

Elastic Cloud Server

API Reference

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1 Before You Start

1.1 Overview

Welcome to *Elastic Cloud Server API Reference*. An Elastic Cloud Server (ECS) is an easy-to-obtain, elastically scalable computing server that consists of a CPU, memory, image, and EVS disks. An ECS can work with a Virtual Private Cloud (VPC), virtual firewall, and multiple copies of data to build an efficient, reliable, and secure computing environment to let your services run stably. After creating an ECS, you can use it like using your local computer or physical server.

This document describes ECS application programming interfaces (APIs), including description, syntax, parameters, and examples. For details about all supported operations, see [API Overview](#).

If you plan to access ECSs through an API, ensure that you are familiar with ECS concepts. For details, see [Service Overview](#).

1.2 API Calling

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

1.3 Endpoints

An endpoint is the **request address** for calling an API. Endpoints vary depending on services and regions. For the endpoints of all services, see regions and endpoints.

1.4 Constraints

- The number of ECSs that you can create is determined by your quota. To view or increase the quota, see [Quota Adjustment](#).
- For more constraints, see API description.

1.5 Concepts

- **Account**

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

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

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

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

For details, see [Region and AZ](#).
- **AZ**

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

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

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

For details about enterprise projects and about how to obtain enterprise project IDs, see [Enterprise Management User Guide](#).

1.6 Selecting an API Type or Version

API Types

ECS APIs are classified as follows:

1. APIs for ECS with customized specifications
2. Native OpenStack APIs that comply with OpenStack community specifications

The two types of APIs offer similar functions but are used in different application scenarios. OpenStack APIs are used to interconnect with open-source ecosystem tools. ECS APIs have enhanced certain functions based on the OpenStack APIs. To better use OpenStack APIs, you are advised to learn about OpenStack concepts and knowledge.

Versions

APIs for ECS include native OpenStack APIs and ECS APIs. ECS APIs can be of V1 or V1.1. You are advised to use ECS APIs.

OpenStack APIs can be of V2 or V2.1. V2.1 supports all functions supported by V2. Additionally, V2.1 supports microversions. If OpenStack APIs are to be used, V2.1 APIs are recommended.

NOTE

To switch an OpenStack API from V2.1 to V2, change **2.1** in the native API URI to **2**.

Microversions

Microversions specify small API changes. A V2.1 API allows you to specify a microversion for related new API functions. To obtain the supported major versions, and maximum and minimum microversions, see [Querying All API Versions](#).

To enable microversion features, add header **X-OpenStack-Nova-API-Version** or **OpenStack-API-Version** to the request when calling an OpenStack API. For example, to enable microversion V2.26 features, add the following header to the HTTPS request:

X-OpenStack-Nova-API-Version: 2.26 or **OpenStack-API-Version: compute 2.26**

NOTE

If you do not specify the header of a V2.1 API, the system uses header **OpenStack-API-Version: compute 2.1** or **X-OpenStack-Nova-API-Version: 2.1** by default.

Microversion Request Example

For example, you are required to use the API for details about an ECS to view the **OS-EXT-SRV-ATTR:hostname** field.

- **Using a V2 API without a microversion**

- GET: `https://{Endpoint}/v2/74610f3a5ad941998e91f076297ecf27/servers/detail`

{Endpoint} indicates the IAM endpoint. For details, see [Endpoints](#).

