>
<td>security_groups</td>
<td>Security groups set to SSL VPN V2 Server.</td>
</tr>
<tr>
<td>access_points</td>
<td>Information for accessing SSL VPN V2 connection. This consists of &quot;external_address&quot;, &quot;internal_gateway&quot;, &quot;client_address_pool_cidr&quot; and &quot;floatingip&quot;.</td>
</tr>
<tr>
<td>external_address</td>
<td>External IP address to connect to SSL VPN V2 Server from SSL-VPN clients. internal_gateway Gateway IP address to connect to remote SSL-VPN clients.</td>
</tr>
<tr>
<td>client_address_pool_cidr</td>
<td>Client address pool subnet which will be used by SSL-VPN client.</td>
</tr>
<tr>
<td>floatingip</td>
<td>Floating IP associates to the port of SSL VPN V2 Server. When you did not specify the parameter &quot;floatingips&quot; when creating the resource, this value returns 'null'.</td>
</tr>
</tbody>
</table>

### 3.3.3.3 Create SSL VPN V2 Connection

Creates an SSL VPN V2 Connection.

**URI**

/v2.0/vpn/ssl-vpn-v2-connections

**HTTP method**

POST

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Name of the SSL VPN V2 connection. (default: &quot;&quot;)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the SSL VPN V2 connection. If false (down), SSL VPN V2 connection does not forward packets (default: true)</td>
<td>bool</td>
<td>Optional</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>client_address_pool_cidrs</td>
<td>Client address pool subnets which will be used by SSL-VPN client. When you make this resource redundant, specify two subnets. Otherwise, specify one.</td>
<td>cidr list</td>
<td>Required</td>
</tr>
<tr>
<td>credential_id</td>
<td>UUID for VPNCredential Container on keymanagement. When you use client certificate offered by K5 to connect SSL-VPN, please omit this parameter.</td>
<td>uuid-str</td>
<td>Optional</td>
</tr>
<tr>
<td>vpnservice_id</td>
<td>UUID for VPNService</td>
<td>uuid-str</td>
<td>Required</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name. If you do not specify this, the resource will be created in the default Availability Zone. (default: default Availability Zone selected)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>protocol</td>
<td>Communication protocol used by VPN connection: udp, tcp (default: &quot;udp&quot;)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>security_groups</td>
<td>Security groups set to SSL VPN V2 Server. The number of security groups that can be registered is 6 or less. (default: The security group that allows all traffic is added.)</td>
<td>uuid-str list</td>
<td>Optional</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>floatingips</td>
<td>Floating IPs associate to the port of SSL VPN V2 Server. When you make this resource redundant, specify two floating IPs. Otherwise, specify one. When you do not specify this parameter, the IP addresses of that port will be allocated by K5.</td>
<td>uuid-str list</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```json
{
    "ssl_vpn_v2_connection": {
        "name": "conn1",
        "client_address_pool_cidrs": ["10.8.0.0/24", "10.8.1.0/24"],
        "admin_state_up": true,
        "credential_id": "434a9843-ecc0-4653-8f3a-e604d9d7aad9",
        "vpnservice_id": "cc91b7af-8304-4aff-ad07-866dbaae2e93",
        "availability_zone": "AZ1",
        "protocol": "tcp",
        "floatingips": ["11bb315e-a0cb-4de3-acfc-00522e40722e", "53a14d86-436e-4f91-8c0d-ed934294269e"]
    }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
    "ssl_vpn_v2_connection": {
        "id": "76ee7216-5eef-470c-a7d2-ce4a7461b046",
        "name": "conn1",
        "status": "DOWN",
        "client_address_pool_cidrs": ["10.8.0.0/24", "10.8.1.0/24"],
        "credential_id": "434a9843-ecc0-4653-8f3a-e604d9d7aad9",
        "admin_state_up": true,
        "tenant_id": "1219ecaa01e0254dac4f08c9123aefcd",
        "vpnservice_id": "cc91b7af-8304-4aff-ad07-866dbaae2e93",
        "availability_zone": "AZ1",
        "protocol": "udp",
        "security_groups": ["8060f6ab-e327-4e01-9ccd-f1432cfab2c9"],
        "access_points": [
            {
                "external_address": "172.16.1.10",
                "internal_gateway": "10.9.1.24",
                "client_address_pool_cidr": "10.8.0.0/24",
                "floatingip": "11bb315e-a0cb-4de3-acfc-00522e40722e"
            }
        ]
    }
}
```
Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the SSL VPN V2 connection.</td>
</tr>
<tr>
<td>name</td>
<td>Name of the SSL VPN V2 connection.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the SSL VPN V2 connection. If false (down), port does not forward packets.</td>
</tr>
<tr>
<td>client_address_pool_cidr</td>
<td>The list of &quot;client_address_pool_cidr&quot;.</td>
</tr>
<tr>
<td>credential_id</td>
<td>UUID for VPNCredential Container on keymanagement. When you did not specify this parameter when creating the resource, this value returns 'null'.</td>
</tr>
<tr>
<td>vpnservice_id</td>
<td>UUID for VPNService id</td>
</tr>
<tr>
<td>id</td>
<td>UUID for SSL VPN V2 connection Object.</td>
</tr>
<tr>
<td>status</td>
<td>Indicates whether the SSL VPN V2 connection is currently operational. Possible values include: ACTIVE DOWN PENDING_CREATE PENDING_UPDATE PENDING_DELETE ERROR</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
<tr>
<td>protocol</td>
<td>Communication protocol used by VPN connection: udp, tcp</td>
</tr>
<tr>
<td>security_groups</td>
<td>Security groups set to SSL VPN V2 Server.</td>
</tr>
<tr>
<td>access_points</td>
<td>Information for accessing SSL VPN V2 connection. This consists of &quot;external_address&quot;, &quot;internal_gateway&quot;, &quot;client_address_pool_cidr&quot; and &quot;floatingip&quot;.</td>
</tr>
<tr>
<td>external_address</td>
<td>External IP address to connect to SSL VPN V2 Server from SSL-VPN clients.</td>
</tr>
<tr>
<td>internal_gateway</td>
<td>Gateway IP address to connect to remote SSL-VPN clients.</td>
</tr>
<tr>
<td>client_address_pool_cidr</td>
<td>Client address pool subnet which will be used by SSL-VPN client.</td>
</tr>
<tr>
<td>floatingip</td>
<td>Floating IP associates to the port of SSL VPN V2 Server. When you did not specify the parameter &quot;floatingips&quot; when creating the resource, this value returns 'null'.</td>
</tr>
</tbody>
</table>

3.3.3.4 Update SSL VPN V2 Connection

Updates an SSL VPN V2 Connection.
URI
/v2.0/vpn/ssl-vpn-v2-connections/{sslvpnv2connection-id}
Description of the URI:
{sslvpnv2connection-id} : Unique identifier for the SSL VPN V2 Connection.

HTTP method
PUT

Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Name of the SSL VPN V2 Connection.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of SSL VPN V2 Connection. If false (down), SSL VPN V2 Connection does not forward packets.</td>
<td>bool</td>
<td>Optional</td>
</tr>
<tr>
<td>security_groups</td>
<td>Security groups set to SSL VPN V2 Server. The number of security groups that can be registered is 6 or less.</td>
<td>uuid-str list</td>
<td>Optional</td>
</tr>
</tbody>
</table>

Example request

```
{   "ssl_vpn_v2_connection": {     "name": "conn1A",     "admin_state_up": false,     "security_groups": ["9833d261-35b2-4460-b615-9facb7474436"]   }}
```

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```
{   "ssl_vpn_v2_connection": {     "id": "2322fdea-783d-923b-cc4e-abc023ed874f",     "tenant_id": "1219ecaa01e0254dac4f08e9123aeafcd",     "name": "conn1A",     "status": "DOWN",     "client_address_pool_cidrs": ["10.8.0.0/24", "10.8.1.0/24"]   }}
```
```
{
  "credential_id": "434a9843-ecc0-4653-8f3a-e604d9d7aadc",
  "admin_state_up": false,
  "vpnservice_id": "cc91b7af-8304-4aff-ad07-86bdbaae2e93",
  "availability_zone": "AZ1",
  "protocol": "udp",
  "security_groups": ["9833d261-35b2-4460-b615-9facb74436"],
  "access_points": [
    {
      "external_address": "172.16.1.10",
      "internal_gateway": "10.9.1.24",
      "client_address_pool_cidr": "10.8.0.0/24",
      "floatingip": "11bb315e-a0cb-4de3-acfc-00522e40722e"
    },
    {
      "external_address": "172.16.1.11",
      "internal_gateway": "10.9.1.25",
      "client_address_pool_cidr": "10.8.1.0/24",
      "floatingip": "53a14d86-4396-4f91-8c0d-ed934294269e"
    }
  ]
}
```

### Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the SSL VPN V2 connection.</td>
</tr>
<tr>
<td>name</td>
<td>Name of the SSL VPN V2 connection.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of the SSL VPN V2 connection. If false (down), port does not forward packets.</td>
</tr>
<tr>
<td>client_address_pool_cidrs</td>
<td>The list of &quot;client_address_pool_cidr&quot;.</td>
</tr>
<tr>
<td>credential_id</td>
<td>UUID for VPNCredential Container on keymanagement. When you did not specify this parameter when creating the resource, this value returns 'null'.</td>
</tr>
<tr>
<td>vpnservice_id</td>
<td>UUID for VPNService</td>
</tr>
<tr>
<td>id</td>
<td>UUID for SSL VPN V2 connection Object.</td>
</tr>
<tr>
<td>status</td>
<td>Indicates whether the SSL VPN V2 connection is currently operational. Possible values include: ACTIVE DOWN PENDING_CREATE PENDING_UPDATE PENDING_DELETE ERROR</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name</td>
</tr>
<tr>
<td>protocol</td>
<td>Communication protocol used by VPN connection: udp, tcp</td>
</tr>
<tr>
<td>security_groups</td>
<td>Security groups set to SSL VPN V2 Server.</td>
</tr>
<tr>
<td>access_points</td>
<td>Information for accessing SSL VPN V2 connection. This consists of &quot;external_address&quot;, &quot;internal_gateway&quot;, &quot;client_address_pool_cidr&quot; and &quot;floatingip&quot;.</td>
</tr>
<tr>
<td>external_address</td>
<td>External IP address to connect to SSL VPN V2 Server from SSL-VPN clients.</td>
</tr>
<tr>
<td>internal_gateway</td>
<td>Gateway IP address to connect to remote SSL-VPN clients.</td>
</tr>
<tr>
<td>client_address_pool_cidr</td>
<td>Client address pool subnet which will be used by SSL-VPN client.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>floatingip</td>
<td>Floating IP associates to the port of SSL VPN V2 Server. When you did not specify the parameter &quot;floatingips&quot; when creating the resource, this value returns 'null'.</td>
</tr>
</tbody>
</table>

### 3.3.3.5 Delete SSL VPN V2 Connection

Deletes an SSL VPN V2 Connection.

**URI**

/v2.0/vpn/ssl-vpn-v2-connections/{sslvpn2connection-id}

Description of the URI:

{sslvpn2connection-id} : Unique identifier for the SSL VPN V2 Connection.

**HTTP method**

DELETE

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
## 3.4 IPsec VPN

### 3.4.1 API List

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GET /v2.0/vpn/ipsecpolicies</td>
<td>Lists all IPsec policies</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>List IPsec policies</td>
</tr>
<tr>
<td>2</td>
<td>GET /v2.0/vpn/ipsecpolicies/{ipsecpolicy-id}</td>
<td>Shows details about the specified IPsec policy</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Show IPsec policy details</td>
</tr>
<tr>
<td>3</td>
<td>POST /v2.0/vpn/ipsecpolicies</td>
<td>Creates an IPsec policy</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Create IPsec Policy</td>
</tr>
<tr>
<td>4</td>
<td>PUT /v2.0/vpn/ipsecpolicies/{ipsecpolicy-id}</td>
<td>Updates the specified IPsec policy</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Update IPsec Policy</td>
</tr>
<tr>
<td>5</td>
<td>DELETE /v2.0/vpn/ipsecpolicies/{ipsecpolicy-id}</td>
<td>Deletes an IPsec policy</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Delete IPsec policy</td>
</tr>
<tr>
<td>6</td>
<td>GET /v2.0/vpn/ipsec-site-connections</td>
<td>Lists all connections between IPsec sites</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>List IPsec site connections</td>
</tr>
<tr>
<td>7</td>
<td>GET /v2.0/vpn/ipsec-site-connections/{connection-id}</td>
<td>Shows details about the connection between specified IPsec sites</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Show IPsec site connection details</td>
</tr>
<tr>
<td>8</td>
<td>POST /v2.0/vpn/ipsec-site-connections</td>
<td>Creates an IPsec site connection</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Create IPsec site connection</td>
</tr>
<tr>
<td>9</td>
<td>PUT /v2.0/vpn/ipsec-site-connections/{connection-id}</td>
<td>Updates a connection between IPsec sites that is not in a PENDING state</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Update IPsec site connection</td>
</tr>
<tr>
<td>10</td>
<td>DELETE /v2.0/vpn/ipsec-site-connections/{connection-id}</td>
<td>Deletes a connection between IPsec sites</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Delete IPsec site connection</td>
</tr>
<tr>
<td>11</td>
<td>GET /v2.0/vpn/ikepolicies</td>
<td>Lists IKE policies</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>List IKE policies</td>
</tr>
<tr>
<td>12</td>
<td>GET /v2.0/vpn/ikepolicies/{ikepolicy-id}</td>
<td>Shows details about the specified IKE policy</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Show IKE policy details</td>
</tr>
<tr>
<td>13</td>
<td>POST /v2.0/vpn/ikepolicies</td>
<td>Creates an IKE policy</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>Create IKE policy</td>
</tr>
<tr>
<td>14</td>
<td>PUT /v2.0/vpn/ikepolicies/{ikepolicy-id}</td>
<td>Updates the specified IKE policy</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>Update IKE policy</td>
</tr>
<tr>
<td>15</td>
<td>DELETE /v2.0/vpn/ikepolicies/{ikepolicy-id}</td>
<td>Deletes the specified IKE policy</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Delete IKE policy</td>
</tr>
</tbody>
</table>
3.4.2 API details

3.4.2.1 List IPsec Policies

Lists IPsec policies.

URI
/v2.0/vpn/ipsecpolicies

HTTP method
GET

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Forbidden (403)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
  "ipsecpolicies": [
    {
      "name": "ipsecpolicy1",
      "transform_protocol": "esp",
      "auth_algorithm": "sha1",
      "encapsulation_mode": "tunnel",
      "encryption_algorithm": "aes-128",
      "pfs": "group14",
      "tenant_id": "ccb81365fe36411a9011e90491fe1330",
      "lifetime": {
        "units": "seconds",
        "value": 3600
      },
      "id": "5291b189-fd84-46e5-84bd-78f40c05d69c",
      "description": "",
      "availability_zone": "AZ1"
    }
  ]
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Friendly name for the IPsec policy.</td>
</tr>
<tr>
<td>transform_protocol</td>
<td>Transform protocol used: esp.</td>
</tr>
<tr>
<td>auth_algorithm</td>
<td>Authentication algorithm: sha1.</td>
</tr>
<tr>
<td>encapsulation_mode</td>
<td>Encapsulation mode: tunnel.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>pfs</td>
<td>Perfect Forward Secrecy: group2, group5, or group14.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the VPN service.</td>
</tr>
<tr>
<td>lifetime</td>
<td>Lifetime of the SA. Units in 'seconds'. Either units or value may be omitted.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the IPsec policy.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IPsec policy.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

Response body (error status)

```json
{
    "NeutronError": "network service is unavailable in availability_zone(AZ1)",
    "request_id": "73b014c9-10ab-4e3b-b281-05feae513c02"
}
```

Description of response body (error status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NeutronError</td>
<td>Error messages</td>
</tr>
<tr>
<td>request_id</td>
<td>Request ID</td>
</tr>
</tbody>
</table>

3.4.2.2 Show IPsec Policy details

Shows details for a specified IPsec policy.

**URI**

```
/v2.0/vpn/ipsecpolicies/{ipsecpolicy-id}
```

**HTTP method**

GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized(401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Forbidden(403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found(404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
    "ipsecpolicy": {
        "name": "ipsecpolicy1"
    }
}
```
Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Friendly name for the IPsec policy.</td>
</tr>
<tr>
<td>transform_protocol</td>
<td>Transform protocol used: esp.</td>
</tr>
<tr>
<td>auth_algorithm</td>
<td>Authentication algorithm: sha1.</td>
</tr>
<tr>
<td>encapsulation_mode</td>
<td>Encapsulation mode: tunnel.</td>
</tr>
<tr>
<td>pfs</td>
<td>Perfect Forward Secrecy: group2, group5, or group14.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the VPN service.</td>
</tr>
<tr>
<td>lifetime</td>
<td>Lifetime of the SA. Units in 'seconds'. Either units or value may be omitted.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the IPsec policy.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IPsec policy.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

### 3.4.2.3 Create IPsec Policy

Creates an IPsec policy.

**URI**

/v2.0/vpn/ipsecpolicies

**HTTP method**

POST

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Friendly name for the IPsec policy.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>transform_protocol</td>
<td>Transform protocol used: esp. (default: esp)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
<td>------------------</td>
</tr>
<tr>
<td>auth_algorithm</td>
<td>Authentication algorithm: sha1. (default: sha1)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>encapsulation_mode</td>
<td>Encapsulation mode: tunnel. (default: tunnel)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>encryption_algorithm</td>
<td>Encryption Algorithms: aes-128, aes-256, or aes-192. (default: aes-128)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>pfs</td>
<td>Perfect Forward Secrecy: group2, group5, or group14. (default: group5)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>lifetime</td>
<td>Lifetime of the SA. Units in 'seconds'. The time should be from 60 seconds to 86400 seconds. Either units or value may be omitted. (default: {'units': 'seconds', 'value': 3600})</td>
<td>dict</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IPsec policy.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name. If you do not specify this, the resource will be created in the default AZ.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```
{
    "ipsecpolicy": {
        "name": "ipsecpolicy1",
        "transform_protocol": "esp",
        "auth_algorithm": "sha1",
        "encapsulation_mode": "tunnel",
        "encryption_algorithm": "aes-128",
        "pfs": "group5",
        "lifetime": {
            "units": "seconds",
            "value": 7200
        },
        "availability_zone": "AZ1"
    }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

- 135 -
Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Friendly name for the IPsec policy.</td>
</tr>
<tr>
<td>transform_protocol</td>
<td>Transform protocol used: esp.</td>
</tr>
<tr>
<td>auth_algorithm</td>
<td>Authentication algorithm: sha1.</td>
</tr>
<tr>
<td>encapsulation_mode</td>
<td>Encapsulation mode: tunnel.</td>
</tr>
<tr>
<td>pfs</td>
<td>Perfect Forward Secrecy: group2, group5, or group14.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the VPN service.</td>
</tr>
<tr>
<td>lifetime</td>
<td>Lifetime of the SA. Units in 'seconds'. Either units or value may be omitted.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the IPsec policy.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IPsec policy.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

3.4.2.4 Update IPsec Policy

Updates an IPsec policy.

URI

```
/v2.0/vpn/ipsecpolicies/{ipsecpolicy-id}
```

HTTP method

PUT

Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Friendly name for the IPsec policy.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
<td>------------------</td>
</tr>
<tr>
<td>encryption_algorithm</td>
<td>Encryption Algorithms: aes-128, aes-256, aes-192.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>pfs</td>
<td>Perfect Forward Secrecy: group2, group5, or group14.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>lifetime</td>
<td>Lifetime of the SA. Units in 'seconds'. The time should be from 60 seconds to 86400 seconds. Either units or value may be omitted. (default: {'units': 'seconds', 'value': 3600})</td>
<td>dict</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IPsec policy.</td>
<td>string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```json
{
    "ipsecpolicy": {
        "pfs": "group14"
    }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
    "ipsecpolicy": {
        "name": "ipsecpolicy1",
        "transform_protocol": "esp",
        "auth_algorithm": "sha1",
        "encapsulation_mode": "tunnel",
        "encryption_algorithm": "aes-128",
        "pfs": "group14",
        "tenant_id": "ccb81365fe36411a9011e90491fe1330",
        "lifetime": {
            "units": "seconds",
            "value": 3600
        },
        "id": "5291b189-fd84-46e5-84bd-78f40c05d69c",
        "description": "",
        "availability_zone": "AZ1"
    }
}
```
Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Friendly name for the IPsec policy.</td>
</tr>
<tr>
<td>transform_protocol</td>
<td>Transform protocol used: esp.</td>
</tr>
<tr>
<td>auth_algorithm</td>
<td>Authentication algorithm: sha1.</td>
</tr>
<tr>
<td>encapsulation_mode</td>
<td>Encapsulation mode: tunnel.</td>
</tr>
<tr>
<td>pfs</td>
<td>Perfect Forward Secrecy: group2, group5, or group14.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the VPN service.</td>
</tr>
<tr>
<td>lifetime</td>
<td>Lifetime of the SA. Units in 'seconds'. Either units or value may be omitted.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the IPsec policy.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IPsec policy.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

3.4.2.5 Delete IPsec Policy

Deletes an IPsec policy.

URI
/v2.0/vpn/ipsecpolicies/{ipsecpolicy-id}

HTTP method
DELETE

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

3.4.2.6 List IPsec site connections

Lists the IPsec site-to-site connections.

URI
/v2.0/vpn/ipsec-site-connections

HTTP method
GET
Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Forbidden (403)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```
{
    "ipsec_site_connections": [
        {
            "status": "PENDING_CREATE",
            "psk": "secret",
            "initiator": "bi-directional",
            "name": "vpnconnection1",
            "admin_state_up": true,
            "tenant_id": "ccb81365fe36411a9011e90491fe1330",
            "description": "",
            "auth_mode": "psk",
            "peer_cidsrs": [
                "10.1.0.0/24"
            ],
            "mtu": 1500,
            "ikepolicy_id": "bf5612ac-15fb-460c-9b3d-6453da2fafa2",
            "dpd": {
                "action": "hold",
                "interval": 30,
                "timeout": 120
            },
            "route_mode": "static",
            "vpnservice_id": "c2f3178d-5530-4c4a-89fc-050ecd552636",
            "peer_address": "172.24.4.226",
            "peer_id": "172.24.4.226",
            "id": "cbc152a0-7e93-4f98-9f04-b085a4bf2511",
            "ipsecpolicy_id": "8ba867b2-67eb-4895-bb61-c226804a1584",
            "availability_zone": "AZ1"
        }
    ]
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>Indicates whether VPN connection is currently operational. Possible values include: ACTIVE, DOWN, BUILD, ERROR, PENDING_CREATE, PENDING_UPDATE, or PENDING_DELETE.</td>
</tr>
<tr>
<td>psk</td>
<td>Pre Shared Key: any string.</td>
</tr>
<tr>
<td>initiator</td>
<td>Whether this VPN can only respond to connections or can initiate as well.</td>
</tr>
<tr>
<td>name</td>
<td>Name for IPSec site-to-site connection.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of VPN connection. If false (down), VPN connection does not forward packets.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the VPN service.</td>
</tr>
</tbody>
</table>
### Item Description

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>Description of the IPsec site-to-site connection.</td>
</tr>
<tr>
<td>auth_mode</td>
<td>Authentication mode: psk.</td>
</tr>
<tr>
<td>peer_cidrs</td>
<td>Peer private CIDRs.</td>
</tr>
<tr>
<td>mtu</td>
<td>Maximum Transmission Unit to address fragmentation.</td>
</tr>
<tr>
<td>ikepolicy_id</td>
<td>Unique identifier of IKE policy.</td>
</tr>
<tr>
<td>dpd</td>
<td>Dead Peer Detection protocol controls. Action: hold or restart. Interval and timeout in seconds.</td>
</tr>
<tr>
<td>route_mode</td>
<td>Route mode: static. This will be extended in the future.</td>
</tr>
<tr>
<td>vpnservice_id</td>
<td>Unique identifier of VPN service.</td>
</tr>
<tr>
<td>peer_address</td>
<td>Peer gateway public IPv4 address.</td>
</tr>
<tr>
<td>peer_id</td>
<td>Peer router identity for authentication. Can be IPv4/IPv6 address, e-mail address, key id, or FQDN.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the IPsec site-to-site connection.</td>
</tr>
<tr>
<td>ipsecpolicy_id</td>
<td>Unique identifier of IPsec policy.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

**CAUTION**

If the status does not become ACTIVE after creating resources, even though the connection destination settings have been completed, check if the following parameters match the information of the connection destination.

- IKE Policy
  - encryption_algorithm
  - pfs
  - lifetime
- IPsec Policy
  - encryption_algorithm
  - pfs
  - lifetime
- IPsec site connection
  - psk
  - peer_cidrs
  - peer_address
  - peer_id

### 3.4.2.7 Show IPsec site connection details

Shows details about a specified IPsec site-to-site connection.

**URI**

```
/v2.0/vpn/ipsec-site-connections/{connection-id}
```

**HTTP method**

GET
Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```
{
  "ipsec_site_connection": {
    "status": "PENDING_CREATE",
    "psk": "secret",
    "initiator": "bi-directional",
    "name": "vpnconnection1",
    "admin_state_up": true,
    "tenant_id": "cbb819f5e36411a9011e90491fe1330",
    "description": "",
    "auth_mode": "psk",
    "peer_cidrs": ["10.1.0.0/24"],
    "mtu": 1500,
    "ikepolicy_id": "bf5612ac-15fb-460c-9b3d-6453da2fafa2",
    "dpd": {
      "action": "hold",
      "interval": 30,
      "timeout": 120
    },
    "route_mode": "static",
    "vpnservice_id": "c2f3178d-5530-4c4a-89fc-050ecd52636",
    "peer_address": "172.24.4.226",
    "peer_id": "172.24.4.226",
    "id": "cbc152a0-7e93-4f98-9f04-b085a4bf2511",
    "ipsecpolicy_id": "8ba867b2-67eb-4835-bb61-c226804a1584",
    "availability_zone": "AZ1"
  }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>Indicates whether VPN connection is currently operational. Possible values include: ACTIVE, DOWN, BUILD, ERROR, PENDING_CREATE, PENDING_UPDATE, or PENDING_DELETE.</td>
</tr>
<tr>
<td>psk</td>
<td>Pre Shared Key: any string.</td>
</tr>
<tr>
<td>initiator</td>
<td>Whether this VPN can only respond to connections or can initiate as well.</td>
</tr>
<tr>
<td>name</td>
<td>Name for IPSec site-to-site connection.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of VPN connection. If false (down), VPN connection does not forward packets.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the VPN service.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IPsec site-to-site connection.</td>
</tr>
<tr>
<td>auth_mode</td>
<td>Authentication mode: psk.</td>
</tr>
<tr>
<td>peer_cidrs</td>
<td>Peer private CIDRs.</td>
</tr>
<tr>
<td>mtu</td>
<td>Maximum Transmission Unit to address fragmentation.</td>
</tr>
<tr>
<td>ikepolicy_id</td>
<td>Unique identifier of IKE policy.</td>
</tr>
<tr>
<td>dpd</td>
<td>Dead Peer Detection protocol controls. Action: hold or restart. Interval and timeout in seconds.</td>
</tr>
<tr>
<td>route_mode</td>
<td>Route mode: static. This will be extended in the future. Unique identifier of VPN service.</td>
</tr>
<tr>
<td>vpnservice_id</td>
<td>Unique identifier of VPN service.</td>
</tr>
<tr>
<td>peer_address</td>
<td>Peer gateway public IPv4 address.</td>
</tr>
<tr>
<td>peer_id</td>
<td>Peer router identity for authentication. Can be IPv4/IPv6 address, e-mail address, key id, or FQDN.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the IPsec site-to-site connection.</td>
</tr>
<tr>
<td>ipsecpolicy_id</td>
<td>Unique identifier of IPsec policy.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

**CAUTION**
If the status does not become ACTIVE after creating resources, even though the connection destination settings have been completed, check the items in the notes in "List IPsec site connections".

### 3.4.2.8 Create IPsec site connection

Creates an IPsec site connection.

**URI**

```
/v2.0/vpn/ipsec-site-connections
```

**HTTP method**

POST

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>psk</td>
<td>Pre Shared Key: any string.</td>
<td>string</td>
<td>Required</td>
</tr>
<tr>
<td>initiator</td>
<td>Whether this VPN can only respond to connections or can initiate as well. Select bi-directional or response-only (default: bi-directional)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>ipsecpolicy_id</td>
<td>Unique identifier of IPsec policy.</td>
<td>uuid-str</td>
<td>Required</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------</td>
<td>-------------------</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of VPN connection. If false (down), VPN connection does not forward packets. (default: true)</td>
<td>bool</td>
<td>Optional</td>
</tr>
<tr>
<td>peer_cidrs</td>
<td>Peer private CIDRs. unique list of valid cidr in the form &lt;net_address&gt;/&lt;prefix&gt;. Only one cidr can be specified.</td>
<td>list</td>
<td>Required</td>
</tr>
<tr>
<td>ikepolicy_id</td>
<td>Unique identifier of IKE policy.</td>
<td>uuid-str</td>
<td>Required</td>
</tr>
<tr>
<td>dpd</td>
<td>Dead Peer Detection protocol controls. Action: hold or restart. Interval and timeout in seconds. (default: {'action': 'hold', 'interval': 30, 'timeout': 120})</td>
<td>dict</td>
<td>Optional</td>
</tr>
<tr>
<td>vpnservice_id</td>
<td>Unique identifier of VPN service.</td>
<td>uuid-str</td>
<td>Required</td>
</tr>
<tr>
<td>peer_address</td>
<td>Peer gateway public IPv4 address (It cannot be specified in CIDR format).</td>
<td>string</td>
<td>Required</td>
</tr>
<tr>
<td>peer_id</td>
<td>Peer router identity for authentication. Can be IPv4/IPv6 address (It cannot be specified in CIDR format), e-mail address, key id, or FQDN.</td>
<td>string</td>
<td>Required</td>
</tr>
<tr>
<td>name</td>
<td>Name for IPsec site-to-site connection.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IPsec site-to-site connection.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name. If you do not specify this, the resource will be created in the default Availability Zone.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```
{
    "ipsec_site_connection": {
        "psk": "secret",
        "initiator": "bi-directional",
        "ipsecpolicy_id": "22b8abdc-e822-45b3-90dd-f2c8512acfa5",
        "admin_state_up": true,
        "peer_cidrs": [
            "10.2.0.0/24"
        ],
        "ikepolicy_id": "d3f373dc-0708-4224-b6f8-676adf27dab8",
        "dpd": {
            "action": "hold",
            "interval": 60,
            "timeout": 240
        },
        "vpnservice_id": "7b347d20-6fa3-4e22-b744-c49ee235ae4f",
        "peer_address": "172.24.4.233",
        "peer_id": "172.24.4.233"
    }
}
```
"name": "vpnconnection1",
"availability_zone": "AZ1"
}

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

{
   "ipsec_site_connection": {
      "status": "PENDING_CREATE",
      "psk": "secret",
      "initiator": "bi-directional",
      "name": "vpnconnection1",
      "admin_state_up": true,
      "tenant_id": "b6887d0b45b54a249b2ce3dee01caa47",
      "description": "",
      "auth_mode": "psk",
      "peer_cidrs": [
         "10.2.0.0/24"
      ],
      "mtu": 1500,
      "ikepolicy_id": "d3f373dc-0708-4224-b6f8-676ad37dab8",
      "dpd": {
         "action": "hold",
         "interval": 60,
         "timeout": 240
      },
      "route_mode": "static",
      "vpnservice_id": "7b347d20-6fa3-4e22-b744-c49ee235ae4f",
      "peer_address": "172.24.4.233",
      "peer_id": "172.24.4.233",
      "id": "af44fd7-e911-4451-be57-cd4fad96b5dc",
      "ipsecpolicy_id": "22b8abdc-e822-45b3-90dd-f2c8512acfa5",
      "availability_zone": "AZ1"
   }
}

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>Indicates whether VPN connection is currently operational. Possible values include: ACTIVE, DOWN, BUILD, ERROR, PENDING_CREATE, PENDING_UPDATE, or PENDING_DELETE.</td>
</tr>
<tr>
<td>psk</td>
<td>Pre Shared Key: any string.</td>
</tr>
<tr>
<td>initiator</td>
<td>Whether this VPN can only respond to connections or can initiate as well.</td>
</tr>
<tr>
<td>name</td>
<td>Name for IPsec site-to-site connection.</td>
</tr>
</tbody>
</table>
### Item Description

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_state_up</td>
<td>Administrative state of VPN connection. If false (down), VPN connection does not forward packets.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the VPN service.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IPsec site-to-site connection.</td>
</tr>
<tr>
<td>auth_mode</td>
<td>Authentication mode: psk.</td>
</tr>
<tr>
<td>peer_cidrs</td>
<td>Peer private CIDRs.</td>
</tr>
<tr>
<td>mtu</td>
<td>Maximum Transmission Unit to address fragmentation.</td>
</tr>
<tr>
<td>ikepolicy_id</td>
<td>Unique identifier of IKE policy.</td>
</tr>
<tr>
<td>dpd</td>
<td>Dead Peer Detection protocol controls. Action: hold or restart. Interval and timeout in seconds.</td>
</tr>
<tr>
<td>route_mode</td>
<td>Route mode: static. This will be extended in the future.</td>
</tr>
<tr>
<td>vpnservice_id</td>
<td>Unique identifier of VPN service.</td>
</tr>
<tr>
<td>peer_address</td>
<td>Peer gateway public IPv4 address.</td>
</tr>
<tr>
<td>peer_id</td>
<td>Peer router identity for authentication. Can be IPv4/IPv6 address, e-mail address, key id, or FQDN.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the IPsec site-to-site connection.</td>
</tr>
<tr>
<td>ipsecpolicy_id</td>
<td>Unique identifier of IPsec policy.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

---

**CAUTION**

If the status does not become ACTIVE after creating resources, even though the connection destination settings have been completed, check the items in the notes in "List IPsec site connections".

### 3.4.2.9 Update IPsec site connection

Updates an IPsec site-to-site connection, provided status is not indicating a PENDING_* state.

**URI**

/v2.0/vpn/ipsec-site-connections/{connection-id}

**HTTP method**

PUT

**Request parameter**

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>psk</td>
<td>Pre Shared Key: any string.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>initiator</td>
<td>Whether this VPN can only respond to connections or can initiate as well. Select bi-directional or response-only (default: bi-directional)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
<td>Type</td>
<td>Required/optional</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------</td>
<td>-------------------</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of VPN connection. If false (down), VPN connection does not forward packets.</td>
<td>bool</td>
<td>Optional</td>
</tr>
<tr>
<td>peer_cidrs</td>
<td>Peer private CIDRs. unique list of valid cidr in the form &lt;net_address&gt;/&lt;prefix&gt;. Only one cidr can be specified.</td>
<td>list</td>
<td>Optional</td>
</tr>
<tr>
<td>dpd</td>
<td>Dead Peer Detection protocol controls. Action: hold or restart. Interval and timeout in seconds. (default: {'action': 'hold', 'interval': 30, 'timeout': 120})</td>
<td>dict</td>
<td>Optional</td>
</tr>
<tr>
<td>peer_address</td>
<td>Peer gateway public IPv4 address.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>peer_id</td>
<td>Peer router identity for authentication. Can be IPv4/IPv6 address, e-mail address, key id, or FQDN.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>name</td>
<td>Name for IPsec site-to-site connection.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IPsec site-to-site connection.</td>
<td>string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Example request**

```json
{
    "ipsec_site_connection": {
        "description": "to datacenter2"
    }
}
```

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

**Response body (normal status)**

```json
{
    "ipsec_site_connection": {
        "status": "DOWN",
        "psk": "secret",
        "initiator": "bi-directional",
        "name": "vpnconnection1"
    }
}
```
"admin_state_up": true,
"tenant_id": "26de9cd6cae94c8cb9f79d660d628e1f",
"description": "to datacenter2",
"auth_mode": "psk",
"peer_cidrs": [
  "10.2.0.0/24"
],
"mtu": 1500,
"ikepolicy_id": "771f081c-5ec8-4f9a-b041-015dfb7fbb2e",
"dpd": {
  "action": "hold",
  "interval": 30,
  "timeout": 120
},
"route_mode": "static",
"vpnservice_id": "41bfef97-af4e-4f6b-a5d3-4678859d2485",
"peer_address": "172.24.4.233",
"peer_id": "172.24.4.233",
"id": "f7cf7305-f491-45f4-ad9c-8e7240fe3d72",
"ipsecpolicy_id": "9958d4fe-3719-4e8c-84e7-9b93895b76b4",
"availability_zone": "AZ1"
}

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>Indicates whether VPN connection is currently operational. Possible values include: ACTIVE, DOWN, BUILD, ERROR, PENDING_CREATE, PENDING_UPDATE, or PENDING_DELETE.</td>
</tr>
<tr>
<td>psk</td>
<td>Pre Shared Key: any string.</td>
</tr>
<tr>
<td>initiator</td>
<td>Whether this VPN can only respond to connections or can initiate as well.</td>
</tr>
<tr>
<td>name</td>
<td>Name for IPsec site-to-site connection.</td>
</tr>
<tr>
<td>admin_state_up</td>
<td>Administrative state of VPN connection. If false (down), VPN connection does not forward packets.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the VPN service.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IPsec site-to-site connection.</td>
</tr>
<tr>
<td>auth_mode</td>
<td>Authentication mode: psk.</td>
</tr>
<tr>
<td>peer_cidrs</td>
<td>Peer private CIDRs.</td>
</tr>
<tr>
<td>mtu</td>
<td>Maximum Transmission Unit to address fragmentation.</td>
</tr>
<tr>
<td>ikepolicy_id</td>
<td>Unique identifier of IKE policy.</td>
</tr>
<tr>
<td>dpd</td>
<td>Dead Peer Detection protocol controls. Action: hold or restart. Interval and timeout in seconds.</td>
</tr>
<tr>
<td>route_mode</td>
<td>Route mode: static. This will be extended in the future.</td>
</tr>
<tr>
<td>vpnservice_id</td>
<td>Unique identifier of VPN service.</td>
</tr>
<tr>
<td>peer_address</td>
<td>Peer gateway public IPv4 address.</td>
</tr>
<tr>
<td>peer_id</td>
<td>Peer router identity for authentication. Can be IPv4/IPv6 address, e-mail address, key id, or FQDN.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the IPsec site-to-site connection.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>ipsecpolicy_id</td>
<td>Unique identifier of IPsec policy.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

**CAUTION**

If the status does not become ACTIVE after updating resources, even though the connection destination settings have been completed, check the items in the notes in "List IPsec site connections".

### 3.4.2.10 Delete IPsec site connection

Deletes an IPsec site-to-site connection.

**URI**

`/v2.0/vpn/ipsec-site-connections/{connection-id}`

**HTTP method**

DELETE

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

### 3.4.2.11 List IKE policies

Lists IKE policies.

**URI**

`/v2.0/vpn/ikepolicies`

**HTTP method**

GET

**Response status**

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Forbidden (403)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
Response body (normal status)

```json
{
  "ikepolicies": [
    {
      "name": "ikepolicy1",
      "tenant_id": "ccb81365fe36411a9011e90491fe1330",
      "auth_algorithm": "sha1",
      "encryption_algorithm": "aes-256",
      "pfs": "group5",
      "phase1_negotiation_mode": "main",
      "lifetime": {
        "units": "seconds",
        "value": 3600
      },
      "ike_version": "v1",
      "id": "5522aff7-1b3c-48dd-9c3c-b50f016b73db",
      "description": "",
      "availability_zone": "AZ1"
    }
  ]
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Friendly name for the IKE policy.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the VPN service.</td>
</tr>
<tr>
<td>auth_algorithm</td>
<td>Authentication Hash algorithms: sha1.</td>
</tr>
<tr>
<td>pfs</td>
<td>Perfect Forward Secrecy: group2, group5, or group14.</td>
</tr>
<tr>
<td>phase1_negotiation_mode</td>
<td>IKE mode: main.</td>
</tr>
<tr>
<td>lifetime</td>
<td>Lifetime of the SA. Units in 'seconds'. Either units or value may be omitted.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the IKE policy.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IKE policy.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

3.4.2.12 Show IKE policy details

Shows details for a specified IKE policy.

**URI**

`/v2.0/vpn/ikepolicies/{ikepolicy-id}`

**HTTP method**

GET

**Response status**
<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Forbidden (403)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
    "ikepolicy": {
        "name": "ikepolicy1",
        "tenant_id": "ccb81365fe36411a9011e90491fe1330",
        "auth_algorithm": "sha1",
        "encryption_algorithm": "aes-256",
        "pfs": "group5",
        "phase1_negotiation_mode": "main",
        "lifetime": {
            "value": 3600
        },
        "ike_version": "v1",
        "id": "5522aff7-1b3c-48dd-9c3c-b50f016b73db",
        "description": "",
        "availability_zone": "AZ1"
    }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Friendly name for the IKE policy.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the VPN service.</td>
</tr>
<tr>
<td>auth_algorithm</td>
<td>Authentication Hash algorithms: sha1.</td>
</tr>
<tr>
<td>pfs</td>
<td>Perfect Forward Secrecy: group2, group5, or group14.</td>
</tr>
<tr>
<td>phase1_negotiation_mode</td>
<td>IKE mode: main.</td>
</tr>
<tr>
<td>lifetime</td>
<td>Lifetime of the SA. Units in 'seconds'. Either units or value may be omitted.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the IKE policy.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IKE policy.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

3.4.2.13 Create IKE policy

Creates an IKE policy.
URI
/v2.0/vpn/ikepolicies

HTTP method
POST

Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>phase1_negotiation_mode</td>
<td>IKE mode: main. (default: main)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>auth_algorithm</td>
<td>Authentication Hash algorithms: sha1. (default: sha1)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>encryption_algorithm</td>
<td>Encryption Algorithms: aes-128, aes-256, aes-192 (default: aes-128)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>pfs</td>
<td>Perfect Forward Secrecy: group2, group5, or group14. (default: group5)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>lifetime</td>
<td>Lifetime of the SA. Units in 'seconds'. The time should be from 60 seconds to 86400 seconds. Either units or value may be omitted. (default: {'units': 'seconds', 'value': 2000})</td>
<td>dict</td>
<td>Optional</td>
</tr>
<tr>
<td>ike_version</td>
<td>Version: v1. (default: v1)</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>name</td>
<td>Friendly name for the IKE policy.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IKE policy.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name. If you do not specify this, the resource will be created in the default Availability Zone.</td>
<td>xsd:string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

Example request

```json
{
    "ikepolicy": {
        "phase1_negotiation_mode": "main",
        "auth_algorithm": "sha1",
        "encryption_algorithm": "aes-128",
        "pfs": "group5",
        "lifetime": {
            "units": "seconds",
            "value": 7200
        },
        "ike_version": "v1",
        "name": "ikepolicy1",
        "availability_zone": "AZ1"
    }
}
```
Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```
{
  "ikepolicy": {
    "name": "ikepolicy1",
    "tenant_id": "ccb81365fe36411a9011e90491fe1330",
    "auth_algorithm": "sha1",
    "encryption_algorithm": "aes-128",
    "pfs": "group5",
    "phase1_negotiation_mode": "main",
    "lifetime": {
      "units": "seconds",
      "value": 7200
    },
    "ike_version": "v1",
    "id": "5522aff7-1b3c-48dd-9c3c-b50f016b73db",
    "description": "",
    "availability_zone": "AZ1"
  }
}
```

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Friendly name for the IKE policy.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the VPN service.</td>
</tr>
<tr>
<td>auth_algorithm</td>
<td>Authentication Hash algorithms: sha1.</td>
</tr>
<tr>
<td>pfs</td>
<td>Perfect Forward Secrecy: group2, group5, or group14.</td>
</tr>
<tr>
<td>phase1_negotiation_mode</td>
<td>IKE mode: main.</td>
</tr>
<tr>
<td>lifetime</td>
<td>Lifetime of the SA. Units in 'seconds'. Either units or value may be omitted.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the IKE policy.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IKE policy.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>
3.4.2.14 Update IKE policy

Updates an IKE policy.

URI

/v2.0/vpn/ikepolicies/{ikepolicy-id}

HTTP method

PUT

Request parameter

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
<th>Type</th>
<th>Required/optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>encryption_algorithm</td>
<td>Encryption Algorithms: aes-128, aes-256, aes-192.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>pfs</td>
<td>Perfect Forward Secrecy: group2, group5, group14.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>lifetime</td>
<td>Lifetime of the SA. Units in 'seconds'. The time should be from 60 seconds to 86400 seconds. Either units or value may be omitted.</td>
<td>dict</td>
<td>Optional</td>
</tr>
<tr>
<td>name</td>
<td>Friendly name for the IKE policy.</td>
<td>string</td>
<td>Optional</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IKE policy.</td>
<td>string</td>
<td>Optional</td>
</tr>
</tbody>
</table>

Example request

```json
{
  "ikepolicy": {
    "encryption_algorithm": "aes-256"
  }
}
```

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Bad Request (400)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>

Response body (normal status)

```json
{
  "ikepolicy": {
    "name": "ikepolicy1",
    "tenant_id": "ccb81365fe3641a9011e90491fe1330",
    "auth_algorithm": "sha1",
    "encryption_algorithm": "aes-256"
  }
}
```
"pfs": "group5",
"phase1_negotiation_mode": "main",
"lifetime": {
  "units": "seconds",
  "value": 3600
},
"ike_version": "v1",
"id": "5522aff7-1b3c-48dd-9c3c-b50f016b73db",
"description": "",
"availability_zone": "AZ1"}
}

Description of response body (normal status)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Friendly name for the IKE policy.</td>
</tr>
<tr>
<td>tenant_id</td>
<td>Unique identifier for owner of the VPN service.</td>
</tr>
<tr>
<td>auth_algorithm</td>
<td>Authentication Hash algorithms: sha1.</td>
</tr>
<tr>
<td>pfs</td>
<td>Perfect Forward Secrecy: group2, group5, or group14.</td>
</tr>
<tr>
<td>phase1_negotiation_mode</td>
<td>IKE mode: main.</td>
</tr>
<tr>
<td>lifetime</td>
<td>Lifetime of the SA. Units in 'seconds'. Either units or value may be omitted.</td>
</tr>
<tr>
<td>id</td>
<td>Unique identifier for the IKE policy.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the IKE policy.</td>
</tr>
<tr>
<td>availability_zone</td>
<td>The Availability Zone name.</td>
</tr>
</tbody>
</table>

3.4.2.15 Delete IKE policy

Deletes an IKE policy.

URI

/v2.0/vpn/ikepolicies/[ikepolicy-id]

HTTP method

DELETE

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>Normal response codes</td>
</tr>
<tr>
<td>Unauthorized (401)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Not Found (404)</td>
<td>Error response codes</td>
</tr>
<tr>
<td>Conflict (409)</td>
<td>Error response codes</td>
</tr>
</tbody>
</table>
Part 4: Network connector

Topics:
- Common information
- Network connector
4.1 Common information

4.1.1 General requirements

This section describes general requirements to use this API.

- Specify the name and description input parameters using up to 255 characters.
- Set the version of the IP address to be specified in the request parameter to "4" ("ip_version": 4), and specify the IP address (XXX_ip_address) in IPv4 format.
- When executing the API that lists the resources, only some of the availability zone information may be returned. If this happens, it is assumed that infrastructure maintenance is in progress, so wait for a few moments (at least one minute) and then execute the API again.

4.1.2 Common API items

Request header

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content-Type</td>
<td>application/json</td>
<td>-</td>
</tr>
<tr>
<td>Accept</td>
<td>application/json</td>
<td>-</td>
</tr>
<tr>
<td>X-Auth-Token</td>
<td>authentication token</td>
<td>-</td>
</tr>
</tbody>
</table>

4.1.3 Common API error codes

Example common API error codes

Response status

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>500,400,other codes possible</td>
<td>computeFault</td>
</tr>
<tr>
<td>501</td>
<td>notImplemented</td>
</tr>
<tr>
<td>503</td>
<td>serverCapacityUnavailable</td>
</tr>
<tr>
<td>503</td>
<td>serviceUnavailable</td>
</tr>
<tr>
<td>400</td>
<td>badRequest</td>
</tr>
<tr>
<td>401</td>
<td>unauthorized</td>
</tr>
<tr>
<td>403</td>
<td>forbidden</td>
</tr>
<tr>
<td>403</td>
<td>resizeNotAllowed</td>
</tr>
<tr>
<td>404</td>
<td>itemNotFound</td>
</tr>
<tr>
<td>405</td>
<td>badMethod</td>
</tr>
<tr>
<td>409</td>
<td>backupOrResizeInProgress</td>
</tr>
<tr>
<td>409</td>
<td>buildInProgress</td>
</tr>
<tr>
<td>Status code</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>409</td>
<td>conflictingRequest</td>
</tr>
<tr>
<td>413</td>
<td>overLimit</td>
</tr>
<tr>
<td>413</td>
<td>badMediaType</td>
</tr>
</tbody>
</table>

4.1.4 Generate URLs when using APIs

The APIs require URLs of the network type, which can be generated by the identity service on the Service catalog.

The endpoint URL is returned in the following format by the identity service.

```
https://networking.***.cloud.global.fujitsu.com

*** indicates the region identifier
```

Join the path name of each API in the host section of the endpoint URL, and create the URL.
### 4.2 Network connector

#### 4.2.1 API List

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GET /v2.0/network_connector_pools/{network_connector_pool_id}</td>
<td>Shows Network Connector Pool</td>
</tr>
<tr>
<td>2</td>
<td>GET /v2.0/network_connector_pools</td>
<td>List Network Connector Pools</td>
</tr>
<tr>
<td>3</td>
<td>POST /v2.0/network_connectors</td>
<td>Create Network Connector</td>
</tr>
<tr>
<td>4</td>
<td>GET /v2.0/network_connectors/{network_connector_id}</td>
<td>Show Network Connector</td>
</tr>
<tr>
<td>5</td>
<td>GET /v2.0/network_connectors</td>
<td>List Network Connectors</td>
</tr>
<tr>
<td>6</td>
<td>PUT /v2.0/network_connectors/{network_connector_id}</td>
<td>Update Network Connector</td>
</tr>
<tr>
<td>7</td>
<td>DELETE /v2.0/network_connectors/{network_connector_id}</td>
<td>Delete Network Connector</td>
</tr>
<tr>
<td>8</td>
<td>POST /v2.0/network_connector_endpoints</td>
<td>Create Network Connector Endpoint</td>
</tr>
<tr>
<td>9</td>
<td>GET /v2.0/network_connector_endpoints/{network_connector_endpoint_id}</td>
<td>Show Network Connector Endpoint</td>
</tr>
<tr>
<td>10</td>
<td>GET /v2.0/network_connector_endpoints</td>
<td>List Network Connector Endpoints</td>
</tr>
<tr>
<td>11</td>
<td>PUT /v2.0/network_connector_endpoints/{network_connector_endpoint_id}</td>
<td>Update Network Connector Endpoint</td>
</tr>
<tr>
<td>12</td>
<td>DELETE /v2.0/network_connector_endpoints/{network_connector_endpoint_id}</td>
<td>Delete Network Connector Endpoint</td>
</tr>
<tr>
<td>13</td>
<td>PUT /v2.0/network_connector_endpoints/{network_connector_endpoint_id}/connect</td>
<td>Connect Network Connector Endpoint</td>
</tr>
<tr>
<td>Item</td>
<td>API</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-----</td>
<td>-------------</td>
</tr>
<tr>
<td>14</td>
<td>PUT /v2.0/network_connector_endpoints/{network connector endpoint id}/disconnect</td>
<td>Disconnect Network Connector Endpoint</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disconnects interface from the specified network connector endpoint</td>
</tr>
<tr>
<td>15</td>
<td>GET /v2.0/network_connector_endpoints/{network connector endpoint id}/interfaces</td>
<td>List Connected Interfaces of Network Connector Endpoint</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lists the interfaces connected to the specified network connector endpoint</td>
</tr>
</tbody>
</table>

### 4.2.2 API details

#### 4.2.2.1 Show Network Connector Pool

Shows a specified network connector pool.

**Request**

**URI**

GET <network service endpoint>/v2.0/network_connector_pools/<network connector pool id>

Example:

GET http://192.168.122.1:9696/v2.0/network_connector_pools/78380271-954a-4c1a-a76d-43033c7fc9bf

**Headers**

- X-Auth-Token: token delivered by identity service

**Response**

**Status Code**

- 200

**Headers**

- Content-Type: application/json

**Body**

```json
{
  "network_connector_pool": {
    "id": "78380271-954a-4c1a-a76d-43033c7fc9bf",
    "name": "mpls-vpn-pool1"
  }
}
```

**Body Elements**

- id:
  id for this network connector pool
• Type: String
• name:
  name for network connector pool
• Type: String

Errors
• 401: Token is not specified or not authorized.
• 403: Token is not permitted to operate.
• 404: Specified Network Connector Pool not found

4.2.2.2 List Network Connector Pools
Lists network connector pools.

Request

URI
GET <network service endpoint>/v2.0/network_connector_pools
Example:
GET http://192.168.122.1:9696/v2.0/network_connector_pools/78380271-954a-4c1a-a76d-43033c7fc9bf

Headers
• X-Auth-Token: token delivered by identity service

Response

Status Code
• 200

Headers
• Content-Type: application/json

Body

```json
{
  "network_connector_pools" : [ 
    {
    "id" : "78380271-954a-4c1a-a76d-43033c7fc9bf",
    "name" : "mpls-vpn-pool1",
    },
    {
    "id" : "ddd0271-954a-4c1a-a76d-43033c7fc9bf",
    "name" : "mpls-vpn-pool2"
    }
  ]
}
```

Elements
• id:
  id for this network connector pool
• Type: String
• name:
  name for network connector pool
  • Type: String

Errors
• 401: Token is not specified or not authorized.
• 403: Token is not permitted to operate.

### 4.2.2.3 Create Network Connector
Creates a network connector.

**Request**

**URI**

POST <network service endpoint>/v2.0/network_connectors

Example:

POST http://192.168.122.1:9696/v2.0/network_connectors

**Headers**

• X-Auth-Token: token delivered by identity service
• Content-Type: application/json

**Body Syntax**

```json
{
  "network_connector": {
    "name": "connector1",
    "network_connector_pool_id": "78380271-954a-4c1a-a76d-43033c7fc9bf",
    "tenant_id": "29320d5e-dd29-425c-b386-3cbb2754ad03"
  }
}
```

**Parameters**

• name:
  name for network connector
  • Type: String
  • Constraints: Up to 255 characters in length
  • Constraints: a-z, A-Z, 0-9, and _-
  • Required: Yes

• network_connector_pool_id:
  A network connector pool id for this network connector. When this value not specified and only one pool exists, use it.
  • Type: String
  • Required: No

• tenant_id:
  The tenant's ID to which this network connector belongs.
  This parameter is restricted for project in which requester joins.
  • Type: String
• Required: No

Response

Status Code

• 201

Headers

• Content-Type: application/json

Body

Example:

```json
{
  "network_connector" : {
    "id" : "07993b1c-79e1-4cf6-a663-dc42b9ce37d4",
    "name" : "connector1",
    "network_connector_pool_id" : "78380271-954a-4c1a-a76d-43033c7fc9bf",
    "network_connector_endpoints" : []
    "tenant_id" : "29320d5e-dd29-425c-b386-3cbb2754ad03"
  }
}
```

Elements

• id:
  ID for this network connector
  • Type: String
• name:
  name for network connector
  • Type: String
• network_connector_pool_id:
  A network connector pool id for this network connector.
  • Type: String
• network_connector_endpoints:
  ID of network connector endpoints belonging to this network connector. Immediate after creation, this value must be empty array.
  • Type: Array of String
• tenant_id:
  tenant's ID to which this network connector belongs
  • Type: String

Errors

• 400: Invalid parameter in request body
• 401: Token is not specified or not authorized.
• 403: Token is not permitted to operate.
• 404: Network Connector Pool not found.
• 409: Operation conflicts with another one.
• 503: No resource remains in the network connector pool
4.2.2.4 Show Network Connector

Shows information for a specified network connector.

**Request**

**URI**

GET <network service endpoint>/v2.0/network_connectors/<network connector id>

Example:

GET http://192.168.122.1:9696/v2.0/network_connectors/07993b1c-79e1-4cf6-a663-dc42b9ce37d4

**Headers**

• X-Auth-Token: token delivered by identity service

**Response**

**Status Code**

• 200

**Headers**

• Content-Type: application/json

**Body**

```json
{
    "network_connector": { 
    "id": "07993b1c-79e1-4cf6-a663-dc42b9ce37d4",
    "name": "connector1",
    "network_connector_pool_id": "78380271-954a-4c1a-a76d-43033c7fc9bf",
    "network_connector_endpoints": [ 
        "0e521ed5-62d0-44c9-9c04-2e880b5add21"
    ],
    "tenant_id": "29320d5e-ddd9-425e-b386-3cbb2754ad03"
    }
}
```

**Elements**

• id:
  ID for this network connector
  • Type: String

• name:
  name for network connector
  • Type: String

• network_connector_pool_id:
  A network connector pool id for this network connector.
  • Type: String

• network_connector_endpoints:
  ID of network connector endpoints belonging to this network connector. Immediate after creation, this value must be empty array.
  • Type: Array of String
• tenant_id:
  tenant’s ID to which this network connector belongs
• Type: String

Errors
• 401: Token is not specified or not authorized.
• 403: Token is not permitted to operate.
• 404: Specified network connector not found

4.2.2.5 List Network Connectors
Lists network connectors.

Request

URI
GET <network service endpoint>/v2.0/network_connectors
Example:
GET http://192.168.122.1:9696/v2.0/network_connectors

Headers
• X-Auth-Token: token delivered by identity service

Response

Status Code
• 200 (OK)

Headers
• Content-Type: application/json

Body
```
{
  "network_connectors" : [
    {
      "id" : "07993b1c-79e1-4cf6-a663-dc42b9ce37d4",
      "name" : "connector1",
      "network_connector_pool_id" : "78380271-954a-4c1a-a76d-43033c7fc9bf",
      "network_connector_endpoints" : [
        "0e521ed5-62d0-44c9-9c04-2e880b5add21"
      ],
      "tenant_id" : "29320d5e-dd29-425c-b386-3cbb2754ad03"
    },
    {
      "id" : "ddecde23-fbf7-460d-b895-6f190b1890ee",
      "name" : "connector1",
      "network_connector_pool_id" : "78380271-954a-4c1a-a76d-43033c7fc9bf",
      "network_connector_endpoints" : [
        "d001c289-e7ba-4db9-90d8-ee70785852b4"
      ],
      "tenant_id" : "d827860a-f3dc-4c65-9e22-78142582a12c"
    }
  ]
}
```
Elements

- id:
  ID for this network connector
  - Type: String
- name:
  name for network connector
  - Type: String
- network_connector_pool_id:
  A network connector pool id for this network connector.
  - Type: String
- network_connector_endpoints:
  ID of network connector endpoints belonging to this network connector. Immediate after
  creation, this value must be empty array.
  - Type: Array of String
- tenant_id:
  tenant's ID to which this network connector belongs
  - Type: String

Errors

- 401: Token is not specified or not authorized.
- 403: Token is not permitted to operate.

4.2.2.6 Update Network Connector

Updates a specified network connector.

Request

URI

PUT <network service endpoint>/v2.0/network_connectors/<network connector id>

Example:
PUT http://192.168.122.1:9696/v2.0/network_connectors/07993b1c-79e1-4cf6-a663-dc42b9ce37d4

Headers

- X-Auth-Token: token delivered by identity service
- Content-Type: application/json

Body Syntax

```json
{
  "network_connector" : {
    "name" : "connector2"
  }
}
```
Request Parameters

Update only specified parameter.

- name:
  name for network connector
  - Type: String
  - Constraints: Up to 255 characters in length
  - Constraints: a-z, A-Z, 0-9, and _-

Response

Status Code

- 200

Headers

- Content-Type: application/json

Body

Example:

```json
{
  "network_connector": {
    "id": "07993b1c-79e1-4cf6-a663-dc42b9ce37d4",
    "name": "connector2",
    "network_connector_pool_id": "78380271-954a-4c1a-a76d-43033c7fc9bf",
    "tenant_id": "29320d5e-dd29-425c-b386-3cbb2754ad03",
    "network_connector_endpoints": [
      "0e521ed5-62d0-44c9-9c04-2e880b5add21"
    ]
  }
}
```

Elements

- id:
  ID for this network connector
  - Type: String

- name:
  name for network connector
  - Type: String

- network_connector_pool_id:
  A network connector pool id for this network connector.
  - Type: String

- network_connector_endpoints:
  ID of network connector endpoints belonging to this network connector. Immediate after creation, this value must be empty array.
  - Type: Array of String

- tenant_id:
  tenant's ID to which this network connector belongs
  - Type: String
Errors

• 400:
  • Invalid parameter in request body
  • Not updatable parameter is specified in request body
• 401: Token is not specified or not authorized.
• 403: Token is not permitted to operate
• 404: Specified network connector not found

4.2.2.7 Delete Network Connector

Deletes a specified network connector.

Request

URI

DELETE <network service endpoint>/v2.0/network_connector/<network connector id>
Example:
DELETE http://192.168.122.1:9696/v2.0/network_connectors/07993b1c-79e1-4cf6-a663-dc42b9ce37d4

Headers

• X-Auth-Token: token delivered by identity service

Response

Status Code

• 204

Headers

• Content-Type: text/plain

Errors

• 401: Token is not specified or not authorized
• 403: Token is not permitted to operate
• 404: Specified network connector not found
• 409:
  • Specified network connector in use.
  • Operation conflicts with another one.

4.2.2.8 Create Network Connector Endpoint

Creates a network connector endpoint.

Request

URI

POST <network service endpoint>/v2.0/network_connector_endpoints
Example:
POST http://192.168.122.1:9696/v2.0/network_connector_endpoints
Headers

- X-Auth-Token: token delivered by identity service
- Content-Type: application/json

Body Syntax

```json
{
  "network_connector_endpoint": {
    "name": "endpoint_for_az1",
    "network_connector_id": "07993b1c-79e1-4cf6-a663-dc42b9ce37d4",
    "endpoint_type": "availability_zone",
    "location": "east-jp-az1",
    "tenant_id": "29320d5e-dd29-425c-b386-3cbb2754ad03"
  }
}
```

Request Parameters

- **name:**
  - Name for this network connector endpoint.
  - Type: String
  - Constraints: Up to 255 characters in length
  - Constraints: a-z, A-Z, 0-9, and _-
  - Required: Yes

- **network_connector_id:**
  - ID of network connector to which this network connector endpoint belongs.
  - Type: String
  - Required: Yes

- **endpoint_type:**
  - type of this network connector endpoint.
  - Type: String
  - Constraints: availability_zone
  - Required: Yes

- **location:**
  - location of this network connector endpoint in the endpoint_type.
  - Type: String
  - Required: Yes
  - Constraints: When type is "availability_zone", this value must be one of availability zone name.

- **tenant_id:**
  - The tenant's ID to which this network connector belongs.
  - This parameter is restricted for project in which requester joins.
  - Type: String
  - Required: No

Response

**Status code**

- 201
4.2.2.9 Show Network Connector Endpoint

Shows a specified network connector endpoint.

**Headers**
- Content-Type: application/json

**Body**

Example:

```json
{
  "network_connector_endpoint": {
    "id": "6ed3561f-087f-43f9-9a51-bf71f666b80f",
    "name": "endpoint_for_az1",
    "network_connector_id": "07993b1c-79e1-4cf6-a663-dc42b9ce37d4",
    "endpoint_type": "availability_zone",
    "location": "east-jp-az1",
    "tenant_id": "29320d5e-dd29-425c-b386-3cbb2754ad03"
  }
}
```

**Elements**

- **id**: ID for this network connector endpoint
  - Type: String

- **name**: Name for this network connector endpoint
  - Type: String

- **network_connector_id**: ID of network connector to which this network connector endpoint belongs.
  - Type: String

- **endpoint_type**: Type of this network connector endpoint. This value is "availability_zone".
  - Type: String

- **location**: Location of this network connector endpoint in the endpoint_type. When endpoint_type is "availability_zone", this value is availability_zone name.
  - Type: String

- **tenant_id**: Tenant's ID to which this network connector belongs
  - Type: String

**Errors**

- 400: Invalid parameter in request body
- 401: Token is not specified or not authorized
- 403: Token is not permitted to operate
- 404: Network connector not found for specified ID
- 409: A network endpoint already exists for same condition with combination of endpoint_type and location.
- 503: Any available resource for network connector endpoint does not remain.
Request

URI

GET <network service endpoint>/v2.0/network_connector_endpoints/<network connector endpoint id>
Example:
GET http://192.168.122.1:9696/v2.0/network_connector_endpoints/6ed3561f-087f-9a51-bf71f666b80f

Headers

• X-Auth-Token: token delivered by identity service

Response

Status Code

• 200

Headers

• Content-Type: application/json

Body

Example:

```
{
   "network_connector_endpoint": {
      "id": "6ed3561f-087f-43f9-9a51-bf71f666b80f",
      "name": "endpoint_for_az1",
      "network_connector_id": "07993b1c-79e1-4cf6-a663-dc42b9ce37d4",
      "endpoint_type": "availability_zone",
      "location": "east-jp-az1",
      "tenant_id": "29320d5e-dd29-425c-b386-3cbb2754ad03"
   }
}
```

Elements

• id:
   ID for this network connector endpoint
   • Type: String

• name:
   Name for this network connector endpoint
   • Type: String

• network_connector_id:
   ID of network connector to which this network connector endpoint belongs.
   • Type: String

• endpoint_type:
   Type of this network connector endpoint. This value must be one of "availability_zone" or "remote"
   • Type: String

• location:
Location of this network connector endpoint in the endpoint_type. When endpoint_type is 'availability_zone', this value is availability_zone name. When endpoint_type is "remote", this value expresses label of location, such as 'intra'.

- Type: String
- tenant_id:
  Tenant's ID to which this network connector belongs
  - Type: String

Errors
- 401: Token is not specified or not authorized.
- 403: Token is not permitted to operate
- 404: Network connector endpoint not found for specified ID

### 4.2.2.10 List Network Connector Endpoints
Lists network connector endpoints.

**Request**

**URI**
GET <network service endpoint>/v2.0/network_connector_endpoints

Example:
GET http://192.168.122.1:9696/v2.0/network_connector_endpoints

**Headers**
- X-Auth-Token: token delivered by identity service

**Response**

**Status Code**
- 200

**Headers**
- Content-Type: application/json

**Body**

```
{
  "network_connector_endpoints" : [
  {
    "id": "6ed3561f-087f-43f9-9a51-bf71f666b80f",
    "name": "endpoint_for_az1",
    "network_connector_id": "07993b1c-79e1-4cf6-a663-dc42b9ce37d4",
    "endpoint_type": "availability_zone",
    "location" : "east-jp-az1",
    "tenant_id" : "29320d5e-dd29-425c-b386-3cbb2754ad03"
  },
  {
    "id": "1e71ee6a7e5-4b05-93c6-e6e8bf02f2e5",
    "name": "endpoint_for_az2",
    "network_connector_id": "75e3507f-8fb6-4b0f-9f0c-00ce011e4a51",
    "endpoint_type": "availability_zone",
  }
]
```
Elements

- **id**: ID for this network connector endpoint
  - Type: String
- **name**: Name for this network connector endpoint
  - Type: String
- **network_connector_id**: ID of network connector to which this network connector endpoint belongs.
  - Type: String
- **endpoint_type**: Type of this network connector endpoint. This value must be one of "availability_zone" or "remote"
  - Type: String
- **location**: Location of this network connector endpoint in the endpoint_type. When endpoint_type is "availability_zone", this value is availability_zone name. When endpoint_type is "remote", this value expresses label of location, such as 'intra'.
  - Type: String
- **tenant_id**: Tenant's ID to which this network connector belongs
  - Type: String

Errors

- 401: Token is not specified or not authorized.
- 403: Token is not permitted to operate

4.2.2.11 Update Network Connector Endpoint

Updates a specified network connector endpoint.

Request

**URI**

PUT <network service endpoint>/v2.0/network_connector_endpoints/<network connector endpoint id>

Example:

PUT http://192.168.122.1:9696/v2.0/network_connector_endpoints/6ed3561f-087f-43f9-9a51-bf71f66bb80f

**Headers**

- X-Auth-Token: token delivered by identity service
- Content-Type: application/json
Body Syntax

```
{
  "network_connector_endpoint": {
    "name": "endpoint2_for_az1"
  }
}
```

Request parameters

• name:
  Name for this network connector endpoint.
  • Type: String
  • Constraints: Up to 255 characters in length
  • Constraints: a-z, A-Z, 0-9, and _-

Response

Status Code

• 200

Headers

• Content-Type: application/json

Body

Example:

```
{
  "network_connector_endpoint": {
    "id": "6ed3561f-087f-43f9-9a51-bf71f666b80f",
    "name": "endpoint2_for_az1",
    "network_connector_id": "07993b1c-79e1-4cf6-a663-dc42b9ce37d4",
    "endpoint_type": "availability_zone",
    "location": "east-jp-az1",
    "tenant_id": "29320d5e-dd29-425c-b386-3cbb2754ad03"
  }
}
```

Elements

• id:
  ID for this network connector endpoint
  • Type: String

• name:
  Name for this network connector endpoint
  • Type: String

• network_connector_id:
  ID of network connector to which this network connector endpoint belongs.
  • Type: String

• endpoint_type:
  Type of this network connector endpoint. This value must be one of "availability_zone" or "remote"
  • Type: String
• location:
  Location of this network connector endpoint in the endpoint_type. When endpoint_type is
  "availability_zone", this value is availability_zone name. When endpoint_type is "remote", this
  value expresses label of location, such as 'intra'.
  • Type: String
• tenant_id:
  Tenant's ID to which this network connector belongs
  • Type: String

Errors
• 400:
  • Invalid parameter in request body
  • Not updatable parameter is specified in request body
• 401: Token is not specified or not authorized
• 403: Token is not permitted to operate
• 404: Network connector endpoint not found for specified ID
• 409: Operation conflicts with another one.

4.2.2.12 Delete Network Connector Endpoint

Deletes a specified network connector endpoint.

Request

URI
DELETE <network service endpoint>/v2.0/network_connector_endpoints/<network connector
endpoint id>
Example:
DELETE http://192.168.122.1:9696/v2.0/
network_connector_endpoints/6ed3561f-087f-43f9-9a51-bf71f666b80f

Headers
• X-Auth-Token: token delivered by identity service

Response

Status Code
• 204

Errors
• 401: Token is not specified or not authorized
• 403: Token is not permitted to operate
• 404: Network connector endpoint not found for specified ID
• 409:
  • Some interfaces still connect to the network connector endpoint.
  • Operation conflicts with another one.

4.2.2.13 Connect Network Connector Endpoint

Connects interface to a specified network connector endpoint.
Request

URI

PUT <network service endpoint>/v2.0/network_connector_endpoints/<network connector endpoint id>/connect

Example:
PUT http://192.168.122.1:9696/v2.0/network_connector_endpoints/6ed3561f-087f-43f9-9a51-bf71f66b80f/connect

Headers

• X-Auth-Token: token delivered by identity service
• Content-Type: application/json

Body Syntax

```
{
    "interface": {
        "port_id": "5fd5b822-c400-46dc-bc68-ea8c0dd20876"
    }
}
```

Parameters

• interface:
  Resource information for connection to the network connector endpoint. Value depends on network connector endpoint type. When endpoint_type is availability_zone:
  • Type: Map
  • Required: Yes
• port_id:
  Port resource on the availability zone.
  • Type: String
  • Required: Yes

Response

Status Code

• 200

Errors

• 400: Invalid parameter in request body
• 401: Token is not specified or not authorized.
• 403: Token is not permitted to operate.
• 404: Network connector endpoint not found for specified ID
• 409:
  • Resource cannot be connected to network connector endpoint.
  • Operation conflicts with another one.
ID for internal control is displayed in device_id of port information after the port connected to Network Connector Endpoint.

4.2.2.14 Disconnect Network Connector Endpoint

Disconnect interface to a specified network connector endpoint.

Request

URI

PUT <network service endpoint>/v2.0/network_connector_endpoints/<network connector endpoint id>/disconnect

Example:

PUT http://192.168.122.1:9696/v2.0/network_connector_endpoints/6ed3561f-087f-43f9-9a51-bf71f666b80f/disconnect

Headers

• X-Auth-Token: token delivered by identity service
• Content-Type: application/json

Body syntax

```
{
  "interface": {
    "port_id": "5fd5b822-c400-46dc-bc68-ea8c0dd20876"
  }
}
```

Parameters

• interface:
  Resource information for disconnection to the network connector endpoint Value depends on network connector endpoint type. When endpoint_type is availability_zone:
  • Type: Map
  • Required: Yes

• port_id:
  Port resource on the availability zone. The port's device_owner must be 'network:router_interface'
  • Type: String
  • Required: Yes

Response

Status Code

• 200

Errors

• 400: Invalid parameter in request body
• 401: Token is not specified or not authorized.
• 403: Token is not permitted to operate.
• 404:
  • Network connector endpoint not found for specified ID.
  • Specified interface is not connected.
• 409: Operation conflicts with another one.

### 4.2.2.15 List Connected Interfaces of Network Connector Endpoint

Lists interfaces which connects to a specified network connector endpoint.

**Request**

**URI**

GET <network service endpoint>/v2.0/network_connector_endpoints/<network connector endpoint id>/interfaces

**Example:**

GET http://192.168.122.1:9696/v2.0/network_connector_endpoints/6ed3561f-087f-43f9-9a51-bf71f66b80f/interfaces

**Headers**

• X-Auth-Token: token delivered by identity service

**Response**

**Status Code**

• 200

**Headers**

• Content-Type: application/json

**Body**

**Example:**

```json
{
  "network_connector_endpoint": {
    "interfaces": [
      {
        "port_id": "5fd5b822-c400-46dc-bc68-ea8c0dd20876"
      },
      {
        "port_id": "8df2a059-2851-4938-b989-51ce156d6b29"
      }
    ]
  }
}
```

**Elements**

• interfaces:
  Information of interfaces connecting to specified network connector endpoint.
  • Type: Array of Map
For availability_zone:

- port_id:
  Port resource in the availability zone.
  Type: String

**Errors**

- 401: Token is not specified or not authorized.
- 403: Token is not permitted to operate.
- 404: Network connector endpoint not found for specified ID
Part 5: Load balancer

Topics:

• Common information
• Load balancer
5.1 Common information

5.1.1 General requirements

This section describes general requirements to use this API.

- When executing the API that lists the resources, only some of the availability zone information may be returned. If this happens, it is assumed that infrastructure maintenance is in progress, so wait for a few moments (at least one minute) and then execute the API again.

5.1.2 API common information

5.1.2.1 Query Requests and Response

Description

This section describes query requests. A query request can be a HTTP or HTTPS request described in HTTP methods (GET or POST) containing the Action query parameter.

Contents

Query requests

A query request comprises the following.

- Endpoint
  URL that functions as the entry point of a web service.

- Action
  Action to be executed.

  This is one of the parameters, specified as Action=<action>.

- Parameter
  Each parameter is delimited by an ampersand (&).

  Among the parameters are list structure items.

  These lists are specified using the expression param.n.

  n is an integer starting from 1.

Query request example

In the example below, "https://loadbalancing.(regionName).cloud.global.fujitsu.com/" is the endpoint, "CreateLoadBalancer" is the action, and the remainder are the parameters.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/?LoadBalancerName=MyLB01
&Listeners.member.1.LoadBalancerPort=80
&Listeners.member.1.InstancePort=80
&Listeners.member.1.Protocol=http
&Listeners.member.1.InstanceProtocol=http
&Scheme=internal
&Subnets.member.1=subnet-3561b05d
&Version=2014-11-01
&Action=CreateLoadBalancer
Query response

The structure of a query response is specific to the operation. The request ID is included in the requestId element of all responses. The request ID is required for troubleshooting issues.

When an API other than "DescribeLoadBalancerAttributes", "DescribeLoadBalancerPolicies", or "DescribeLoadBalancers" is executed and a normal response with status code 200 is returned, check the result in "DescribeLoadBalancers". Confirm that the State is InService and then execute the next API.

When a status code other than 200 is returned, refer to "Common Errors" or Errors of the executed API to remove the cause of the error.

Query response example

In the example below, the request ID is "1549581b-12b7-11e3-895e-1334aEXAMPLE".

```json
{
    "CreateLoadBalancerResponse": {
        "CreateLoadBalancerResult": {
            "DNSName": "MyLB01-3b9c2b0f028f40e09d6306887646c28b.elb.tps5.fujitsu.com"
        }
    },
    "ResponseMetadata": {
        "RequestId": "1549581b-12b7-11e3-895e-1334aEXAMPLE"
    }
}
```

5.1.2.2 Requests Headers

Description

A request header contains information used by all actions.

Contents

- **X-Auth-Token**
  
  Valid authentication token.

- **Accept**
  
  Usable application media type. The JSON format ("application/json") and XML format ("application/xml") can be specified. Responses will be converted into the specified format.

- **Content-type**
  
  Application media type of the resource content. The JSON format ("application/json") and XML format ("application/xml") can be specified. If Accept is omitted, responses will be converted into the specified format.

5.1.2.3 Common Parameters

Description

Common parameters are request parameters that can be used by all actions. Action-specific parameters are also listed in the topic.

Contents

- **Action**
Action to be executed.
  • Default: None
  • Type: String
  • Required: Yes
• Version
  API version to which a request is written.
  Specify 2014-11-01.
  Format: Expressed as YYYY-MM-DD.
  • Default: None
  • Type: String
  • Required: No

5.1.2.4 Common Errors

Description
Common errors are general errors that can be returned by all actions.
Action-specific errors are described in the explanation of each action.

Contents
• InternalFailure
  The request failed due to an error with unknown cause, exception, or failure.
  • HTTP Status Code: 400
• InvalidClientTokenId
  The request has not been approved for the specified authentication token.
  Or, a parameter that cannot be used with the specified authentication token has been specified.
  • HTTP Status Code: 403
• InvalidParameterCombination
  The request specified parameters that cannot be specified at the same time.
  • HTTP Status Code: 400
• InvalidParameterValue
  An invalid value or a value outside the range was specified for the input parameter.
  • HTTP Status Code: 400
• MalformedQueryString
  The query string contained a syntax error.
  • HTTP Status Code: 404
• MissingParameter
  A required parameter has not been specified for the specified action.
  • HTTP Status Code: 400
• ResourceIsBusy
  The resource is being used by another operation.
  • HTTP Status Code: 409
• UnsupportedHeaderValue
  An unsupported header value was specified.
  • HTTP Status Code: 406
• Unsupported
  The specified request is not supported.
  • HTTP Status Code: 500
5.1.3 Generate URLs when using APIs

The APIs require URLs of the loadbalancing type, which can be generated by the identity service on the Service catalog. The endpoint URL is returned in the following format by the identity service.

```
https://loadbalancing.***.cloud.global.fujitsu.com

*** indicates the region identifier
```

Join the path name of each API in the host section of the endpoint URL, and create the URL.
## 5.2 Load balancer

### 5.2.1 API List

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ApplySecurityGroupsToLoadBalancer</td>
<td>Associates one or more security groups with the load balancer</td>
</tr>
<tr>
<td>2</td>
<td>AttachLoadBalancerToSubnets</td>
<td>Attaches one or more subnets to the load balancer</td>
</tr>
<tr>
<td>3</td>
<td>ConfigureHealthCheck</td>
<td>Specifies the health check settings to use when evaluating the health state of the distribution destination instances of the specified load balancer</td>
</tr>
<tr>
<td>4</td>
<td>CreateLCookieStickinessPolicy</td>
<td>Generates a session stickiness policy</td>
</tr>
<tr>
<td>5</td>
<td>CreateLoadBalancer</td>
<td>Creates a load balancer</td>
</tr>
<tr>
<td>6</td>
<td>CreateLoadBalancerListeners</td>
<td>Creates one or more listeners for the port specified in the load balancer</td>
</tr>
<tr>
<td>7</td>
<td>CreateLoadBalancerPolicy</td>
<td>Creates a policy including required attributes according to its type</td>
</tr>
<tr>
<td>8</td>
<td>CreateSorryServerRedirectionPolicy</td>
<td>Creates a policy for redirecting to the SorryServer when unable to distribute due to the distribution destination instances not all being in an active state.</td>
</tr>
<tr>
<td>9</td>
<td>DeleteLoadBalancer</td>
<td>Deletes the specified load balancer</td>
</tr>
<tr>
<td>10</td>
<td>DeleteLoadBalancerListeners</td>
<td>Deletes a listener of the specified port number from the load balancer</td>
</tr>
<tr>
<td>11</td>
<td>DeleteLoadBalancerPolicy</td>
<td>Deletes a specified policy from the load balancer</td>
</tr>
<tr>
<td>12</td>
<td>DeregisterInstancesFromLoadBalancer</td>
<td>Deletes the specified instance from the load balancer</td>
</tr>
<tr>
<td>13</td>
<td>DescribeLoadBalancerAttributes</td>
<td>Retrieves attribute information of the load balancer that was created</td>
</tr>
<tr>
<td>14</td>
<td>DescribeLoadBalancerPolicies</td>
<td>Retrieves policy information from the load balancer</td>
</tr>
<tr>
<td>15</td>
<td>DescribeLoadBalancers</td>
<td>Retrieves detailed information of the load balancer that was created</td>
</tr>
<tr>
<td>16</td>
<td>DetachLoadBalancerFromSubnets</td>
<td>Detaches the subnets from the load balancer</td>
</tr>
<tr>
<td>17</td>
<td>ModifyLoadBalancerAttributes</td>
<td>Changes attribute information of the specified load balancer</td>
</tr>
<tr>
<td>18</td>
<td>RegisterInstancesWithLoadBalancer</td>
<td>Adds an instance to the load balancer</td>
</tr>
<tr>
<td>19</td>
<td>SetLoadBalancerListenerSSLCertificate</td>
<td>Sets the certificate of the end of SSL communications for the specified listener</td>
</tr>
<tr>
<td>Item</td>
<td>API</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-----</td>
<td>-------------</td>
</tr>
<tr>
<td>20</td>
<td>SetLoadBalancerPoliciesOfListener</td>
<td>Registers, deregisters, and changes policies that are applied to a listener of the load balancer</td>
</tr>
</tbody>
</table>

5.2.2 API data types

5.2.2.1 BackendServerDescription

**Description**

Information about the configuration of a back-end server.

**Contents**

- **InstancePort**
  Port of the back-end server.
  - Default: None
  - Type: Integer
  - Required: No
- **PolicyNames**
  List of policies enabled for the back-end server.
  - Default: None
  - Type: String list
  - Required: No

5.2.2.2 HealthCheck

**Description**

Information about a health check.

**Contents**

- **HealthyThreshold**
  The number of consecutive health check successes that is to be embedded in the assignment destination after it has been deemed that the target distribution destination instance has recovered from a failure.
  Specify a value from 1 to 2147483647.
  - Type: Integer
  - Required: Yes
- **Interval**
  The interval, in seconds, between health checks.
  Specify a value from 1 to 2147483647.
  - Type: Integer
  - Required: Yes
- **Target**
  Protocol, port number, and URL of the instance targeted for a health check.
  These are to be specified using the following format:
protocol:port<url>

For the protocol, specify one of the following: TCP, HTTP, HTTPS, or SSL.
For the port, specify a value from 1 to 65535.
For the url, if the protocol is HTTP or HTTPS, then specify the URL path. (Optional)

• Type: String
• Required: Yes

• Timeout
The amount of time, in seconds, during which no response means a failed health check.
Specify a value from 1 to 2147483647.

⚠️ This value must be less than the Interval value.

• Type: Integer
• Required: Yes

• UnhealthyThreshold
The number of consecutive health check failures that is to be excluded from the assignment destination after it has been deemed that the target distribution destination instance failed.
Specify a value from 1 to 2147483647.

• Type: Integer
• Required: Yes

5.2.2.3 ConnectionSettings

Description
Information about the ConnectionSettings attribute.

Contents
• IdleTimeout
Time for maintaining the connection to the front and back ends in an idle state.
This time period is set in seconds.

• Type: Integer
• Valid range: Minimum value of 1. Maximum value of 3600.
• Required: Yes

5.2.2.4 Instance

Description
Information about an instance.

Contents
• InstanceId
ID of the instance.

• Type: String
• Required: Yes
• PortId
Port ID of the instance.
When multiple ports exist for an instance, specify the port used for communication with the ELB.

- Type: String
- Required: No

5.2.2.5 InstanceDescription

Description
Information about an instance.

Contents
- InstanceId
  ID of the instance.
  - Type: String
  - Required: No
- PortId
  Port ID of the instance.
  - Type: String
  - Required: No

5.2.2.6 LBCookieStickinessPolicy

Description
Data type of LBCookieStickinessPolicy.

Contents
- CookieExpirationPeriod
  Expiration period (seconds) of the cookie.
  If this parameter is omitted, the expiration period will not be set.
  - Type: Long
  - Required: No

- PolicyName
  Name of the policy.
  The name must be unique among the target load balancers.
  - Type: String
  - Required: No

5.2.2.7 Listener
Description
Information about a listener.

Contents

- **InstancePort**
  TCP port number of distribution destination server.
  Specify a value from 1 to 65535.
  This item cannot be changed while the load balancer exists.

  😡 Only one InstancePort can be specified for a single load balancer.

  • Type: Integer
  • Required: Yes

- **InstanceProtocol**
  Protocol (HTTP, HTTPS, TCP, SSL) to be used for routing traffic to the back-end instances.
  This item cannot be changed while the load balancer exists.

  😡 If the front-end protocol is HTTP or HTTPS, InstanceProtocol must be set to HTTP or HTTPS.
  If the front-end protocol is TCP or SSL, InstanceProtocol must be set to TCP or SSL.
  The protocol specified for InstanceProtocol is not case-sensitive.

  😡 If specifying more than one listener, it is necessary to match their InstanceProtocol and InstancePort values.

  • Type: String
  • Required: Yes

- **LoadBalancerPort**
  Port number of the front-end.
  Specify a value from 1 to 65535.
  This item cannot be changed while the load balancer exists.

  • Type: Integer
  • Required: Yes

- **Protocol**
  Transport protocol of the load balancer (HTTP, HTTPS, TCP, or SSL).
  This item cannot be changed while the load balancer exists.

  😡 The protocol specified for Protocol is not case-sensitive.
  If the protocol is HTTP or HTTPS, the value of the X-Forwarded-Proto header will be the value specified for Protocol.

  • Type: String
  • Required: Yes

- **SSLCertificateId**
  Resource ID of the SSL certificate registered for the Key Management service.
5.2.2.8 ListenerDescription

Description
Information about a listener.

Contents
- Listener
  Information about a listener.
  - Type: Listener
  - Required: No
- PolicyNames
  List of policy names.
  If there are no policies enabled, the list is empty.
  - Type: String list
  - Required: No

5.2.2.9 LoadBalancerAttributes

Description
Data type of LoadBalancerAttributes.

Contents
- ConnectionSettings
  By setting this parameter, the load balancer can maintain the connection in an idle (not sending or receiving data over the connection) state for a specified period.
  By default, it is set as follows by the combination of Protocol and InstanceProtocol of Listeners.
  - When the protocol is HTTP-HTTP, HTTPS-HTTP or HTTPS-HTTPS
    60 seconds
  - When the protocol is TCP-TCP, SSL-TCP or SSL-SSL
    3600 seconds

5.2.2.10 LoadBalancerDescription

Description
DescribeLoadBalancersNormal response described in DescribeLoadBalancers.

Contents
- AutoScaleState
AutoScale state.
If AutoScaleState is InService, this indicates that autoscale is enabled.
If AutoScaleState is OutOfService, this indicates that autoscale is disabled.
If AutoScaleState is AutoScaling, this indicates that autoscale is running.
If AutoScaleState is Maintenance, this indicates that autoscale is disabled because maintenance is in progress.
If AutoScaleState is Error, this indicates that autoscale has failed and is disabled.
Refer to the AutoScaleErrorDescription information and remove the cause of the error.
• Type: String
  • Required: No
• AutoScaleErrorDescription
  Investigation information for the time when AutoScaleState was Error.
  • Type: String
  • Required: No
• BackendServerDescriptions
  List of detailed information about the back-end servers.
  • Type: BackendServerDescription list
  • Required: No
• CreatedTime
  The time the load balancer was created.
  • Type: DateTime
  • Required: No
• DNSName
  Name of the DNS server where the load balancer name and IP address relationship is registered.
  • Type: String
  • Required: No
• ErrorDescription
  Investigation information for the time when State was Error.
  If "No more IP addresses available on Subnet '_subnet_id_'", this indicates that a subnet has insufficient IP addresses.
  If "No more Floating IP available on Network '_network_id_'", this indicates that a network has insufficient floating IPs.
  In all other cases, reexecute the operation immediately preceding the error.
  However, if the operation immediately preceding the error was CreateLoadBalancer or AttachLoadBalancerToSubnets, follow the procedure below.
  • CreateLoadBalancer
    If the operation was CreateLoadBalancer, reexecute after executing DeleteLoadBalancer.
  • AttachLoadBalancerToSubnets
    If the operation was AttachLoadBalancerToSubnets, reexecute after using DetachLoadBalancerFromSubnets to detach the subnet that was added.
  If the value is not changed even after re-executing the operation, notify the operation administrator of the ErrorDescription information and request an investigation.
  • Type: String
  • Required: No
• Grade
  Grade of the load balancer (performance type).
  Indicates a standard grade load balancer (Standard), medium performance-grade load balancer (Middle), or high performance-grade load balancer (High).
  • Type: String
  • Required: No
• HealthCheck
  Failure monitoring information of the load balancer.
    • Type: HealthCheck
    • Required: No
• Instances
  List of distribution destination instance IDs.
    • Type: InstanceDescription list
    • Required: No
• ListenerDescriptions
  List of the detailed information about listeners.
    • Type: ListenerDescription list
    • Required: No
• LoadBalancerName
  Name of the load balancer.
    • Type: String
    • Required: No
• Policies
  List of policies defined for the load balancer.
    • Type: Policies
    • Required: No
• Scheme
  Type of the load balancer.
  If Scheme is public, the load balancer holds a DNS name that allows resolution of global IPs.
  If Scheme is internal, the load balancer holds a DNS name that allows resolution of private IPs.
    • Type: String
    • Required: No
• SecurityGroups
  Security group.
    • Type: String list
    • Required: No
• Servers
  Server information used for configuring the load balancer.
    • Required: No
• State
  Latest status of the load balancer.
  If State is InService, this indicates that the load balancer is operating normally.
  If State is OutOfService, this indicates that an operation is being executed for the load balancer.
  If State is Error, this indicates that an operation for the load balancer has failed, and is in an error state.
  Check the ErrorDescription information.
    • Type: String
    • Required: No
• Subnets
  List of the subnet IDs of the virtual system.
    • Type: String list
    • Required: No
5.2.2.11 OtherPolicy

**Description**
Data type of OtherPolicy.

**Contents**
- PolicyName
  Name of the policy.
  The name must be unique among the target load balancers.
  - Type: String
  - Required: No

5.2.2.12 Policies

**Description**
Information about the policies.

**Contents**
- LBCookieStickinessPolicies
  List of [LBCookieStickinessPolicy](#) created in CreateLBCookieStickinessPolicy.
  - Type: LBCookieStickinessPolicy list
  - Required: No
- SorryServerRedirectionPolicies
  List of [SorryServerRedirectionPolicy](#) created in CreateSorryServerRedirectionPolicy.
  - Type: SorryServerRedirectionPolicy list
  - Required: No
- OtherPolicies
  List of policies other than stickiness and SorryServerRedirection policies.
  - Type: String list
  - Required: No

5.2.2.13 PolicyAttribute

**Description**
Data type of PolicyAttribute.
Composed of a pair of key and values defining the property of the specific policy.

**Contents**
- AttributeName
  Attribute name of the policy.
  - Type: String
  - Required: No
- AttributeValue
  The attribute value of the policy.
  - Type: String
  - Required: No
When the PolicyTypeName of `CreateLoadBalancerPolicy` is `SSLNegotiationPolicyType`, the following values can be set.

<table>
<thead>
<tr>
<th>AttributeName</th>
<th>AttributeValue</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protocol-SSLv3</td>
<td>true / false</td>
<td>false</td>
<td>Availability of SSLv3 communication. false is recommended.</td>
</tr>
<tr>
<td>Protocol-TLSv1</td>
<td>true / false</td>
<td>false</td>
<td>Possibility of TLSv1 communication. false is recommended.</td>
</tr>
<tr>
<td>Protocol-TLSv1.1</td>
<td>true / false</td>
<td>false</td>
<td>Availability of TLSv1.1 communication</td>
</tr>
<tr>
<td>Protocol-TLSv1.2</td>
<td>true / false</td>
<td>false</td>
<td>Availability of TLSv1.2 communication</td>
</tr>
<tr>
<td>Reference-Security-Policy</td>
<td>PolicyName of the pre-defined security policy</td>
<td>n/a</td>
<td>The pre-defined security policy that is referred to</td>
</tr>
<tr>
<td>ECDHE-RSA-AES256-GCM-SHA384</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-ECDSA-AES256-GCM-SHA384</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-RSA-AES256-SHA384</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-ECDSA-AES256-SHA384</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-RSA-AES256-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-ECDSA-AES256-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-AES256-GCM-SHA384</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-AES256-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-AES256-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-CAMELLIA256-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-RSA-AES256-GCM-SHA384</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-ECDSA-AES256-GCM-SHA384</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AttributeName</td>
<td>AttributeValue</td>
<td>Default</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------</td>
<td>---------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>ECDH-ECDSA-AES256-SHA384</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-RSA-AES256-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-ECDSA-AES256-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AES256-GCM-SHA384</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AES256-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AES256-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>CAMELLIA256-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-RSA-AES128-GCM-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-ECDSA-AES128-GCM-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-RSA-AES128-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-ECDSA-AES128-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-RSA-AES128-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-ECDSA-AES128-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-AES128-GCM-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-AES128-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-AES128-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-AES128-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-CAMELLIA128-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>EDH-RSA-DES-CBC3-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-RSA-AES128-GCM-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-ECDSA-AES128-GCM-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-RSA-AES128-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-ECDSA-AES128-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-ECDSA-AES128-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AttributeName</td>
<td>AttributeValue</td>
<td>Default</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>----------------</td>
<td>---------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>ECDH-RSA-AES128-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-ECDSA-AES128-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AES128-GCM-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AES128-SHA256</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AES128-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>CAMELLIA128-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DES-CBC3-SHA</td>
<td>true / false</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
</tbody>
</table>

### 5.2.2.14 PolicyAttributeDescription

**Description**

Data type of PolicyAttributeDescription.

**Contents**

- **AttributeName**
  Attribute name related to the policy.
  - Type: String
  - Required: No
- **AttributeValue**
  Value of the attribute related to the policy.
  - Type: String
  - Required: No
**PolicyDescription** In cases where the PolicyTypeName of **PolicyDescription** is SSLNegotiationPolicyType, the following values will be set.

<table>
<thead>
<tr>
<th>AttributeName</th>
<th>AttributeValue</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protocol-SSLv3</td>
<td>true / false</td>
<td>Availability of SSLv3 communication</td>
</tr>
<tr>
<td>Protocol-TLSv1</td>
<td>true / false</td>
<td>Availability of TLSv1 communication</td>
</tr>
<tr>
<td>Protocol-TLSv1.1</td>
<td>true / false</td>
<td>Availability of TLSv1.1 communication</td>
</tr>
<tr>
<td>Protocol-TLSv1.2</td>
<td>true / false</td>
<td>Availability of TLSv1.2 communication</td>
</tr>
<tr>
<td>IsDefault</td>
<td>true / false</td>
<td>If the policy is set as default when creating a load balancer or not</td>
</tr>
<tr>
<td>Reference-Security-Policy</td>
<td>PolicyName of the pre-defined security policy</td>
<td>The pre-defined security policy that is referred to</td>
</tr>
<tr>
<td>ECDHE-RSA-AES256-GCM-SHA384</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-ECDSA-AES256-GCM-SHA384</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-RSA-AES256-SHA384</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-ECDSA-AES256-SHA384</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-RSA-AES256-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-ECDSA-AES256-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-AES256-GCM-SHA384</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-AES256-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-AES256-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-CAMELLIA256-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-RSA-AES256-GCM-SHA384</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-ECDSA-AES256-GCM-SHA384</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-RSA-AES256-SHA384</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-ECDSA-AES256-SHA384</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AES256-GCM-SHA384</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AES256-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AES256-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>CAMELLIA256-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AttributeName</td>
<td>AttributeValue</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------</td>
<td>-------------</td>
</tr>
<tr>
<td>ECDHE-RSA-AES128-GCM-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-ECDSA-AES128-GCM-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-RSA-AES128-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-ECDSA-AES128-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-RSA-AES128-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDHE-ECDSA-AES128-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-AES128-GCM-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-AES128-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-AES128-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DHE-RSA-CAMELLIA128-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>EDH-RSA-DES-CBC3-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-RSA-AES128-GCM-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-ECDSA-AES128-GCM-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-RSA-AES128-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-ECDSA-AES128-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-RSA-AES128-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>ECDH-ECDSA-AES128-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AES128-GCM-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AES128-SHA256</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>AES128-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>CAMELLIA128-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
<tr>
<td>DES-CBC3-SHA</td>
<td>true / false</td>
<td>Availability of the cipher suite</td>
</tr>
</tbody>
</table>

5.2.2.15 PolicyDescription

Description
Data type of PolicyDescription.

Contents
- PolicyAttributeDescriptions
  List of structures of policy attributes.
- Type: PolicyAttributeDescription list
5.2.2.16 SorryServerRedirectionPolicy

**Description**
Data type of SorryServerRedirectionPolicy.

**Contents**
- Location
  URI of the redirection destination location.
  - Type: Long
  - Required: No
- PolicyName
  Name of the policy.
  The name must be unique among the target load balancers.
  - Type: String
  - Required: No

5.2.2.17 SourceSecurityGroup

**Description**
Data type of an element of the DescribeLoadBalancers response.

**Contents**
- GroupName
  Name of SourceSecurityGroup.
  - Type: String
  - Required: No
- OwnerAlias
  Owner of SourceSecurityGroup.
  - Type: String
  - Required: No

5.2.3 API details

5.2.3.1 ApplySecurityGroupsToLoadBalancer
Description
Associates one or more security groups with a load balancer.
The specified security groups override the previously associated security groups.

Request parameters
Refer to "Common Parameters" for details on standard parameter information used by all actions.

- LoadBalancerName
  Name of the load balancer.
  The name must be unique among the load balancers in the projects to which the account belongs.
  - Type: String
  - Required: Yes
- SecurityGroups.member.N
  List of security group IDs to associate with the load balancer.
  It is necessary to specify security group IDs not as a security group name, but as an ID.
  - Type: String list
  - Required: Yes

Response
The following status code is returned.
- Normal response code
  This operation was accepted normally.
  - HTTP Status Code: 200

Response Elements
The following element is returned in a structure called the ApplySecurityGroupsToLoadBalancerResult.
- SecurityGroups
  List of security ID groups associated with the load balancer.
  - Type: String list

Errors
Refer to "Common Errors" for details on error information common to all operations.
- AccessPointNotFound
  The specified load balancer could not be found.
  - HTTP Status Code: 400
- InvalidSecurityGroup
  One or more of the specified security groups do not exist.
  - HTTP Status Code: 400

Examples
Sample Request
The example below applies the security groups MySecurityGroup-XXXXX and MySecurityGroup-YYYYY security groups to the load balancer with the name MyLB01.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/?
SecurityGroups.member.1=MySecurityGroup-XXXXX
&SecurityGroups.member.2=MySecurityGroup-YYYYY
5.2.3.2 AttachLoadBalancerToSubnets

Description
Attaches one or more subnets to the specified load balancer.
The load balancer evenly distributes requests across all registered subnets.

Request Parameters
Refer to 'Common Parameters' for details on standard parameter information used by all actions.

- LoadBalancerName
  Name of the load balancer.
The name must be unique among the load balancers in the projects to which the account belongs.
- Type: String
- Required: Yes
- Subnets.member.N
  List of subnet IDs to attach to the load balancer.
• Type: String list
• Required: Yes

Response
The following status code is returned.
• Normal response code
  This operation was accepted normally.
  • HTTP Status Code: 200

Response Elements
The following element is returned in a structure called the AttachLoadBalancerToSubnetsResult.
• Subnets
  List of subnet IDs attached to the load balancer.
  • Type: String list

Errors
Refer to "Common Errors" for details on error information common to all operations.
• AccessPointNotFound
  The specified load balancer could not be found
  • HTTP Status Code: 400
• InvalidConfigurationRequest
  Requested configuration change is invalid.
  • HTTP Status Code: 409
• InvalidSubnet
  The Virtual system has no Internet gateway.
  • HTTP Status Code: 400
• SubnetNotFound
  One or more subnets were not found.
  • HTTP Status Code: 400

Examples

Sample Request
The example below attaches the subnet-3561b05e to the load balancer with the name MyLB01.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/?
Subnets.member.1=subnet-3561b05e
&LoadBalancerName=MyLB01
&Version=2014-11-01
&Action=AttachLoadBalancerToSubnets

Sample Response (XML)

```xml
<AttachLoadBalancerToSubnetsResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">
  <AttachLoadBalancerToSubnetsResult>
    <Subnets>
      <member>subnet-119f0078</member>
      <member>subnet-3561b05e</member>
    </Subnets>
  </AttachLoadBalancerToSubnetsResult>
</AttachLoadBalancerToSubnetsResponse>
```
5.2.3.3 ConfigureHealthCheck

**Description**

Specifies the health check settings to use when evaluating the health state of the distribution destination instances of the specified load balancer.

If you do not specify the health check settings in the API, the following settings will be used:

- **Interval:** 30
- **Timeout:** 5
- **HealthyThreshold:** 10
- **UnhealthyThreshold:** 2
- **Target:**
  - protocol:port
  - protocol: Value of InstanceProtocol of the listener.
  - port: Value of InstancePort of the listener.
  - url: / when the protocol is HTTP or HTTPS.

**Request Parameters**

Refer to "Common Parameters" for details on standard parameter information used by all actions.

- **LoadBalancerName**
  - Name of the load balancer.
  - The name must be unique among the load balancers in the projects to which the account belongs.
  - **Type:** String
  - **Required:** Yes
- **HealthCheck**
  - Setting information for the health check.
The protocol and port number to be specified for the target of `HealthCheck` must match the InstanceProtocol and InstancePort specified in `Listener` of the load balancer with the name specified in `LoadBalancerName`.

- Type: `HealthCheck`
- Required: Yes

### Response

The following status code is returned.

- Normal response code
  
  This operation was accepted normally.
  
  - HTTP Status Code: 200

### Response Elements

The following element is returned in a structure called `ConfigureHealthCheckResult`.

- HealthCheck
  
  Health check information that is updated for distribution destination instances
  
  - Type: `HealthCheck`

### Errors

Refer to "Common Errors" for details on error information common to all operations.

- AccessPointNotFound
  
  The specified load balancer could not be found
  
  - HTTP Status Code: 400

### Examples

#### Sample Request

The example below configures a health check target of HTTP:80/ping, implementation interval of 30 seconds, response timeout of 3 seconds, failure decision threshold of 2 times, and restore decision threshold of 2 times, for the distribution destination instances of the load balancer named MyLB01.


#### Sample response (XML)

```
<ConfigureHealthCheckResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">
  <ConfigureHealthCheckResult>
    <HealthCheck>
      <Interval>30</Interval>
      <Target>HTTP:80</Target>
      <HealthyThreshold>2</HealthyThreshold>
      <Timeout>3</Timeout>
      <UnhealthyThreshold>2</UnhealthyThreshold>
    </HealthCheck>
  </ConfigureHealthCheckResult>
</ConfigureHealthCheckResponse>
```
Sample Response (JSON)

```json
{
  "ConfigureHealthCheckResponse": {
    "ConfigureHealthCheckResult": {
      "HealthCheck": {
        "Interval": "30",
        "Target": "HTTP:80",
        "HealthyThreshold": "2",
        "Timeout": "3",
        "UnhealthyThreshold": "2"
      }
    },
    "ResponseMetadata": {
      "RequestId": "83c88b9d-12b7-11e3-8b82-87b12EXAMPLE"
    }
  }
}
```

5.2.3.4 CreateLBCookieStickinessPolicy

**Description**

Generates a session stickiness policy.

This policy can be associated only with HTTP/HTTPS listeners.

For this policy, it is necessary to configure the listener that will be applied by `SetLoadBalancerPoliciesOfListener`.

When this policy is specified, the load balancer specifies the cookie information for identifying distribution destination instances in the response packet.

When this cookie information is specified for requests from the client, the load balancer assigns the information to the specified instance.

Information related to the session expiration period specified in the policy is appended to the cookie information for identifying instances.

**Request parameters**

Refer to "Common Parameters" for details on standard parameter information used by all actions.

- **CookieExpirationPeriod**
  
  Maximum period for holding a session using cookies.

  The time is specified in seconds, from 1 to 2147483647.

  If this parameter is omitted, the expiration period will not be set.

  - **Type**: Long
  - **Default**: n/a
  - **Required**: No
This parameter is an elapsed time from the last access. In order to time out with the setting value of this parameter, the following setting is required.
• Cookie setting is enabled by definition of load balancer.
• You are accessing with a browser that supports the CookieMax - Age attribute (IE 9 or later, Chrome, firefox etc) and cookies are valid in the browser.

• LoadBalancerName
  Name of the load balancer that will use the policies.
  • Type: String
  • Required: Yes
• PolicyName
  Name of the policy to be created.
The name must be unique among the policies that can be used by the target load balancer.
  • Type: String
  • Required: Yes

Response
The following status code is returned.
• Normal response code
  This operation was accepted normally.
  • HTTP Status Code: 200

Response Elements
None.

Errors
Refer to "Common Errors" for details on error information common to all operations.
• AccessPointNotFound
  The specified load balancer could not be found.
  • HTTP Status Code: 400
• DuplicatePolicyName
  Policy with the same name exists for this load balancer. Please choose another name.
  • HTTP Status Code: 400
• TooManyPolicies
  Quota for number of policies for this load balancer has already been reached.
  • HTTP Status Code: 400

Examples
Sample Request
The example below created a session expiration period of 60 seconds for the policy named MyLoadBalancerCookiePolicy, for the load balancer named MyLB01.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/?
CookieExpirationPeriod=60
&LoadBalancerName=MyLB01&PolicyName=MyLoadBalancerCookiePolicy
&Version=2014-11-01
&Action=CreateLBCookieStickinessPolicy
5.2.3.5 CreateLoadBalancer

Description

Creates a load balancer. If load balancer creation completes successfully, notification of a unique DNS name is sent. Up to 20 load balancers can be created for projects to which the account belongs. When creating a load balancer, SSLNegotiationPolicy is set as default.

Request parameters

Refer to "Common Parameters" for details on standard parameter information used by all actions.

• Listeners.member.N
  List of listeners, including LoadBalancerPort, InstancePort, and Protocol.
  • Type: Listener list
  • Required: Yes
• LoadBalancerName
  Name of the load balancer.
  The name must be unique among the load balancers in the projects to which the account belongs.
  Specify the value using up to 30 characters.
  You can specify alphanumeric characters and hyphens (-).
  • Type: String
  • Required: Yes
• Scheme
  Type of the load balancer.
  Specify public to create a load balancer over the Internet.
  Specify internal to create a load balancer from a private network.
  • Type: String
  • Default: public
• Valid values: public | internal
• Required: No

• SecurityGroups.member.N
  List of security group IDs.
  If omitted, the default security group of the user's project will be used.
  • Type: String list
  • Required: No

• Subnets.member.N
  List of subnet IDs.
  Specify the same subnet as the distribution destination instance that is to be registered in the following cases.
  • When using the health check function for VM instance using autoscaling (AutoScaling)
  • When monitoring load balancer monitoring items using the monitoring service
  • Type: String list
  • Required: Yes

• Grade
  Grade of the load balancer (performance type).
  Select from a standard grade load balancer (Standard), medium performance grade load balancer (Middle), or high performance grade load balancer (High).
  • Type: String
  • Default: Standard
  • Valid values: Standard | Middle | High
  • Required: No

Response
The following status code is returned.
• Normal response code
  This operation was accepted normally.
  • HTTP Status Code: 200

Response Elements
The following is returned in a structure called the CreateLoadBalancerResult.
• DNSName
  DNS name of load balancer.
  • Type: String

Errors
Refer to "Common Errors" for details on error information common to all operations.
• CertificateNotFound
  The specified SSL ID does not refer to a valid SSL certificate in the Key Management Service.
  • HTTP Status Code: 400
• DuplicateAccessPointName
  Load balancer name already exists for this account. Please choose another name.
  • HTTP Status Code: 400
• InvalidConfigurationRequest
  Requested configuration change is invalid.
  • HTTP Status Code: 409
• InvalidScheme
Invalid value for scheme. Scheme can only be specified for load balancers in the Virtual system.
  • HTTP Status Code: 400
  • InvalidSecurityGroup
    One or more of the specified security groups do not exist.
    • HTTP Status Code: 400
  • InvalidSubnet
    The Virtual system has no Internet gateway.
    • HTTP Status Code: 400
  • SubnetNotFound
    One or more subnets were not found.
    • HTTP Status Code: 400
  • TooManyAccessPoints
    The quota for the number of load balancers has already been reached.
    • HTTP Status Code: 400

Examples

Sample Request
The example below creates a load balancer named MyLB01 and a listener for the 80/http port/protocol for front-end and back-end connections.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/?LoadBalancerName=MyLB01
&Listeners.member.1.LoadBalancerPort=80
&Listeners.member.1.InstancePort=80
&Listeners.member.1.Protocol=http
&Listeners.member.1.InstanceProtocol=http
&Scheme=internal
&Subnets.member.1=subnet-3561b05d
&Version=2014-11-01
&Action=CreateLoadBalancer

Sample response (XML)

<CreateLoadBalancerResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/
loadbalancing/api/v1.0">
<CreateLoadBalancerResult>
<DNSName>MyLB01-1234567890.aa.bbbb.cccc.dddd</DNSName>
</CreateLoadBalancerResult>
<ResponseMetadata>
<RequestId>1549581b-12b7-11e3-895e-1334aEXAMPLE</RequestId>
</ResponseMetadata>
</CreateLoadBalancerResponse>

Sample Response (JSON)

```json
{
  "CreateLoadBalancerResponse": {
    "CreateLoadBalancerResult": {
      "DNSName": "MyLB01-1234567890.aa.bbbb.cccc.dddd"
    },
    "ResponseMetadata": {
      "RequestId": "1549581b-12b7-11e3-895e-1334aEXAMPLE"
    }
  }
}
```
5.2.3.6 CreateLoadBalancerListeners

**Description**

Creates one or more listeners for the port specified in the load balancer.

If a listener for the specified LoadBalancerPort exists, InstancePort, InstanceProtocol and SSLCertificateId values must match the existing listener's.

To change the InstancePort and/or Protocol for an existing listener, re-create the load balancer.

In the case specifying multiple listeners, it is necessary to match their InstanceProtocol and InstancePort values.

If combinations of InstancePort and InstanceProtocol are different, it is necessary to create a load balancer for each combination.

**Request parameters**

Refer to "Common Parameters" for details on standard parameter information used by all actions.

- **Listeners.member.N**
  List of listeners, including LoadBalancerPort, InstancePort, Protocol, and SSLCertificateId.
  - Type: Listener list
  - Required: Yes
- **LoadBalancerName**
  Name of the load balancer.
  - Type: String
  - Required: Yes

**Response**

The following status code is returned.

- Normal response code
  This operation was accepted normally.
  - HTTP Status Code: 200

**Response Elements**

None.

**Errors**

Refer to "Common Errors" for details on error information common to all operations.

- **AccessPointNotFound**
  The specified load balancer could not be found.
  - HTTP Status Code: 400
- **CertificateNotFound**
  The specified SSL ID does not refer to a valid SSL certificate in the Key Management Service.
  - HTTP Status Code: 400
- **DuplicateListener**
  A listener already exists for the given LoadBalancerName and LoadBalancerPort, but with a different InstancePort, Protocol, or SSLCertificateId.
  - HTTP Status Code: 400
- **InvalidConfigurationRequest**
Requested configuration change is invalid.

- HTTP Status Code: 409

**Examples**

**Sample Request**

The example below creates a listener for the 443/https port/protocol for the front-end connection and 80/http port/protocol for the back-end connection for the load balancer named MyLB01.

```plaintext
https://loadbalancing.(regionName).cloud.global.fujitsu.com/?
&Listeners.member.1.Protocol=https
&Listeners.member.1.LoadBalancerPort=443
&Listeners.member.1.InstancePort=80
&Listeners.member.1.InstanceProtocol=http
&Listeners.member.1.SSLCertificateId=1232d7bf-8f28-4cc7-a63d-44e21885306d
&LoadBalancerName=MyLB01
&Version=2014-11-01
&Action=CreateLoadBalancerListeners
```

**Sample Response (XML)**

```xml
<CreateLoadBalancerListenersResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">
  <CreateLoadBalancerListenersResult/>
  <ResponseMetadata>
    <RequestId>1549581b-12b7-11e3-895e-1334aEXAMPLE</RequestId>
  </ResponseMetadata>
</CreateLoadBalancerListenersResponse>
```

**Sample response (JSON)**

```json
{
  "CreateLoadBalancerListenersResponse": {
    "CreateLoadBalancerListenersResult": {
    },
    "ResponseMetadata": {
      "RequestId": "1549581b-12b7-11e3-895e-1334aEXAMPLE"
    }
  }
}
```

**5.2.3.7 CreateLoadBalancerPolicy**

**Description**

Creates a policy including required attributes according to its type. Up to 100 policies can be created for each load balancer.

**Request Parameters**

Refer to "Common Parameters" for details on standard parameter information used by all actions.

- **LoadBalancerName**
  Name of the load balancer.
• Type: String
• Required: Yes
• PolicyAttributes.member.N
  List of attributes related to the policy.
  • Type: PolicyAttributelist
  • Required: Yes
• PolicyName
  Name of the policy to be created.
  The name must be unique among the policies that can be used by the target load balancer.
  • Type: String
  • Required: Yes
• PolicyTypeName
  Type name of the policy to be created.
  • Type: String
  • Required: Yes
  The following can be specified.
  SSLNegotiationPolicyType
  An SSL cryptographic protocol policy.
  It is possible to set to Listener, which uses the protocol HTTPS and SSL.

Response
The following status code is returned.
• Normal response code
  This operation was accepted normally.
  • HTTP Status Code: 200

Response Elements
None.

Errors
Refer to "Common Errors" for details on error information common to all operations.
• AccessPointNotFound
  The specified load balancer could not be found.
  • HTTP Status Code: 400
• DuplicatePolicyName
  Policy with the same name exists for this load balancer. Please choose another name.
  • HTTP Status Code: 400
• InvalidConfigurationRequest
  Requested configuration change is invalid.
  • HTTP Status Code: 409
• PolicyTypeNotFound
  One or more of the specified policy types do not exist.
  • HTTP Status Code: 400
• PolicyNotFound
  One or more specified policies were not found.
  • HTTP Status Code: 400
• TooManyPolicies
  Quota for number of policies for this load balancer has already been reached.
Examples

Sample request 1

The example below creates a policy named MySSLNegotiationPolicy, which has a valid encryption protocol specified, for the load balancer named MyLB01.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/
?LoadBalancerName=MyLB01
&PolicyAttributes.member.1.AttributeName=Protocol-SSLv3
&PolicyAttributes.member.1.AttributeValue=true
&PolicyAttributes.member.2.AttributeName=Protocol-TLSv1
&PolicyAttributes.member.2.AttributeValue=true
&PolicyAttributes.member.3.AttributeName=Protocol-TLSv1.1
&PolicyAttributes.member.3.AttributeValue=true
&PolicyAttributes.member.4.AttributeName=Protocol-TLSv1.2
&PolicyAttributes.member.4.AttributeValue=true
&PolicyName=MySSLNegotiationPolicy
&PolicyTypeName=SSLNegotiationPolicyType
&Version=2014-11-01
&Action=CreateLoadBalancerPolicy

Sample request 2

The example below creates a policy named MySSLNegotiationPolicy, which has the same valid encryption protocol and cipher suite as those in the predefined security policy (LBServiceSecurityPolicy-2017-05), for the load balancer named "MyLB01".

https://loadbalancing.(regionName).cloud.global.fujitsu.com/
?LoadBalancerName=MyLB01
&PolicyAttributes.member.1.AttributeName=Reference-Security-Policy
&PolicyAttributes.member.1.AttributeValue=LBServiceSecurityPolicy-2017-05
&PolicyName=MySSLNegotiationPolicy
&PolicyTypeName=SSLNegotiationPolicyType
&Version=2014-11-01
&Action=CreateLoadBalancerPolicy

Sample request 3

The example below creates a policy named MySSLNegotiationPolicy, which has a valid encryption protocol and cipher suite specified, for the load balancer named "MyLB01".

https://loadbalancing.(regionName).cloud.global.fujitsu.com/
?LoadBalancerName=MyLB01
&PolicyAttributes.member.1.AttributeName=Protocol-TLSv1.2
&PolicyAttributes.member.1.AttributeValue=true
&PolicyAttributes.member.2.AttributeName=ECDHE-RSA-AES256-GCM-SHA384
&PolicyAttributes.member.2.AttributeValue=true
&PolicyAttributes.member.3.AttributeName=ECDHE-ECDSA-AES256-GCM-SHA384
&PolicyAttributes.member.3.AttributeValue=true
&PolicyAttributes.member.4.AttributeName=DHE-RSA-AES256-GCM-SHA384
&PolicyAttributes.member.4.AttributeValue=true
&PolicyAttributes.member.5.AttributeName=ECDHE-RSA-AES128-GCM-SHA256
&PolicyAttributes.member.5.AttributeValue=true
&PolicyAttributes.member.6.AttributeName=ECDHE-ECDSA-AES128-GCM-SHA256
&PolicyAttributes.member.6.AttributeValue=true
&PolicyAttributes.member.7.AttributeName=DHE-RSA-AES128-GCM-SHA256
&PolicyAttributes.member.7.AttributeValue=true
&PolicyName=MySSLNegotiationPolicy
&PolicyTypeName=SSLNegotiationPolicyType
5.2.3.8 CreateSorryServerRedirectionPolicy

Description
Creates a policy for redirecting to the sorry server when unable to distribute the client request because there are no distribution destination instances in active state.
This policy can be associated only with HTTP/HTTPS listeners.
For this policy, it is necessary to configure the listener that will be applied by SetLoadBalancerPoliciesOfListener.
When this policy is specified, the specified location information is set in the response packet when the load balancer is unable to assign requests to distribution destination instances.

Request parameters
Refer to "Common Parameters" for details on standard parameter information used by all actions.

• Location
  URI of the redirection destination location.
  • Type: String
  • Required: Yes
• LoadBalancerName
  Name of the load balancer that will use the policies.
  • Type: String
  • Required: Yes
• PolicyName
  Name of the policy to be created.
  The name must be unique among the policies that can be used by the target load balancer.
  • Type: String
• Required: Yes

**Response**
The following status code is returned.
• Normal response code
  This operation was accepted normally.
  • HTTP Status Code: 200

**Response Elements**
None.

**Errors**
Refer to "Common Errors" for details on error information common to all operations.
• AccessPointNotFound
  The specified load balancer could not be found.
  • HTTP Status Code: 400
• DuplicatePolicyName
  Policy with the same name exists for this load balancer. Please choose another name.
  • HTTP Status Code: 400

**Examples**

**Sample Request**
The example below creates a policy named MyPolicy at the redirection destination location http://XXXXXXXX for the load balancer named MyLB01.

```
&LoadBalancerName=MyLB01&PolicyName=MyPolicy
&Version=2014-11-01
&Action=CreateSorryServerRedirectionPolicy
```

**Sample Response (XML)**

```
<CreateSorryServerRedirectionPolicyResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">
<CreateSorryServerRedirectionPolicyResult/>
<ResponseMetadata>
  <RequestId>99a693e9-12b8-11e3-9ad6-bf3e4EXAMPLE</RequestId>
</ResponseMetadata>
</CreateSorryServerRedirectionPolicyResponse>
```

**Sample Response (JSON)**

```
{
  "CreateSorryServerRedirectionPolicyResponse": {
    "CreateSorryServerRedirectionPolicyResult": {},
    "ResponseMetadata": {
      "RequestId": "99a693e9-12b8-11e3-9ad6-bf3e4EXAMPLE"
    }
  }
}
```
5.2.3.9 DeleteLoadBalancer

Description
Deletes the specified load balancer.
If re-creating a load balancer, it is necessary to reconfigure all its settings.
The DNS name associated with a deleted load balancer can no longer be used.
Once deleted, the load balancer name and the related DNS logs are erased, and the data sent to
that IP address will not arrive at the distribution destination instances.
This API can be used only by users with account privileges belonging to the same project as the
account used when creating the load balancer.
If the load balancer does not exist or has already been deleted, the call to this API will still be
successful.

Request Parameters
Refer to "Common Parameters" for details on standard parameter information used by all
actions.

• LoadBalancerName
  Name of the load balancer.
  • Type: String
  • Required: Yes

Response
The following status code is returned.

• Normal response code
  This operation was accepted normally.
  • HTTP Status Code: 200

Response Elements
None.

Errors
None.

Examples

Sample request
The example below deletes the load balancer named MyLB01.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/?LoadBalancerName=MyLB01
&Version=2014-11-01
&Action=DeleteLoadBalancer

Sample response (XML)

<pre>&lt;DeleteLoadBalancerResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/
loadbalancing/api/v1.0"&gt;
</pre>
Sample response (JSON)

```json
{
    "DeleteLoadBalancerResponse": {
        "DeleteLoadBalancerResult": {},
        "ResponseMetadata": {
            "RequestId": "f6dd8353-eb6b-6b4fd32e4f05"
        }
    }
}
```

5.2.3.10 DeleteLoadBalancerListeners

**Description**

Deletes the listener of the specified port number from the load balancer.
This API cannot be used to set the number of listeners to 0.

**Request parameters**

Refer to "Common Parameters" for details on standard parameter information used by all actions.

- **LoadBalancerName**
  Name of the load balancer.
  - Type: String
  - Required: Yes

- **LoadBalancerPorts.member.N**
  Front-end port number of the listener for the load balancer that is to be deleted.
  - Type: Integer list
  - Required: Yes

**Response**

The following status code is returned.

- Normal response code
  This operation was accepted normally.
  - HTTP Status Code: 200

**Response Elements**

None.

**Errors**

Refer to "Common Errors" for details on error information common to all operations.

- **AccessPointNotFound**
  The specified load balancer could not be found
  - HTTP Status Code: 400
• InvalidConfigurationRequest
  Requested configuration change is invalid.
• HTTP Status Code: 409

Examples

Sample Request
The example below delete the listener of port number 22 for the load balancer named MyLB01.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/?LoadBalancerName=MyLB01
&Version=2014-11-01
&Action=DeleteLoadBalancerListeners
&LoadBalancerPorts.member.1=22

Sample response (XML)

```xml
<DeleteLoadBalancerListenersResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">
  <DeleteLoadBalancerListenersResult/>
  <ResponseMetadata>
    <RequestId>f6dd8353-eb6b-6b4fd32e4f05</RequestId>
  </ResponseMetadata>
</DeleteLoadBalancerListenersResponse>
```

Sample response (JSON)

```json
{
  "DeleteLoadBalancerListenersResponse": {
    "DeleteLoadBalancerListenersResult": {
    },
    "ResponseMetadata": {
      "RequestId": "f6dd8353-eb6b-6b4fd32e4f05"
    }
  }
}
```

5.2.3.11 DeleteLoadBalancerPolicy

Description
Deletes a policy from the specified load balancer.
Policies not set to the listener can be deleted.

Request Parameters
Refer to "Common Parameters" for details on standard parameter information used by all actions.
• LoadBalancerName
  Name of the load balancer.
• Type: String
• Required: Yes
• PolicyName
  >Name of the policy to be deleted.
• Type: String
• Required: Yes

**Response**
The following status code is returned.
• Normal response code
  This operation was accepted normally.
  • HTTP Status Code: 200

**Response Elements**
None.

**Errors**
Refer to "Common Errors" for details on error information common to all operations.
• **AccessPointNotFound**
  The specified load balancer could not be found.
  • HTTP Status Code: 400
• **InvalidConfigurationRequest**
  Requested configuration change is invalid.
  • HTTP Status Code: 409
• **PolicyNotFound**
  One of more specified policies were not found.
  • HTTP Status Code: 400

**Examples**

**Sample Request**
The example below deletes the MySSLNegotiationPolicy that was created by the load balancer named MyLB01.

```
https://loadbalancing.(regionName).cloud.global.fujitsu.com/?LoadBalancerName=MyLB01
&PolicyName=MySSLNegotiationPolicy
&Version=2014-11-01
&Action=DeleteLoadBalancerPolicy
```

**Sample response (XML)**

```
<DeleteLoadBalancerPolicyResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">
  <DeleteLoadBalancerPolicyResult/>
  <ResponseMetadata>
    <RequestId>f6dd8353-eb6b-6b4fd32e4f05</RequestId>
  </ResponseMetadata>
</DeleteLoadBalancerPolicyResponse>
```

**Sample Response (JSON)**

```
{
  "DeleteLoadBalancerPolicyResponse": {
    "DeleteLoadBalancerPolicyResult": {}
  }
}
```
5.2.3.12 DeregisterInstancesFromLoadBalancer

Description
Deregisters the specified distribution destination instances from the specified load balancer. After a distribution destination instance is deregistered, it no longer receives traffic from the load balancer.

This API can be used only by users with account privileges belonging to the same project as the account used when creating the load balancer.

Refer to "DescribeLoadBalancers" to check if the distribution destination instances have been deregistered from the load balancer.

Request parameters
Refer to "Common Parameters" for details on standard parameter information used by all actions.

- **Instances.member.N**
  List of distribution destination instance IDs to deregister.
  - Type: Instance list
  - Required: Yes

- **LoadBalancerName**
  Name of the load balancer.
  - Type: String
  - Required: Yes

Response
The following status code is returned.

- Normal response code
  This operation was accepted normally.
  - HTTP Status Code: 200

Response Elements
The following element is returned in a structure called the DeregisterInstancesFromLoadBalancerResult.

- **Instances**
  List of remaining distribution destination instances registered with the updated load balancer.
  - Type: [InstanceDescription] list

Errors
Refer to "Common Errors" for details on error information common to all operations.

- **AccessPointNotFound**
  The specified load balancer could not be found.
  - HTTP Status Code: 400

- **InvalidEndPoint**
  The specified EndPoint is not valid.
• HTTP Status Code: 400

Examples

Sample Request

The example below deregisters the distribution destination instance with the ID i-e3677ad7 from the load balancer named MyLB01.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/?
Instances.member.1.InstanceId=i-e3677ad7
&LoadBalancerName=MyLB01
&Version=2014-11-01
&Action=DeregisterInstancesFromLoadBalancer

Sample Response (XML)

<DeregisterInstancesFromLoadBalancerResponse xmlns="http://
docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">
  <DeregisterInstancesFromLoadBalancerResult>
    <Instances>
      <member>
        <InstanceId>i-6ec63d59</InstanceId>
        <PortId>p-6ec63d59</PortId>
      </member>
      <member>
        <InstanceId>i-34cde612</InstanceId>
      </member>
    </Instances>
  </DeregisterInstancesFromLoadBalancerResult>
  <ResponseMetadata>
    <RequestId>83c88b9d-12b7-11e3-8b82-87b12EXAMPLE</RequestId>
  </ResponseMetadata>
</DeregisterInstancesFromLoadBalancerResponse>

Sample Response (JSON)

```json
{
  "DeregisterInstancesFromLoadBalancerResponse": {
    "DeregisterInstancesFromLoadBalancerResult": {
      "Instances": {
        "member": [{
          "InstanceId": "i-6ec63d59",
          "PortId": "p-6ec63d59"
        }, {
          "InstanceId": "i-34cde612"
        }]
      }
    },  
    "ResponseMetadata": {
      "RequestId": "83c88b9d-12b7-11e3-8b82-87b12EXAMPLE"
    }
  }
}
```
5.2.3.13 DescribeLoadBalancerAttributes

**Description**
Describes the attributes for the specified load balancer.

**Request Parameters**
Refer to "Common Parameters" for details on standard parameter information used by all actions.
- **LoadBalancerName**
  Name of the load balancer.
  - Type: String
  - Required: Yes

**Response**
The following status code is returned.
- Normal response code
  This operation was accepted normally.
  - HTTP Status Code: 200

**Response Elements**
The following element is returned in a structure called the DescribeLoadBalancerAttributesResult.
- **LoadBalancerAttributes**
  Information about the load balancer attributes.
  - Type: LoadBalancerAttributes

**Errors**
Refer to "Common Errors" for details on error information common to all operations.
- **AccessPointNotFound**
  The specified load balancer could not be found.
  - HTTP Status Code: 400

**Examples**

**Sample Request**
The example below retrieves information about the attributes of the load balancer named MyLB01.

```
https://loadbalancing.(regionName).cloud.global.fujitsu.com/?
Instances.member.1.InstanceId=i-e3677ad7
&LoadBalancerName=MyLB01
&Version=2014-11-01
&Action=DescribeLoadBalancerAttributes
```

**Sample Response (XML)**

```
<DescribeLoadBalancerAttributesResponse xmlns="http://
docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">
  <DescribeLoadBalancerAttributesResult>
    <LoadBalancerAttributes/>
  </DescribeLoadBalancerAttributesResult>
</DescribeLoadBalancerAttributesResponse>
```
<ConnectionSettings>
  <IdleTimeout>60</IdleTimeout>
</ConnectionSettings>
</LoadBalancerAttributes>
</DescribeLoadBalancerAttributesResult>
<ResponseMetadata>
  <RequestId>83c88b9d-12b7-11e3-8b82-87b13EXAMPLE</RequestId>
</ResponseMetadata>
</DescribeLoadBalancerAttributesResponse>

Sample Response (JSON)

{
  "DescribeLoadBalancerAttributesResponse": {
    "DescribeLoadBalancerAttributesResult": {
      "LoadBalancerAttributes": {
        "ConnectionSettings": {
          "IdleTimeout": "60"
        }
      }
    },
    "ResponseMetadata": {
      "RequestId": "83c88b9d-12b7-11e3-8b82-87b13EXAMPLE"
    }
  }
}

5.2.3.14 DescribeLoadBalancerPolicies

Description
Retrieves policy information from the load balancer.
Specifying the name of load balancer, all policies that can be used with load balancer are retrieved.
If omitted, all policies that the service provides will be retrieved.
Specifying the name of policy, only that policy will be retrieved.

Request Parameters
Refer to "Common Parameters" for details on standard parameter information used by all actions.
  • LoadBalancerName
    Name of the load balancer.
    • Type: String
    • Required: No
  • PolicyNames.member.N
    Name of the policy.
    • Type: String list
    • Required: No

Response
The following status code is returned.
  • Normal response code
    This operation was accepted normally.
    • HTTP Status Code: 200
Response Elements

The following element is returned in a structure called the DescribeLoadBalancerPoliciesResult.

* PolicyDescriptions
  The policy of the load balancer.
* Type: PolicyDescription list

Errors

Refer to "Common Errors" for details on error information common to all operations.

* AccessPointNotFound
  The specified load balancer could not be found.
  * HTTP Status Code: 400
* PolicyNotFound
  One or more specified policies were not found.
  * HTTP Status Code: 400

Examples

Sample Request

The example below retrieves information available on the load balancer named MyLB01.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/
?LoadBalancerName=MyLB01
&Version=2014-11-01
&Action=DescribeLoadBalancerPolicies

Sample Response (XML)

```xml
<DescribeLoadBalancerPoliciesResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">
  <DescribeLoadBalancerPoliciesResult>
    <PolicyDescriptions>
      <member>
        <PolicyName>MyLBStickinessPolicy</PolicyName>
        <PolicyTypeName>LBCookieStickinessPolicyType</PolicyTypeName>
        <PolicyAttributeDescriptions>
          <member>
            <AttributeName>CookieExpirationPeriod</AttributeName>
            <AttributeValue>60</AttributeValue>
          </member>
        </PolicyAttributeDescriptions>
      </member>
      <member>
        <PolicyName>ServiceSSLNegotiationPolicy</PolicyName>
        <PolicyTypeName>SSLNegotiationPolicyType</PolicyTypeName>
        <PolicyAttributeDescriptions>
          <member>
            <AttributeName>Reference-Security-Policy</AttributeName>
            <AttributeValue>LBServiceSecurityPolicy-2017-05</AttributeValue>
          </member>
          <member>
            <AttributeName>Protocol-SSLv3</AttributeName>
            <AttributeValue>false</AttributeValue>
          </member>
          <member>
            <AttributeName>Protocol-TLSv1</AttributeName>
            <AttributeValue>false</AttributeValue>
          </member>
        </PolicyAttributeDescriptions>
      </member>
    </PolicyDescriptions>
  </DescribeLoadBalancerPoliciesResult>
</DescribeLoadBalancerPoliciesResponse>
```
<member>
<AttributeName>Protocol-TLSv1.1</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>Protocol-TLSv1.2</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>IsDefault</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>ECDHE-RSA-AES256-GCM-SHA384</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>ECDHE-ECDSA-AES256-GCM-SHA384</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>ECDHE-RSA-AES256-SHA384</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>ECDHE-ECDSA-AES256-SHA384</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>ECDHE-RSA-AES256-SHA</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>ECDHE-ECDSA-AES256-SHA</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>DHE-RSA-AES256-GCM-SHA384</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>DHE-RSA-AES256-SHA256</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>DHE-RSA-AES256-SHA</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>DHE-RSA-CAMELLIA256-SHA</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>ECDH-RSA-AES256-GCM-SHA384</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>ECDH-ECDSA-AES256-GCM-SHA384</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>ECDH-RSA-AES256-SHA384</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
<AttributeName>ECDH-ECDSA-AES256-SHA384</AttributeName>
<AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>ECDH-RSA-AES256-SHA</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>ECDH-ECDSA-AES256-SHA</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>AES256-GCM-SHA384</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>AES256-SHA256</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>AES256-SHA</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>CAMELLIA256-SHA</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>ECDHE-RSA-AES128-GCM-SHA256</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>ECDHE-ECDSA-AES128-GCM-SHA256</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>ECDHE-RSA-AES128-SHA256</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>ECDHE-ECDSA-AES128-SHA256</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>ECDHE-RSA-AES128-SHA</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>ECDHE-ECDSA-AES128-SHA</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>DHE-RSA-AES128-GCM-SHA256</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>DHE-RSA-AES128-SHA256</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>DHE-RSA-AES128-SHA</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>DHE-RSA-CAMELLIA128-SHA</AttributeName>
  <AttributeValue>true</AttributeValue>
</member>
<member>
  <AttributeName>EDH-RSA-DES-CBC3-SHA</AttributeName>
  <AttributeValue>false</AttributeValue>
</member>
Sample Response (JSON)

```json
{
    "DescribeLoadBalancerPoliciesResponse": {
        "DescribeLoadBalancerPoliciesResult": {
            "PolicyDescriptions": [
                {
                    "PolicyName": "MyLBStickinessPolicy",
                    "PolicyTypeName": "LBCookieStickinessPolicyType",
                    "PolicyAttributeDescriptions": [
                        {
                            "AttributeName": "ECDH-RSA-AES128-GCM-SHA256",
                            "AttributeValue": true
                        },
                        {
                            "AttributeName": "ECDH-ECDSA-AES128-GCM-SHA256",
                            "AttributeValue": true
                        },
                        {
                            "AttributeName": "ECDH-RSA-AES128-SHA256",
                            "AttributeValue": true
                        },
                        {
                            "AttributeName": "ECDH-ECDSA-AES128-SHA256",
                            "AttributeValue": true
                        },
                        {
                            "AttributeName": "ECDH-RSA-AES128-SHA",
                            "AttributeValue": true
                        },
                        {
                            "AttributeName": "ECDH-ECDSA-AES128-SHA",
                            "AttributeValue": true
                        },
                        {
                            "AttributeName": "AES128-GCM-SHA256",
                            "AttributeValue": true
                        },
                        {
                            "AttributeName": "AES128-SHA256",
                            "AttributeValue": true
                        },
                        {
                            "AttributeName": "AES128-SHA",
                            "AttributeValue": true
                        },
                        {
                            "AttributeName": "CAMELLIA128-SHA",
                            "AttributeValue": true
                        },
                        {
                            "AttributeName": "DES-CBC3-SHA",
                            "AttributeValue": false
                        }
                    ]
                }
            ]
        }
    }
}
```
{
"AttributeName": "CookieExpirationPeriod",
"AttributeValue": "60"
}
]
}
},
{
"PolicyName": "ServiceSSLNegotiationPolicy",
"PolicyTypeName": "SSLNegotiationPolicyType",
"PolicyAttributeDescriptions": {
"member": [
{
"AttributeName": "Reference-Security-Policy",
"AttributeValue": "LBServiceSecurityPolicy-2017-05"
},
{
"AttributeName": "Protocol-SSLv3",
"AttributeValue": "false"
},
{
"AttributeName": "Protocol-TLSv1",
"AttributeValue": "false"
},
{
"AttributeName": "Protocol-TLSv1.1",
"AttributeValue": "true"
},
{
"AttributeName": "Protocol-TLSv1.2",
"AttributeValue": "true"
},
{
"AttributeName": "IsDefault",
"AttributeValue": "true"
},
{
"AttributeName": "ECDHE-RSA-AES256-GCM-SHA384",
"AttributeValue": "true"
},
{
"AttributeName": "ECDHE-ECDSA-AES256-GCM-SHA384",
"AttributeValue": "true"
},
{
"AttributeName": "ECDHE-RSA-AES256-SHA384",
"AttributeValue": "true"
},
{
"AttributeName": "ECDHE-ECDSA-AES256-SHA384",
"AttributeValue": "true"
},
{
"AttributeName": "ECDHE-RSA-AES256-SHA",
"AttributeValue": "true"
},
{
"AttributeName": "ECDHE-ECDSA-AES256-SHA",
"AttributeValue": "true"
},
{
"AttributeName": "DHE-RSA-AES256-GCM-SHA384",
"AttributeValue": "true"
},
{
"AttributeName": "DHE-RSA-AES256-SHA256",
"AttributeValue": "true"
},

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{
  "AttributeName": "ECDHE-ECDSA-AES128-SHA",
  "AttributeValue": "true"
},
{
  "AttributeName": "DHE-RSA-AES128-GCM-SHA256",
  "AttributeValue": "true"
},
{
  "AttributeName": "DHE-RSA-AES128-SHA256",
  "AttributeValue": "true"
},
{
  "AttributeName": "DHE-RSA-AES128-SHA",
  "AttributeValue": "true"
},
{
  "AttributeName": "DHE-RSA-CAMELLIA128-SHA",
  "AttributeValue": "true"
},
{
  "AttributeName": "EDH-RSA-DES-CBC3-SHA",
  "AttributeValue": "false"
},
{
  "AttributeName": "ECDH-RSA-AES128-GCM-SHA256",
  "AttributeValue": "true"
},
{
  "AttributeName": "ECDH-ECDSA-AES128-GCM-SHA256",
  "AttributeValue": "true"
},
{
  "AttributeName": "ECDH-RSA-AES128-SHA256",
  "AttributeValue": "true"
},
{
  "AttributeName": "ECDH-ECDSA-AES128-SHA256",
  "AttributeValue": "true"
},
{
  "AttributeName": "ECDH-RSA-AES128-SHA",
  "AttributeValue": "true"
},
{
  "AttributeName": "ECDH-ECDSA-AES128-SHA",
  "AttributeValue": "true"
},
{
  "AttributeName": "AES128-GCM-SHA256",
  "AttributeValue": "true"
},
{
  "AttributeName": "AES128-SHA256",
  "AttributeValue": "true"
},
{
  "AttributeName": "AES128-SHA",
  "AttributeValue": "true"
},
{
  "AttributeName": "CAMELLIA128-SHA",
  "AttributeValue": "true"
},
{
  "AttributeName": "DES-CBC3-SHA",
  "AttributeValue": "false"
}
5.2.3.15 DescribeLoadBalancers

Description
Retrieves detailed information of the created load balancer.
If a load balancer is specified, the call describes the specified load balancer.
If no load balancers are specified, the call describes the load balancers created using an account belonging to the same project as the account that issued this API.

Request Parameters
Refer to "Common Parameters" for details on standard parameter information used by all actions.

• LoadBalancerNames.member.N
  List of load balancers created by an account belonging to the project.
  • Type: String list
  • Required: No
  • Marker
    Reserved parameter.
    • Type: String
    • Required: No

Response
The following status code is returned.

• Normal response code
  This operation was accepted normally.
  • HTTP Status Code: 200

Response Elements
The following element is returned in a structure called the DescribeLoadBalancersResult.

• LoadBalancerDescriptions
  List of detailed information of a load balancer.
  • Type: LoadBalancerDescription list
• NextMarker
  Reserved parameter
  • Type: String

Errors
Refer to "Common Errors" for details on error information common to all operations.

• AccessPointNotFound
The specified load balancer could not be found.
• HTTP Status Code: 400

Examples

Sample Request
The example below retrieves information about the attributes of the load balancer named MyLB01.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/?
LoadBalancerNames.member.1=MyLB01
&Version=2014-11-01
&Action=DescribeLoadBalancers

Sample Response (XML)

```xml
<DescribeLoadBalancersResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">  
<DescribeLoadBalancersResult>  
  <LoadBalancerDescriptions>  
    <member>  
      <LoadBalancerName>MyLB01</LoadBalancerName>  
      <DNSName>MyLB01-3b9c2b0f028f40e09d6306887646c28b.loadbalancing-jeast-1.cloud.global.fujitsu.com</DNSName>  
      <State>InService</State>  
      <ListenerDescriptions>  
        <member>  
          <Listener>  
            <Protocol>HTTPS</Protocol>  
            <LoadBalancerPort>443</LoadBalancerPort>  
            <InstanceProtocol>HTTP</InstanceProtocol>  
            <InstancePort>80</InstancePort>  
            <SSLCertificateId>1232d7bf-8f28-4cc7-a63d-44e218853c6d</SSLCertificateId>  
          </Listener>  
        </member>  
      </ListenerDescriptions>  
      <PolicyNames>  
        <member>MyPolicy</member>  
      </PolicyNames>  
    </member>  
  </LoadBalancerDescriptions>  
  <Policies>  
    <LBCookieStickinessPolicies>  
      <member>  
        <PolicyName>MyLBCookieStickinessPolicy</PolicyName>  
        <CookieExpirationPeriod>60</CookieExpirationPeriod>  
      </member>  
    </LBCookieStickinessPolicies>  
    <OtherPolicies>  
      <member>  
        <PolicyName>MyPolicy</PolicyName>  
      </member>  
    </OtherPolicies>  
  </Policies>  
  <Subnets>  
    <member>MySubnet</member>  
  </Subnets>  
  <Instances>  
    <member>  
      <InstanceId>i-e4cbe38d</InstanceId>  
      <PortId>p-e4cbe38d</PortId>  
    </member>  
  </Instances>  
  <HealthCheck>  
    <!-- Health check details -->  
  </HealthCheck>  
</DescribeLoadBalancersResult>  
</DescribeLoadBalancersResponse>
```
Sample Response (JSON)

```
{
  "DescribeLoadBalancersResponse": {
    "DescribeLoadBalancersResult": {
      "LoadBalancerDescriptions": {
        "member": [
          {
            "LoadBalancerName": "MyLB01",
            "DNSName": "MyLB01-3b9c2b0f028f40e09d6306887646c28b.loadbalancing-jeast-1.cloud.global.fujitsu.com",
            "State": "InService",
            "ListenerDescriptions": {
              "member": [
                {
                  "Listener": {
                    "Protocol": "HTTPS",
                    "LoadBalancerPort": "443",
                    "InstanceProtocol": "HTTP",
                    "InstancePort": "80",
                    "SSLCertificateId": "1232d7bf-8f28-4cc7-a63d-44e218853c6d"
                  }
                }
              ],
              "PolicyNames": {
                "member": "MyPolicy"
              }
            }
          }
        ],
        "Policies": {
          "LBCookieStickinessPolicies": {
            "member": [
              {
                "PolicyName": "MyLoadBalancerCookieStickinessPolicy",
                "CookieExpirationPeriod": "60"
              }
            ]
          }
        }
      }
    }
  }
}
```
5.2.3.16 DetachLoadBalancerFromSubnets

**Description**
Detaches the specified subnets from the set of configured subnets for the specified load balancer.

After a subnet is detached, the load balancer balances the requests among the remaining subnets.

If the subnet does not exist or has already been deleted, the call to this API will still be successful.

**Request Parameters**
Refer to "Common Parameters" for details on standard parameter information used by all actions.

- **LoadBalancerName**
  Name of the load balancer to detach from.
- **Type**: String
  - **Required**: Yes
- **Subnets.member.N**
  List of subnet IDs to detach from the load balancer.
Type: String list
Required: Yes

Response
The following status code is returned.
• Normal response code
  This operation was accepted normally.
  • HTTP Status Code: 200

Response Elements
The following element is returned in a structure called the
DetachLoadBalancerFromSubnetsResult.
• Subnets
  List of subnet IDs attached to the load balancer.
  • Type: String list

Errors
Refer to "Common Errors" for details on error information common to all operations.
• AccessPointNotFound
  The specified load balancer could not be found.
  • HTTP Status Code: 400
• InvalidConfigurationRequest
  Requested configuration change is invalid.
  • HTTP Status Code: 409

Examples
Sample Request
The example below detaches the subnet with the ID MySubnet-XXXXX from the load balancer
named MyLB01.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/?Subnets.member.1=MySubnet-
XXXXX
&LoadBalancerName=MyLB01
&Version=2014-11-01
&Action=DetachLoadBalancerFromSubnets

Sample Response (XML)

```xml
<DetachLoadBalancerFromSubnetsResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0"/>
<DetachLoadBalancerFromSubnetsResult>
  <Subnets>
    <member>subnet-159f007c</member>
    <member>subnet-3561b05e</member>
  </Subnets>
</DetachLoadBalancerFromSubnetsResult>
<ResponseMetadata>
  <RequestId>07b1ecbc-1100-11e3-acaf-dd7edEXAMPLE</RequestId>
</ResponseMetadata>
</DetachLoadBalancerFromSubnetsResponse>
```
5.2.3.17 ModifyLoadBalancerAttributes

**Description**
Modifies the attributes of the specified load balancer. You can modify the period for maintaining the connection to the front and back ends of a load balancer in an idle state.

**Request parameters**
Refer to "Common Parameters" for details on standard parameter information used by all actions.
- LoadBalancerAttributes
  Information about the load balancer attributes.
  - Type: LoadBalancerAttributes
  - Required: Yes
- LoadBalancerName
  Name of the load balancer.
  - Type: String
  - Required: Yes

**Response**
The following status code is returned.
- Normal response code
  This operation was accepted normally.
- HTTP Status Code: 200

**Response Elements**
The following element is returned in a structure called the ModifyLoadBalancerAttributesResult.
- LoadBalancerAttributes
  Information about the load balancer attributes.
  - Type: LoadBalancerAttributes
- LoadBalancerName
  Name of the load balancer.
  - Type: String
Errors
Refer to "Common Errors" for details on error information common to all operations.
• AccessPointNotFound
  The specified load balancer could not be found.
• HTTP Status Code: 400

Examples

Sample Request
The example below modifies the ConnectionSettings attribute of the load balancer named MyLB01.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/?
LoadBalancerAttributes.ConnectionSettings.IdleTimeout=30
&LoadBalancerName=MyLB01
&Version=2014-11-01
&Action= ModifyLoadBalancerAttributes

Sample Response (XML)

<ModifyLoadBalancerAttributesResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">
  <ModifyLoadBalancerAttributesResult>
    <LoadBalancerName>MyLB01</LoadBalancerName>
    <LoadBalancerAttributes>
      <ConnectionSettings>
        <IdleTimeout>30</IdleTimeout>
      </ConnectionSettings>
    </LoadBalancerAttributes>
  </ModifyLoadBalancerAttributesResult>
  <ResponseMetadata>
    <RequestId>83c88b9d-12b7-11e3-8b82-87b13EXAMPLE</RequestId>
  </ResponseMetadata>
</ModifyLoadBalancerAttributesResponse>

Sample Response (JSON)

{
  "ModifyLoadBalancerAttributesResponse": {
    "ModifyLoadBalancerAttributesResult": {
      "LoadBalancerName": "MyLB01",
      "LoadBalancerAttributes": {
        "ConnectionSettings": {
          "IdleTimeout": "30"
        }
      }
    }
  },
  "ResponseMetadata": {
    "RequestId": "83c88b9d-12b7-11e3-8b82-87b13EXAMPLE"
  }
}

5.2.3.18 RegisterInstancesWithLoadBalancer
Description

Adds the specified instances as distribution destinations to the specified load balancer. After the instance is registered, the load will be distributed among it and the other existing instances.

Even if an IP address of a distribution destination instance registered to the load balancer is changed, the load will not be distributed to the new IP address.

When operations that involve the changing of IP addresses, such as the restarting of distribution destination instances when DHCP is enabled, or users manually changing the IP addresses of distribution destination instances when DHCP is disabled, it is necessary to delete the load balancer from the target distribution destination instances and reregister it.

Distribution destination instances must be started before being registered to a load balancer. Refer to "DeregisterInstancesFromLoadBalancer" for details on how to delete registered distribution destination instances from a load balancer.

This API can be used only by users with account privileges belonging to the same project as the account used when creating the load balancer.

Refer to "DescribeLoadBalancers" for details on how to check the status of registered distribution destination instances.

Request Parameters

Refer to "Common Parameters" for details on standard parameter information used by all actions.

- Instances.member.N
  List of instance IDs to register to the load balancer.
  - Type: Instance list
  - Required: Yes

- LoadBalancerName
  Name of the load balancer to register the instances to.
  The name must be unique among the load balancers in the projects to which the account belongs.
  - Type: String
  - Required: Yes

Response

The following status code is returned.

- Normal response code
  This operation was accepted normally.
  - HTTP Status Code: 200

Response Elements

The following element is returned in a structure called the RegisterInstancesWithLoadBalancerResult.

- Instances
  List of updated distribution destination instances of the load balancer.
  - Type: InstanceDescription list

Errors

Refer to "Common Errors" for details on error information common to all operations.

- AccessPointNotFound
  The specified load balancer was not found.
  - HTTP Status Code: 400
• InvalidEndPoint
The specified endpoint is invalid.
• HTTP Status Code: 400
• InvalidConfigurationRequest
The requested configuration change is invalid.
• HTTP Status Code: 409

Examples

Sample Request
The example below registers the distribution destination instance with the ID i-315b7e51 to the load balancer named MyLB01.

```
https://loadbalancing.(regionName).cloud.global.fujitsu.com/?
Instances.member.1.InstanceId=i-315b7e51
&LoadBalancerName=MyLB01
&Version=2014-11-01
&Action=RegisterInstancesWithLoadBalancer
```

The example below registers the distribution destination instance with the ID i-315b7e51 and port ID p-315b7e51 to the load balancer named MyLB01.

```
https://loadbalancing.(regionName).cloud.global.fujitsu.com/?
Instances.member.1.InstanceId=i-315b7e51
&LoadBalancerName=MyLB01
&Version=2014-11-01
&Action=RegisterInstancesWithLoadBalancer
```

Sample Response (XML)

```
<RegisterInstancesWithLoadBalancerResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">
  <RegisterInstancesWithLoadBalancerResult>
    <Instances>
      <member>
        <InstanceId>i-712cde1e</InstanceId>
      </member>
      <member>
        <InstanceId>i-315b7e51
          <PortId>p-315b7e51</PortId>
        </member>
    </Instances>
  </RegisterInstancesWithLoadBalancerResult>
  <ResponseMetadata>
    <RequestId>83c88b9d-12b7-11e3-8b82-87b12EXAMPLE</RequestId>
  </ResponseMetadata>
</RegisterInstancesWithLoadBalancerResponse>
```

Sample Response (JSON)

```
{
  "RegisterInstancesWithLoadBalancerResponse": {
    "RegisterInstancesWithLoadBalancerResult": {
      "Instances": [{
        "member": [
          
```
```
5.2.3.19 SetLoadBalancerListenerSSLCertificate

**Description**
Sets the certificate that terminates the specified listener's SSL connections.

The specified certificate replaces any prior certificate that was being used on the specified load balancer and port.

**Request Parameters**
Refer to "Common Parameters" for details on standard parameter information used by all actions.

- **LoadBalancerName**
  Name of the load balancer.
  - Type: String
  - Required: Yes

- **LoadBalancerPort**
  Port of the listener that uses the specified SSL certificate.
  - Type: Integer
  - Required: Yes

- **SSLCertificateId**
  Resource ID of the SSL certificate registered for the Key Management service.
  - Type: String
  - Required: Yes

**Response**
The following status code is returned.

- Normal response code
  This operation was accepted normally.
  - HTTP Status Code: 200

**Response Elements**
None.

**Errors**
Refer to "Common Errors" for details on error information common to all operations.

- **AccessPointNotFoundException**
  The specified load balancer could not be found.
• HTTP Status Code: 400
  • CertificateNotFound
    The specified SSL ID does not refer to a valid SSL certificate in the Key Management Service.
  • HTTP Status Code: 400
  • InvalidConfigurationRequest
    Requested configuration change is invalid.
  • HTTP Status Code: 409
  • ListenerNotFound
    Load balancer does not have a listener configured at the specified port.
  • HTTP Status Code: 400

Examples

Sample Request
The example below sets the SSL certificate with ID 5c349f63-a874-47ed-b09e-9da913cbbbde for port 443 and the load balancer named MyLB01.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/?LoadBalancerName=MyLB01
&SSLCertificateId=5c349f63-a874-47ed-b09e-9da913cbbbde
&LoadBalancerPort=443
&Version=2014-11-01
&Action=SetLoadBalancerListenerSSLCertificate

Sample Response (XML)

```
<SetLoadBalancerListenerSSLCertificateResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">
  <SetLoadBalancerListenerSSLCertificateResult/>
  <ResponseMetadata>
    <RequestId>83c88b9d-12b7-11e3-8b82-87b12EXAMPLE</RequestId>
  </ResponseMetadata>
</SetLoadBalancerListenerSSLCertificateResponse>
```

Sample Response (JSON)

```
{
  "SetLoadBalancerListenerSSLCertificateResponse": {
    "SetLoadBalancerListenerSSLCertificateResult": {
      "ResponseMetadata": {
        "RequestId": "83c88b9d-12b7-11e3-8b82-87b12EXAMPLE"
      }
    }
  }
}
```

5.2.3.20 SetLoadBalancerPoliciesOfListener

Description
Registers, deregisters, or changes policies applied to a listener of the load balancer.
If multiple listeners are set to ELB, all listeners apply a session stickiness policy and a SSL cryptographic protocol policy which are last registered.
Request Parameters
Refer to "Common Parameters" for details on standard parameter information used by all actions.
• LoadBalancerName
  Name of the load balancer.
  • Type: String
  • Required: Yes
• LoadBalancerPort
  Port number of front-end connections for the listeners using the policies.
  • Type: Integer
  • Required: Yes
• PolicyNames.member.N
  List of policies to be applied to the listeners.
  If the list is empty, all current policies will be removed from the listener.
  • Type: String list
  • Required: Yes

Response
The following status code is returned.
• Normal response code
  This operation was accepted normally.
  • HTTP Status Code: 200

Response Elements
None.

Errors
Refer to "Common Errors" for details on error information common to all operations.
• AccessPointNotFound
  The specified load balancer could not be found.
  • HTTP Status Code: 400
• InvalidConfigurationRequest
  Requested configuration change is invalid.
  • HTTP Status Code: 409
• ListenerNotFound
  Load balancer does not have a listener configured at the specified port.
  • HTTP Status Code: 400
• PolicyNotFound
  One or more of the specified policies were not found.
  • HTTP Status Code: 400

Examples
Sample Request
The example below applies the policy named MyLoadBalancerCookiePolicy to the listener in port 80 of the load balancer named MyLB01.

https://loadbalancing.(regionName).cloud.global.fujitsu.com/?
PolicyNames.member.1=MyLoadBalancerCookiePolicy
&LoadBalancerName=MyLB01
&LoadBalancerPort=80
&Version=2014-11-01
&Action=SetLoadBalancerPoliciesOfListener

Sample Response (XML)

```xml
<SetLoadBalancerPoliciesOfListenerResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/loadbalancing/api/v1.0">
  <SetLoadBalancerPoliciesOfListenerResult/>
  <ResponseMetadata>
    <RequestId>07b1ecbc-1100-11e3-acaf-dd7edEXAMPLE</RequestId>
  </ResponseMetadata>
</SetLoadBalancerPoliciesOfListenerResponse>
```

Sample Response (JSON)

```json
{
  "SetLoadBalancerPoliciesOfListenerResponse": {
    "SetLoadBalancerPoliciesOfListenerResult": {},
    "ResponseMetadata": {
      "RequestId": "07b1ecbc-1100-11e3-acaf-dd7edEXAMPLE"
    }
  }
}
```
Part 6: DNS service

Topics:

- Common information
- Zone and record management
6.1 Common information

6.1.1 Special Note

When using the DNS service, the following work is necessary.
- Create a project in "Eastern Japan Region 1 (jp-east-1)," and register in that project the user who will use the DNS service.
- Use a regional token.

6.1.2 General requirements

This section describes general requirements to use this API.
- Unless otherwise stated, the request parameters must be sent by using HTTP GET or HTTP PUT.
- If a value in the request parameter contains a character that cannot be used as is in the URL, it must be encoded using UTF-8.
  The following values are also required for this service:
- The user agent (User-Agent) string for the request of this service must be "FGCP-OS-API-CLIENT".

6.1.3 Common API request headers

Request headers

**X-Auth-Token**
Token to retrieve when user authentication is performed

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>1..1</td>
</tr>
</tbody>
</table>

**Content-Type**
This can only be specified for POST requests
Specify "application/xml"

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>0..1</td>
</tr>
</tbody>
</table>

**Accept**
Specify "application/xml"

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>0..1</td>
</tr>
</tbody>
</table>

6.1.4 Common API response headers
Response headers

**x-fj-request-id**
ID that uniquely identifies the request. This is required when contacting support staff to troubleshoot an issue. UUID format (example: 647cd254-e0d1-44a9-af61-1d6d86ea6b77)

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>1..1</td>
</tr>
</tbody>
</table>

### 6.1.5 Common API error codes

**- Authentication error**

**HTTP status**

**Status**
The following error codes can be returned for the request.

| 401: | Authentication error |

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int</td>
<td>1..1</td>
</tr>
</tbody>
</table>

**Response elements**

n/a

**Example of response**

HTTP/1.1 401 Unauthorized
Date: Fri, 06 Jun 2014 11:00:38 GMT

**- Access denied**

**HTTP status**

**Status**
The following error codes can be returned for the request.

| 403: | Access denied |

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int</td>
<td>1..1</td>
</tr>
</tbody>
</table>

**Response elements**

**AccessDeniedException**
Envelope of error response.
### Data type

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>None</td>
<td>Message</td>
</tr>
</tbody>
</table>

### Message

Error message.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>AccessDeniedException</td>
<td>None</td>
</tr>
</tbody>
</table>

### Example of response

HTTP/1.1 403 Forbidden
Date: Fri, 06 Jun 2014 11:00:38 GMT
Content-Length: ...
Content-Type: application/xml
x-fj-request-id: d96bd874-9bf2-11e1-8ee7-c98a0037a2b6

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AccessDeniedException>
  <Message>Access Denied</Message>
</AccessDeniedException>
```

- Errors other than authentication error/access denied

### HTTP status

**Status**

The following error codes can be returned for the request.
One of the following values will be returned:

- **400:** XML format of request is incorrect
- **500:** Internal server error
- **5xx:** Error when an availability zone has been downed

The query sent by the user varies depending on when the availability zone goes down, resulting in various behaviors. Therefore, (5xx) returned by the HTTP status code prompts the user to retry.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int</td>
<td>1..1</td>
</tr>
</tbody>
</table>

### Response elements

**Error Response**

Envelope of error response.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>None</td>
<td>Error RequestId</td>
</tr>
</tbody>
</table>
**Error**
Envelope of error information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>ErrorResponse</td>
<td>Type, Code, Message</td>
</tr>
</tbody>
</table>

**Type**
Sender or Receiver.
Indicates whether the error was caused by the sender or the receiver.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>Error</td>
<td>None</td>
</tr>
</tbody>
</table>

**Code**
Error code.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>Error</td>
<td>None</td>
</tr>
</tbody>
</table>

**Message**
Error message (English).

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>Error</td>
<td>None</td>
</tr>
</tbody>
</table>

**RequestId**
ID that uniquely identifies the request.
This is required when contacting support staff to troubleshoot an issue.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ErrorResponse</td>
<td>None</td>
</tr>
</tbody>
</table>

**Example of response**

HTTP/1.1 400 Bad Request
Date: Fri, 06 Jun 2014 11:00:38 GMT
Content-Length: ...
Content-Type: application/xml
x-fj-request-id: 2844de70-360d-488d-bd63-0cd88fd94be1

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ErrorResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/dns/api/v1.0/">
  <Error>
    <Type>Sender</Type>
    <Code>InvalidInput</Code>
    <Message>The specified Action is not valid</Message>
  </Error>
  <RequestId>2844de70-360d-488d-bd63-0cd88fd94be1</RequestId>
</ErrorResponse>
```
6.1.6 Generate URLs when using APIs

The APIs require URLs of the dns type, which can be generated by the identity service on the Service catalog.

The endpoint URL is returned in the following format by the identity service.

https://dns.gls.cloud.global.fujitsu.com

Join the path name of each API in the host section of the endpoint URL, and create the URL.
6.2 Zone and record management

6.2.1 API List

<table>
<thead>
<tr>
<th>Item</th>
<th>API</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><code>CreateHostedZone</code>&lt;br&gt;<code>Create zone</code></td>
<td>Creates a zone</td>
</tr>
<tr>
<td>2</td>
<td><code>GetHostedZone</code>&lt;br&gt;<code>Get zone information</code></td>
<td>Gets zone information</td>
</tr>
<tr>
<td>3</td>
<td><code>ListHostedZones</code>&lt;br&gt;<code>List zone information</code></td>
<td>Lists zone information</td>
</tr>
<tr>
<td>4</td>
<td><code>DeleteHostedZone</code>&lt;br&gt;<code>Delete zone</code></td>
<td>Deletes a zone</td>
</tr>
<tr>
<td>5</td>
<td><code>ChangeResourceRecordSets</code>&lt;br&gt;<code>Create/delete record</code></td>
<td>Creates/deletes a record</td>
</tr>
<tr>
<td>6</td>
<td><code>ListResourceRecordSets</code>&lt;br&gt;<code>List record information</code></td>
<td>Lists record information</td>
</tr>
<tr>
<td>7</td>
<td><code>GetChange</code>&lt;br&gt;<code>Get update request information</code></td>
<td>Gets update request information</td>
</tr>
</tbody>
</table>

6.2.2 API details

6.2.2.1 Create zone (POST /v1.0/hostedzone)

Creates a zone.
Specify the necessary information in the request body, and a zone will be created based on that information.
Up to 100 zones can be registered.
When the API is executed, authentication is performed using a confirmation code in order to confirm the ownership rights of the domain.
When this API is executed for the first time, an Unauthorised error occurs. When an Unauthorized error occurs, set the confirmation code in the error message of the response in the registrar or DNS, and reexecute this API.
If a create zone API of the same name is executed concurrently with a zone that is being created, a 500 Internal Error will occur, so retry the operation.

Request headers

n/a

Request parameters

n/a
Request elements

`CreateHostedZoneRequest`
Request envelope.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>None</td>
<td>Name HostedZoneConfig</td>
</tr>
</tbody>
</table>

**Name**
Zone name. FQDN format.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>CreateHostedZoneRequest</td>
<td>None</td>
</tr>
</tbody>
</table>

**HostedZoneConfig**
Envelope of appended information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>0..1</td>
<td>CreateHostedZoneRequest</td>
<td>Comment</td>
</tr>
</tbody>
</table>

**Comment**
Comment. Specify up to 255 fullwidth characters.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>HostedZoneConfig</td>
<td>None</td>
</tr>
</tbody>
</table>

HTTP status

**Status**
The following error codes can be returned for the request.
One of the following values will be returned:

- 201: Normal completion
- 400: Authentication required/invalid zone name
- 404: Invalid zone name was specified
- 409: Existing zone name was specified

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int</td>
<td>1..1</td>
</tr>
</tbody>
</table>

Response elements (normal completion)

`CreateHostedZoneResponse`
Envelope of the response.
<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>None</td>
<td>HostedZone, ChangeInfo, DelegationSet</td>
</tr>
</tbody>
</table>

**HostedZone**
Envelope of the zone information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>CreateHostedZoneResponse</td>
<td>Id, Name, CallerReference, Config, ResourceRecordSetCount</td>
</tr>
</tbody>
</table>

**Id**
ID of the zone that was created. Same value as the zone name.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>HostedZone</td>
<td>None</td>
</tr>
</tbody>
</table>

**Name**
Name of the zone that was created. Normalized value.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>HostedZone</td>
<td>None</td>
</tr>
</tbody>
</table>

**CallerReference**
Identifier of the zone that was created. Same value as the zone name.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>HostedZone</td>
<td>None</td>
</tr>
</tbody>
</table>

**Config**
Envelope of appended information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>HostedZone</td>
<td>Comment</td>
</tr>
</tbody>
</table>

**Comment**
Comment.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>Config</td>
<td>None</td>
</tr>
</tbody>
</table>
**ResourceRecordSetCount**
Number of records registered in the host zone.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>HostedZone</td>
<td>None</td>
</tr>
</tbody>
</table>

**ChangeInfo**
Envelope of the update request information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>CreateHostedZoneResponse</td>
<td>Id</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Status</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SubmittedAt</td>
</tr>
</tbody>
</table>

**Id**
Update request ID. The ID is used by the GetChange API to retrieve update request information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ChangelInfo</td>
<td>None</td>
</tr>
</tbody>
</table>

**Status**
Current status of an update request. PENDING or INSYNC.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ChangelInfo</td>
<td>None</td>
</tr>
</tbody>
</table>

**SubmittedAt**
Datetime when update request was issued. Format: YYYY-MM-DDTh:mm:ss.SSSZ

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ChangelInfo</td>
<td>None</td>
</tr>
</tbody>
</table>

**DelegationSet**
Envelope of the name server information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>CreateHostedZoneResponse</td>
<td>NameServers</td>
</tr>
</tbody>
</table>

**NameServers**
Envelope of the name server list.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>DelegationSet</td>
<td>NameServer</td>
</tr>
</tbody>
</table>
**NameServer**

Name server allocated to the zone.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..n</td>
<td>NameServers</td>
<td>None</td>
</tr>
</tbody>
</table>

### Example of Request

POST /v1.0/hostedzone HTTP/1.1
Date: Fri, 06 Jun 2014 11:00:37 GMT
Content-Length: . . .
Host: dns.gls.cloud.global.fujitsu.com
Content-Type: application/xml
Accept: application/xml
X-Auth-Token: MIIFvgY . . .

```xml
<?xml version="1.0" encoding="UTF-8"?><CreateHostedZoneRequest xmlns="http://docs.cloudcommunity.global.fujitsu.com/dns/api/v1.0/">
  <Name>example.com</Name>
  <HostedZoneConfig>
    <Comment>comment</Comment>
  </HostedZoneConfig>
</CreateHostedZoneRequest>
```

### Example of Response

HTTP/1.1 201 Created
Date: Fri, 06 Jun 2014 11:00:38 GMT
Content-Length: . . .
Content-Type: application/xml
x-fj-request-id: d96bd874-9bf2-11e1-8ee7-c98a0037a2b6

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?><CreateHostedZoneResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/dns/api/v1.0/">
  <HostedZone>
    <Id>example.com</Id>
    <Name>example.com</Name>
    <CallerReference>example.com</CallerReference>
    <Config>
      <Comment>comment</Comment>
    </Config>
    <ResourceRecordSetCount>0</ResourceRecordSetCount>
  </HostedZone>
  <ChangeInfo>
    <Id>cb7fa29a2e2bb2bd489d0d27b36e28fc</Id>
    <Status>INSYNC</Status>
    <SubmittedAt>2014-06-06T11:00:38.370Z</SubmittedAt>
  </ChangeInfo>
  <DelegationSet>
    <NameServers>
      <NameServer>ns0.dns.nifcloud.com</NameServer>
      <NameServer>ns1.dns.nifcloud.com</NameServer>
      <NameServer>ns2.dns.nifcloud.com</NameServer>
    </NameServers>
  </DelegationSet>
</CreateHostedZoneResponse>
```
Flow of authentication using a confirmation code to confirm ownership rights of a domain

- When using the CreateHostedZone API, authentication using a confirmation code is required to confirm if the domain of the zone to be created is the domain owned by the user who executed the API.
  The method for setting up the confirmation code is shown below.
  The setup method is different depending on whether the domain to be specified is a newly retrieved domain (not managed by any DNS yet) or an existing domain (already managed by another DNS).

- Confirmation code retrieval method:
  Specify the same parameters as the zone scheduled for creation, and execute the CreateHostedZone API. Execution of the API will result in an Unauthorized error, so retrieve the confirmation code that is output to the error message.

  Response Body:
  ```xml
  <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
  <ErrorResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/dns/api/v1.0/"
  <Error><Type>Sender</Type><Code>Unauthorized</Code>
  <Message>name_server:f0094d76e096551441d24af257488a6a.ns-verify.dns.nifcloud.com,txt:nifty-dns-verify=f0094d76e096551441d24af257488a6a</Message>
  </Error>
  </ErrorResponse>
  ```

- Confirmation code setup method for a newly retrieved domain:
  Set a name server in the registrar.

  ```
  name_server:f0094d76e096551441d24af257488a6a.ns-verify.dns.nifcloud.com
  ```

- Confirmation code setup method for an existing domain:
  Set a text record in the DNS.

  ```
  txt:nifty-dns-verify=f0094d76e096551441d24af257488a6a
  ```

6.2.2.2 Retrieve zone information (GET /v1.0/hostedzone/{zoneld})

Retrieves zone information.
Specification of the zone information to be retrieved is performed using the zone ID which is included in the request URL.
Zone and name server information are retrieved.
*The zone ID is the same value as the zone name.

Request headers
n/a

Request parameters
n/a

Request elements
n/a

HTTP status

- Status
  The following error codes can be returned for the request.
One of the following values will be returned:

- 200: Normal completion
- 400: Invalid zone ID
- 404: A zone with the specified ID does not exist

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int</td>
<td>1..1</td>
</tr>
</tbody>
</table>

Response elements (normal completion)

**GetHostedZoneResponse**
Envelope of the response.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>None</td>
<td>HostedZone DelegationSet</td>
</tr>
</tbody>
</table>

**HostedZone**
Envelope of the zone information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>GetHostedZoneResponse</td>
<td>Id Name CallerReference Config ResourceRecordSetCount</td>
</tr>
</tbody>
</table>

**Id**
Zone ID. Same value as the zone name.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>HostedZone</td>
<td>None</td>
</tr>
</tbody>
</table>

**Name**
Zone name. Normalized value.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>HostedZone</td>
<td>None</td>
</tr>
</tbody>
</table>

**CallerReference**
Zone identifier. Same value as the zone name.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>HostedZone</td>
<td>None</td>
</tr>
</tbody>
</table>

**Config**
Envelope of appended information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>HostedZone</td>
<td>Comment</td>
</tr>
</tbody>
</table>

**Comment**
Comment.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>Config</td>
<td>None</td>
</tr>
</tbody>
</table>

**ResourceRecordSetCount**
Number of records registered in the host zone.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>HostedZone</td>
<td>None</td>
</tr>
</tbody>
</table>

**DelegationSet**
Envelope of the name server information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>GetHostedZoneResponse</td>
<td>NameServers</td>
</tr>
</tbody>
</table>

**NameServers**
Envelope of the name server list.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>DelegationSet</td>
<td>NameServer</td>
</tr>
</tbody>
</table>

**NameServer**
Name server allocated to the zone.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..n</td>
<td>NameServers</td>
<td>None</td>
</tr>
</tbody>
</table>

**Example of Request**
GET /hostedzone/example.com HTTP/1.1
Date: Fri, 06 Jun 2014 11:00:37 GMT
Content-Length: ...
Host: dns.gls.cloud.global.fujitsu.com
Accept: application/xml
X-Auth-Token: MIIFvgY. . .

**Example of Response**
HTTP/1.1 200 OK
6.2.2.3 List zone information (GET /v1.0/hostedzone)

Lists zone information.
You can use the URL parameters in the request to specify the first zone ID for which information is to be retrieved, and the maximum number of records to be retrieved.
*The zone ID is the same value as the zone name.

Request Headers
n/a

Request Parameters

**marker**
Retrieval start zone ID.
If omitted, zone information will be retrieved from the beginning.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>0..1</td>
</tr>
</tbody>
</table>

**maxitems**
Maximum number of records to retrieve. Up to 100.
If omitted, 100 will be used.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>0..1</td>
</tr>
</tbody>
</table>

Request Elements
n/a
HTTP status

**Status**
The following error codes can be returned for the request.
One of the following values will be returned:

- **200:** Normal completion
- **400:** The zone ID specified in "marker" does not exist, or the values specified in "maxitems" is outside the range of 1 to 100

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int</td>
<td>1..1</td>
</tr>
</tbody>
</table>

Response elements (normal completion)

**ListHostedZonesResponse**
Envelope of the response.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>None</td>
<td>HostedZones Marker</td>
</tr>
<tr>
<td>-</td>
<td></td>
<td></td>
<td>IsTruncated</td>
</tr>
<tr>
<td>-</td>
<td></td>
<td></td>
<td>NextMarker</td>
</tr>
<tr>
<td>-</td>
<td></td>
<td></td>
<td>MaxItems</td>
</tr>
</tbody>
</table>

**HostedZones**
Envelope of the zone information list.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>ListHostedZonesResponse</td>
<td>HostedZone</td>
</tr>
</tbody>
</table>

**HostedZone**
Envelope of the zone information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..n</td>
<td>HostedZones</td>
<td>Id</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Name</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CallerReference</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Config</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ResourceRecordSetCount</td>
</tr>
</tbody>
</table>

**Id**
Zone ID. Same value as the zone name.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>HostedZone</td>
<td>None</td>
</tr>
</tbody>
</table>
Name
Zone name. Normalized value.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>HostedZone</td>
<td>None</td>
</tr>
</tbody>
</table>

CallerReference
Zone identifier. Same value as the zone name.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>HostedZone</td>
<td>None</td>
</tr>
</tbody>
</table>

Config
Envelope of appended information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>HostedZone</td>
<td>Comment</td>
</tr>
</tbody>
</table>

Comment
Comment.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>Config</td>
<td>None</td>
</tr>
</tbody>
</table>

ResourceRecordSetCount
Number of records registered in the host zone.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>HostedZone</td>
<td>None</td>
</tr>
</tbody>
</table>

Marker
Retrieval start zone ID specified in the request.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ListHostedZonesResponse</td>
<td>None</td>
</tr>
</tbody>
</table>

IsTruncated
Indicates whether there is zone information that has not been returned. true or false.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ListHostedZonesResponse</td>
<td>None</td>
</tr>
</tbody>
</table>

NextMarker
Retrieval start zone ID of zone information that has not been returned. This is returned when IsTruncated is true.
<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ListHostedZonesResponse</td>
<td>None</td>
</tr>
</tbody>
</table>

**MaxItems**
Maximum number of records for retrieval specified in request.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ListHostedZonesResponse</td>
<td>None</td>
</tr>
</tbody>
</table>

**Example of Request**

```
GET /hostedzone HTTP/1.1
Date: Fri, 06 Jun 2014 11:00:37 GMT
Content-Length: . . .
Host: dns.gls.cloud.global.fujitsu.com
Accept: application/xml
X-Auth-Token: MIIFvgY. . .
```

**Example of response**

```
HTTP/1.1 200 OK
Date: Fri, 06 Jun 2014 11:00:38 GMT
Content-Length: . . .
Content-Type: application/xml
x-fj-request-id: d96bd874-9bf2-11e1-8ee7-c98a0037a2b6
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
< ListHostedZonesResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/dns/api/v1.0/">
  <HostedZones>
    <HostedZone>
      <Id>example.com</Id>
      <Name>example.com</Name>
      <CallerReference>example.com</CallerReference>
      <Config>
        <Comment>comment</Comment>
      </Config>
      <ResourceRecordSetCount>0</ResourceRecordSetCount>
    </HostedZone>
  </HostedZones>
  <IsTruncated>false</IsTruncated>
  <MaxItems>100</MaxItems>
</ListHostedZonesResponse>
```

6.2.2.4 **Delete zone (DELETE /v1.0/hostedzone/{zoneld})**

- Deletes a zone.
- Specify the zone to be deleted by using the zone ID in the request.
- When a zone is deleted, all records that have been set for that zone are also deleted.
- Even if a zone is deleted, the domain will not be discontinued.
- If a delete zone API is executed concurrently with operation of the record update API in the same zone, a 500 Internal Error will occur, so retry the operation.
*The zone ID is the same value as the zone name.

**Request headers**

n/a

**Request parameters**

n/a

**Request elements**

n/a

**HTTP status**

**Status**

The following error codes can be returned for the request.
One of the following values will be returned:

- 200: Normal completion
- 400: Invalid input parameter
- 404: A zone with the specified ID does not exist

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int</td>
<td>1..1</td>
</tr>
</tbody>
</table>

**Response elements (normal completion)**

**DeleteHostedZoneResponse**

Envelope of the response.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>None</td>
<td>ChangeInfo</td>
</tr>
</tbody>
</table>

**ChangeInfo**

Envelope of the update request information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>ListHostedZonesResponse</td>
<td>Id</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Status</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SubmittedAt</td>
</tr>
</tbody>
</table>

**Id**

Update request ID.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ChangeInfo</td>
<td>None</td>
</tr>
</tbody>
</table>

**Status**

Update status.
PENDING or INSYNC.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ChangeInfo</td>
<td>None</td>
</tr>
</tbody>
</table>

### SubmittedAt

Datetime of update request. Format: YYYY-MM-DDTh:mm:ss.SSSZ

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ChangeInfo</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Example of request

DELETE /hostedzone/example.com HTTP/1.1
Date: Fri, 06 Jun 2014 11:00:37 GMT
Content-Length: ...
Host: dns.gls.cloud.global.fujitsu.com
Accept: application/xml
X-Auth-Token: MIIFvgY. ...

#### Example of response

HTTP/1.1 200 OK
Date: Fri, 06 Jun 2014 11:00:38 GMT
Content-Length: ...
Content-Type: application/xml
x-fj-request-id: d96bd874-9bf2-11e1-8ee7-c98a0037a2b6

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<DeleteHostedZoneResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/dns/api/v1.0/">
  <ChangeInfo>
    <Id>d36956475553d655cf70a293adeb155c</Id>
    <Status>INSYNC</Status>
    <SubmittedAt>2014-06-06T11:00:38.178Z</SubmittedAt>
  </ChangeInfo>
</DeleteHostedZoneResponse>
```

6.2.2.5 Create/delete record (POST v1.0/hostedzone/{zoneld}/rrset)

- Creates and deletes records.
- The types of records that can be registered are NS, A, AAAA, CNAME, MX, TXT, LBR (for latency-based routing), and SRV.
- The SOA record settings cannot be changed.
- Create/delete operations can be specified for multiple records in a single request. They are handled as a single transaction, so are not reflected in parts.
- Because record creation/deletion is not reflected immediately, the response will return the update request information.
- The update will be complete when the update status changes from PENDING to INSYNC.
- Up to 10,000 records can be registered for each zone.
- When a record is deleted, the data with matching Name, Type, and Value is erased.
If create or delete record APIs are executed concurrently in the same zone, a 500 Internal Error will occur, so retry the operation.

*The zone ID is the same value as the zone name.

### Request Headers
n/a

### Request Parameter
n/a

### Request Elements

**ChangeResourceRecordSetsRequest**
Request envelope.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>None</td>
<td>ChangeBatch</td>
</tr>
</tbody>
</table>

**ChangeBatch**
Envelope of record transaction.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>ChangeResourceRecordSetsRequest</td>
<td>Comment</td>
</tr>
</tbody>
</table>

**Comment**
Comment for the record transaction.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ChangeBatch</td>
<td>None</td>
</tr>
</tbody>
</table>

**Changes**
Envelope of change content list.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>ChangeBatch</td>
<td>Change</td>
</tr>
</tbody>
</table>

**Change**
Envelope of change content.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..n</td>
<td>Changes</td>
<td>Action</td>
</tr>
</tbody>
</table>

**Action**
Type of record operation. CREATE or DELETE.
<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>Change</td>
<td>None</td>
</tr>
</tbody>
</table>

**ResourceRecordSet**
Envelope of the record information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>Change</td>
<td>Name, Type, SetIdentifier, Weight, XniftyDefaultHost, Failover, XniftyHealthCheckConfig, TTL, ResourceRecords, XniftyComment</td>
</tr>
</tbody>
</table>

**Name**
Record name.
Input limitation:
Halfwidth alphanumeric characters (a-z,0-9) , wild-cards (*) , at marks (@) and hyphens (-) are available.
Specify 1 or more and 63 or less character
Wildcards can be specified for A, AAAA, MX, and CNAME records, as long as
Weight and Failover are not specified.
The at mark (@) can be specified for A, AAAA, MX, and TXT records, as long as Failover is not specified.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

**Type**
Record type.
NS, A, AAAA, CNAME, MX, TXT, LBR, SRV.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

**SetIdentifier**
Record identification information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>
**Weight**
Weighting value. 0 to 100.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

**XniftyDefaultHost**
Default host information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

**Failover**
Failover type. PRIMARY or SECONDARY.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

**XniftyHealthCheckConfig**
Envelope of health check information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>0..1</td>
<td>ResourceRecordSet</td>
<td>IPAddress</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Port</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Protocol</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ResourcePath</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FullyQualifiedDomainName</td>
</tr>
</tbody>
</table>

**IPAddress**
Health check destination IP address.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>XniftyHealthCheckConfig</td>
<td>None</td>
</tr>
</tbody>
</table>

**Port**
Health check destination port.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>XniftyHealthCheckConfig</td>
<td>None</td>
</tr>
</tbody>
</table>

**Protocol**
Health check type. HTTP, HTTPS, TCP.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>XniftyHealthCheckConfig</td>
<td>None</td>
</tr>
</tbody>
</table>
**ResourcePath**
Health check destination path.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>XniftyHealthCheckConfig</td>
<td>None</td>
</tr>
</tbody>
</table>

**FullyQualifiedDomainName**
Health check destination domain name.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>XniftyHealthCheckConfig</td>
<td>None</td>
</tr>
</tbody>
</table>

**TTL**
TTL value. 60 to 86400 seconds. If omitted, the zone TTL will be used.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

**ResourceRecords**
Envelope of record response information list.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>ResourceRecordSet</td>
<td>ResourceRecord</td>
</tr>
</tbody>
</table>

**ResourceRecord**
Envelope of record response information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..n</td>
<td>ResourceRecords</td>
<td>Value</td>
</tr>
</tbody>
</table>

**Value**
Record response value. Multibyte domains can be set for CNAME, MX and NS records.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ResourceRecord</td>
<td>None</td>
</tr>
</tbody>
</table>

**XniftyComment**
Comment. Specify up to 255 fullwidth characters.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

**HTTP status**

**Status**
The following error codes can be returned for the request.
One of the following values will be returned:
200: Normal completion
400: Invalid input parameter
404: A zone with the specified ID does not exist

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int</td>
<td>1..1</td>
</tr>
</tbody>
</table>

**Response elements (normal completion)**

**ChangeResourceRecordSetsResponse**
Envelope of the response.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>None</td>
<td>ChangeInfo</td>
</tr>
</tbody>
</table>

**ChangeInfo**
Envelope of the update request information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ChangeResourceRecordSetsResponse</td>
<td>Id, Status, SubmittedAt</td>
</tr>
</tbody>
</table>

**Id**
Update request ID.
The ID is used by the GetChange API to retrieve update request information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ChangeInfo</td>
<td>None</td>
</tr>
</tbody>
</table>

**Status**
Current status of an update request.
PENDING or INSYNC.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ChangeInfo</td>
<td>None</td>
</tr>
</tbody>
</table>

**SubmittedAt**
Datetime when update request was issued. Format: YYYY-MM-DDTh:mm:ss.SSSZ

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ChangeInfo</td>
<td>None</td>
</tr>
</tbody>
</table>

**Example of Request**

POST /hostedzone/example.com/rrset HTTP/1.1
Failover settings

- Failover settings
  The failover settings are specified using Failover tags. They can only be specified for A and AAAA records.
  - PRIMARY: Only 1 record can be set.
  - SECONDARY: Multiple settings are possible.

- Health check
  Health checks are to be specified in the failover settings.
  Settings are to be specified by XniftyHealthCheckConfig tag.
  Health check rules
  - Individual health checks specified for each record are executed.
  - Health check is performed at 5-minute intervals.
  - During a health check, a check of whether packets can be sent to the target server via the Internet is performed.
• When a failover occurs, a host switches over to the other host in the group that has the same Name tag and same Type tag.
• Ensure that all the same record name is used for all records in the same group.
• Set a global IP address as the target IP address.
• Configure the network and OS (firewall service, security group rules, OS firewall, etc.) so that packets reach the target IP address.
• When the FullyQualifiedDomainName tag is set, the value reaches the value of the Host header.
• When ResourcePath tag is set, that value becomes a path to health check. When this tag is not set, "/" becomes a path to health check.
• If multiple records are specified for [Secondary], priority is given to the record that was registered first.
• The Health check is usually done only on the Primary.
• Health checks are normally only performed for primary servers.
• If an abnormality occurs in a health check for [Primary], health checks will be performed for both [Primary] and [Secondary].
• The relationships of the server statuses of [Primary] and [Secondary] and the allocation destinations are as follows.
• Please refer IaaS Features Handbook (Network - DNS service - Failover Function) for the relationships of the server statuses of [Primary] and [Secondary] and the allocation destinations.

```xml
<XniftyHealthCheckConfig>
  <IPAddress>targetIpAddr</IPAddress>
  <Port>targetPortNum</Port>
  <Protocol>targetProtocol</Protocol>
  <ResourcePath>targetUrlPathSection</ResourcePath>
  <FullyQualifiedDomainName>httpHeaderHostInfo</FullyQualifiedDomainName>
</XniftyHealthCheckConfig>
```

**CAUTION** When using failover, it is recommended to set the record TTL to 60 seconds.

• Example failover settings (ResourceRecordSet)

```xml
<ResourceRecordSet>
  <Name>server.example.com</Name>
  <Type>A</Type>
  <Failover>PRIMARY</Failover>
  <XniftyHealthCheckConfig>
    <IPAddress>222.158.xxx.yyy</IPAddress>
    <Port>80</Port>
    <Protocol>HTTP</Protocol>
  </XniftyHealthCheckConfig>
  <ResourceRecords>
    <ResourceRecord>
      <Value>222.158.xxx.yyy</Value>
    </ResourceRecord>
  </ResourceRecords>
</ResourceRecordSet>
<ResourceRecordSet>
  <Name>server.example.com</Name>
  <Type>A</Type>
  <Failover>SECONDARY</Failover>
  <XniftyHealthCheckConfig>
```
<IPAddress>222.158.xxx.zzz</IPAddress>
<Port>80</Port>
<Protocol>HTTP</Protocol>
</XniftyHealthCheckConfig>
<ResourceRecords>
<ResourceRecord>
<Value>222.158.xxx.zzz</Value>
</ResourceRecord>
</ResourceRecords>
</ResourceRecordSet>

LBR settings

• Settings for latency-based routing (LBR)
  For the LBR settings, set the type to "LBR".
  Inside the Value tags, the area and host are delimited by a halfwidth space.

<Value>area host<Value>

For area, specify the nearest area.

10: Japan
20: Asia
30: North America

For host, specify the value to be returned when there is access from the specified area.
Registered A/AAAA records can be specified in the same zone.
Use sub-domain notation instead of FQDN for the host.
(in the LBR setting example below, www.example.com is specified as the default zone and registered in Japan, while www2.example.com is registered in Asia.)
Inside the XniftyDefaultHost tags, specify the value to be returned when there is access from outside the specified area.

• Example LBR settings (ResourceRecordSet)

<Changes>
  <Change>
    <Action>CREATE</Action>
    <ResourceRecordSet>
      <Name>server.example.com</Name>
      <Type>LBR</Type>
      <XniftyDefaultHost>www</XniftyDefaultHost>
      <ResourceRecords>
        <ResourceRecord>
          <Value>10 www 20 www2</Value>
        </ResourceRecord>
        <ResourceRecord>
          <Value>30 www3</Value>
        </ResourceRecord>
      </ResourceRecords>
    </ResourceRecordSet>
  </Change>
</Changes>

Weighted round robin settings

• Settings for a weighted round robin
  Specify the weighting value in the Weight tags. They can only be specified for A and AAAA records.
  The record hit rate varies according to the specified weighting value.
  • Notes
• If there are no records with a weighting of 100 in the weighting setting value, the target record may not be returned when resolving the name.
• When the weighting setting value is set to 0, the hit rate will be 0, so no value will be returned.
• For normal record registration, when records of the same host/same record type are registered, they are handled as a weighting of 100.
• Example weighted round robin settings (ResourceRecordSet)

```xml
<ResourceRecordSet>
    <Name>server.example.com</Name>
    <Type>A</Type>
    <Weight>100</Weight>
    <TTL>60</TTL>
    <ResourceRecords>
        <ResourceRecord>
            <Value>222.158.xxx.yyy</Value>
        </ResourceRecord>
    </ResourceRecords>
</ResourceRecordSet>
<ResourceRecordSet>
    <Name>server.example.com</Name>
    <Type>A</Type>
    <Weight>100</Weight>
    <TTL>60</TTL>
    <ResourceRecords>
        <ResourceRecord>
            <Value>222.158.xxx.zzz</Value>
        </ResourceRecord>
    </ResourceRecords>
</ResourceRecordSet>
```

MX record settings

• MX record settings
Separate the priority from the host using a halfwidth space in the Value tag inside the ResourceRecord.

```xml
<Value>priority host</Value>
```

• Example MX record settings
Priority: 10
Host: mail.example.com

```xml
<ResourceRecordSet>
    <Name>@</Name>
    <Type>MX</Type>
    <TTL>60</TTL>
    <ResourceRecords>
        <ResourceRecord>
            <Value>10 mail.example.com</Value>
        </ResourceRecord>
    </ResourceRecords>
</ResourceRecordSet>
```

PTR record settings

• PTR record settings
Currently, PTR records cannot be set.
SRV record settings

- SRV record settings
  In the record name (the value of the Name tag), specify the service name and the protocol name (Example: _ftp._tcp) in the format "_<service name>._<protocol name>".
  In the value (the value of the Value tag), specify the priority, weighting, port number, and target, in this order, separated by single-byte blank spaces.

  <Value>Priority Weighting PortNumber Target</Value>

- Example of SRV record settings

  Priority: 1
  Weighting: 2
  Port number: 21
  Target: ftp-server-01.example.com

  <ResourceRecordSet>
    <Name>_ftp._tcp</Name>
    <Type>SRV</Type>
    <TTL>3600</TTL>
    <ResourceRecords>
      <ResourceRecord>
        <Value>1 2 21 ftp-server-01.example.com</Value>
      </ResourceRecord>
    </ResourceRecords>
  </ResourceRecordSet>

- The zone ID specified in the URL when issuing an API request is registered in the domain name of the SRV record (Example: example.com).

- Notes
  - Specify the target value using the format "<record name of A record existing in same zone>.<domain name>".
    Example where the record name of the A record is "ftp-server-01" and the domain name is "example.com"
    "ftp-server-01.example.com".
  - Domain name of the SRV record
    Zone ID specified at the execution of API request is registered to the domain name of SRV recored. (Example: example.com)

- Notes
  - Specify the target value using the format "<record name of A record existing in same zone>.<domain name>".
    For example, where the record name of the A record is "ftp-server-01" and the domain name is "example.com",
    Please specify "ftp-server-01.example.com".
  - The target value can be specified in multibyte domains.
  - The weighting in SRV records is not handled as a weighted round robin function.

- Supplement
  - Refer to RFC-2782 for the specifications of SRV records.

6.2.2.6 List record information (GET /v1.0/hostedzone/{zoneld}/rrset)

Lists the record information.
Specify the URL request parameters to determine the name(domain), type, identification information of the record information where retrieval starts from, and the maximum number of records to be retrieved.

Records can be identified only by the identifier of the request, but if the specified record does not match the specified name and type, it is regarded as a specific failure.

For example, if you specify a name and a type with the URL parameter, record information is acquired by listing records with the specified name and type matching first.

In addition, when only identification information is specified, record information is acquired by listing records whose identification information matches first.

However, even if the identification information matches, if the specified name or type does not match, the record cannot be specified.

*The zone ID is the same value as the zone name.

**Request Headers**

n/a

**Request Parameter**

**name**

Record name (domain). FQDN format.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>0..1</td>
</tr>
</tbody>
</table>

**type**

Record type.

NS, A, AAAA, CNAME, MX, TXT, LBR, SRV.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>0..1</td>
</tr>
</tbody>
</table>

**identifier**

Record identification information.

Random string created by the system during registration.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>0..1</td>
</tr>
</tbody>
</table>

**maxitems**

Maximum number of records to retrieve. Up to 100.

If omitted, 100 will be used.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>0..1</td>
</tr>
</tbody>
</table>

**Request Elements**

n/a
HTTP status

Status
The following error codes can be returned for the request.
One of the following values will be returned:

<table>
<thead>
<tr>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200:</td>
<td>Normal completion</td>
</tr>
<tr>
<td>400:</td>
<td>maxitems is outside the range of 1 to 100</td>
</tr>
<tr>
<td>404:</td>
<td>A zone with the specified ID does not exist</td>
</tr>
</tbody>
</table>

Data type | Cardinality
---|---
Int | 1..1

Response elements (normal completion)

ListResourceRecordSetsResponse
Envelope of the response.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
</table>
| - | 1..1 | None | ResourceRecordSets
IsTruncated
MaxItems
NextRecordName
NextRecordType
NextRecordIdentifier |

ResourceRecordSets
Envelope of the record information list.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>ListResourceRecordSetsResponse</td>
<td>ResourceRecordSet</td>
</tr>
</tbody>
</table>

ResourceRecordSet
Envelope of the record information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
</table>
| - | 1..n | ResourceRecordSets | Name
Type
SetIdentifier
Weight
XniftyDefaultHost
Failover
XniftyHealthCheckConfig
TTL
ResourceRecords
XniftyComment |
Name
Record name.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

Type
Record type.
NS, A, AAAA, CNAME, MX, TXT, LBR, SRV.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

SetIdentifier
Record identification information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

Weight
Weighting value.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

XniftyDefaultHost
Default host information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

Failover
Failover type. PRIMARY or SECONDARY.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

XniftyHealthCheckConfig
Envelope of health check information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
</table>
| -          | 0..1        | ResourceRecordSet | IPAddress  
Port  
Protocol  
ResourcePath  
 FullyQualifiedDomainName |
**IPAddress**
Health check destination IP address.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>XniftyHealthCheckConfig</td>
<td>None</td>
</tr>
</tbody>
</table>

**Port**
Health check destination port.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>XniftyHealthCheckConfig</td>
<td>None</td>
</tr>
</tbody>
</table>

**Protocol**
Health check type.
HTTP, HTTPS, TCP.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>XniftyHealthCheckConfig</td>
<td>None</td>
</tr>
</tbody>
</table>

**ResourcePath**
Health check destination path.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>XniftyHealthCheckConfig</td>
<td>None</td>
</tr>
</tbody>
</table>

**FullyQualifiedDomainName**
Health check destination domain name.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>XniftyHealthCheckConfig</td>
<td>None</td>
</tr>
</tbody>
</table>

**TTL**
TTL value.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

**ResourceRecords**
Envelope of the record response information list.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>ResourceRecordSet</td>
<td>ResourceRecord</td>
</tr>
</tbody>
</table>

**ResourceRecord**
Envelope of record response information.
### Value
Record response value.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ResourceRecord</td>
<td>None</td>
</tr>
</tbody>
</table>

### XniftyComment
Comment.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ResourceRecordSet</td>
<td>None</td>
</tr>
</tbody>
</table>

### IsTruncated
Indicates whether there is zone information that has not been returned. true or false.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ListResourceRecordSetsResponse</td>
<td>None</td>
</tr>
</tbody>
</table>

### MaxItems
Maximum number of records for retrieval specified in request.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ListResourceRecordSetsResponse</td>
<td>None</td>
</tr>
</tbody>
</table>

### NextRecordName
Retrieval start record name of record information that has not been returned. This is returned when IsTruncated is true.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ListResourceRecordSetsResponse</td>
<td>None</td>
</tr>
</tbody>
</table>

### NextRecordType
Retrieval start record name of record information that has not been returned. This is returned when IsTruncated is true.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ListResourceRecordSetsResponse</td>
<td>None</td>
</tr>
</tbody>
</table>

### NextRecordIdentifier
Retrieval start record name of record information that has not been returned. This is returned when IsTruncated is true.
<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>0..1</td>
<td>ListResourceRecordSetsResponse</td>
<td>None</td>
</tr>
</tbody>
</table>

### Example of Request

GET /hostedzone/example.com/rrset HTTP/1.1  
Date: Fri, 06 Jun 2014 11:00:37 GMT  
Content-Length: . . .  
Host: dns.gls.cloud.global.fujitsu.com  
Accept: application/xml  
X-Auth-Token: MIIFvgY. . .

### Example of response

HTTP/1.1 200 OK  
Date: Fri, 06 Jun 2014 11:00:38 GMT  
Content-Length: . . .  
Content-Type: application/xml  
x-fj-request-id: d96bd874-9bf2-11e1-8ee7-c98a0037a2b6  
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>  
<ListResourceRecordSetsResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/dns/api/v1.0/">  
<ResourceRecordSets>  
<ResourceRecordSet>  
<Name>example.com</Name>  
<Type>MX</Type>  
<SetIdentifier>uLrNgSC4yzg=</SetIdentifier>  
<TTL>60</TTL>  
<ResourceRecords>  
<ResourceRecord>  
<Value>10 mail.example.com</Value>  
</ResourceRecord>  
</ResourceRecords>  
</ResourceRecordSet>  
<ResourceRecordSet>  
<Name>example.com</Name>  
<Type>A</Type>  
<SetIdentifier>uLrNgSC4yzg=</SetIdentifier>  
<TTL>60</TTL>  
<ResourceRecords>  
<ResourceRecord>  
<Value>mail.example.com</Value>  
</ResourceRecord>  
</ResourceRecords>  
</ResourceRecordSet>  
</ListResourceRecordSetsResponse>

### 6.2.2.7 Retrieve update request information (GET /v1.0/change/{updateRequestId})

Retrieves update request information.  
Update request information is retrieved by specifying the update request ID in the request.  
The update request ID is set in the response body of the update system API.  
*This API only supports update request IDs when the update system API is successful. The update system API is as follows:
- CreateHostedZone  
- DeleteHostedZone  
- ChangeResourceRecordSets
Request headers
n/a

Request parameters
n/a

Request elements
n/a

HTTP status

Status
The following error codes can be returned for the request.
One of the following values will be returned:

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Normal completion</td>
</tr>
<tr>
<td>404</td>
<td>The update request ID does not exist</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int</td>
<td>1..1</td>
</tr>
</tbody>
</table>

Response elements (normal completion)

GetChangeResponse
Envelope of the response.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>None</td>
<td>ChangeInfo</td>
</tr>
</tbody>
</table>

ChangeInfo
Envelope of the update request information.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>1..1</td>
<td>ListHostedZonesResponse</td>
<td>Id</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Status</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SubmittedAt</td>
</tr>
</tbody>
</table>

Id
Update request ID.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ChangeInfo</td>
<td>None</td>
</tr>
</tbody>
</table>

Status
Update status.
PENDING or INSYNC.
<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ChangeInfo</td>
<td>None</td>
</tr>
</tbody>
</table>

**SubmittedAt**

Datetime of update request. Format: YYYY-MM-DDThh:mm:ss.SSSZ

<table>
<thead>
<tr>
<th>Data type</th>
<th>Cardinality</th>
<th>Parent element</th>
<th>Child element</th>
</tr>
</thead>
<tbody>
<tr>
<td>xsd:string</td>
<td>1..1</td>
<td>ChangeInfo</td>
<td>None</td>
</tr>
</tbody>
</table>

**Example of request**

GET /change/d36956475553d655cf70a293adeb155c HTTP/1.1
Date: Fri, 06 Jun 2014 11:00:37 GMT
Content-Length: . . .
Host: dns.gls.cloud.global.fujitsu.com
Accept: application/xml
X-Auth-Token: MIIFvgY. . .

**Example of response**

HTTP/1.1 200 OK
Date: Fri, 06 Jun 2014 11:00:38 GMT
Content-Length: . . .
Content-Type: application/xml
x-fj-request-id: d96bd874-9bf2-11e1-8ee7-c98a0037a2b6
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetChangeResponse xmlns="http://docs.cloudcommunity.global.fujitsu.com/dns/api/v1.0/">
  <ChangeInfo>
    <Id>dcd102450ad397f197cb9f09755964f7</Id>
    <Status>INSYNC</Status>
    <SubmittedAt>2014-06-06T11:00:38.178Z</SubmittedAt>
  </ChangeInfo>
</GetChangeResponse>