- Headers

Content-Type	application/json
X-Auth-Token	\${token}

- Response body

```
{
  "servers": [
    {
      "tenant_id": "74610f3a5ad941998e91f076297ecf27",
      "addresses": {
        "05d4fb93-84e5-4964-853b-32992ffef627": [
          {
            "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:20:17:95",
            "OS-EXT-IPS:type": "fixed",
            "addr": "192.168.0.228",
            "version": 4
          },
          {
            "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:20:17:95",
            "OS-EXT-IPS:type": "floating",
            "addr": "192.168.51.61",
            "version": 4
          }
        ]
      },
      "metadata": {},
      "OS-EXT-STS:task_state": null,
      "OS-DCF:diskConfig": "MANUAL",
      "OS-EXT-AZ:availability_zone": "az1-dc1",
      "links": [
        {
          "rel": "self",
          "href": "https://None/v2.1/74610f3a5ad941998e91f076297ecf27/servers/89c312bb-285a-4026-a237-d441908c2f9e"
        },
        {
          "rel": "bookmark",
          "href": "https://None/74610f3a5ad941998e91f076297ecf27/servers/89c312bb-285a-4026-a237-d441908c2f9e"
        }
      ],
      "OS-EXT-STS:power_state": 1,
      "id": "89c312bb-285a-4026-a237-d441908c2f9e",
      "os-extended-volumes:volumes_attached": [
        {
          "id": "c70c4b8e-33bd-4d1f-ab16-14a5a38cdeaf"
        }
      ],
      "OS-EXT-SRV-ATTR:host": "pod05.test.01",
      "image": {
        "links": [
          {
            "rel": "bookmark",
            "href": "https://None/74610f3a5ad941998e91f076297ecf27/images/1189efbf-d48b-46ad-a823-94b942e2a000"
          }
        ],
        "id": "1189efbf-d48b-46ad-a823-94b942e2a000"
      },
      "OS-SRV-USG:terminated_at": null,
      "accessIPv4": ""
    }
  ]
}
```

```

"accessIPv6": "",
"created": "2018-05-11T03:21:56Z",
"hostId": "fc7a8ff86bac050f0d9454b1b078dcc97060e819acbf06f04c3e338f",
"OS-EXT-SRV-ATTR:hypervisor_hostname": "nova012@7",
"key_name": "id_rsa",
"flavor": {
  "links": [
    {
      "rel": "bookmark",
      "href": "https://None/74610f3a5ad941998e91f076297ecf27/flavors/s3.small.1"
    }
  ],
  "id": "s3.small.1"
},
"security_groups": [
  {
    "name": "default"
  }
],
"config_drive": "",
"OS-EXT-STS:vm_state": "active",
"OS-EXT-SRV-ATTR:instance_name": "instance-0016c624",
"user_id": "f79791beca3c48159ac2553fff22e166",
"name": "zt-test",
"progress": 0,
"OS-SRV-USG:launched_at": "2018-05-11T03:22:16.701600",
"updated": "2018-05-11T03:22:51Z",
"status": "ACTIVE"
}
]
}

```

- Conclusion: The response body does not contain the **OS-EXT-SRV-ATTR:hostname** field.
- **Using a V2.1 API with a microversion**
 - GET: `https://{Endpoint}/v2.1/74610f3a5ad941998e91f076297ecf27/servers/detail`
{Endpoint} indicates the IAM endpoint. For details, see [Endpoints](#).
 - Headers

Content-Type	application/json
X-Auth-Token	#{token}
X-OpenStack-Nova-API-Version	2.26

- Response body

```

{
  "servers": [
    {
      "tenant_id": "74610f3a5ad941998e91f076297ecf27",
      "addresses": {
        "05d4fb93-84e5-4964-853b-32992ffef627": [
          {
            "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:20:17:95",
            "OS-EXT-IPS:type": "fixed",
            "addr": "192.168.0.228",
            "version": 4
          },
          {
            "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:20:17:95",
            "OS-EXT-IPS:type": "floating",
            "addr": "192.168.51.61",
            "version": 4
          }
        ]
      }
    }
  ]
}

```

```
}
]
},
"metadata": {},
"OS-EXT-STS:task_state": null,
"description": "zt-test",
"OS-EXT-SRV-ATTR:hostname": "zt-test",
"OS-DCF:diskConfig": "MANUAL",
"OS-EXT-AZ:availability_zone": "az-test-01",
"links": [
  {
    "rel": "self",
    "href": "https://None/v2.1/74610f3a5ad941998e91f076297ecf27/servers/89c312bb-285a-4026-a237-d441908c2f9e"
  },
  {
    "rel": "bookmark",
    "href": "https://None/74610f3a5ad941998e91f076297ecf27/servers/89c312bb-285a-4026-a237-d441908c2f9e"
  }
],
"OS-EXT-STS:power_state": 1,
"id": "89c312bb-285a-4026-a237-d441908c2f9e",
"os-extended-volumes:volumes_attached": [
  {
    "delete_on_termination": true,
    "id": "c70c4b8e-33bd-4d1f-ab16-14a5a38cdeaf"
  }
],
"locked": false,
"OS-EXT-SRV-ATTR:kernel_id": "",
"OS-EXT-SRV-ATTR:host": "pod05.test.01",
"OS-EXT-SRV-ATTR:ramdisk_id": "",
"image": {
  "links": [
    {
      "rel": "bookmark",
      "href": "https://None/74610f3a5ad941998e91f076297ecf27/images/1189efbf-d48b-46ad-a823-94b942e2a000"
    }
  ],
  "id": "1189efbf-d48b-46ad-a823-94b942e2a000"
},
"accessIPv4": "",
"OS-SRV-USG:terminated_at": null,
"accessIPv6": "",
"OS-EXT-SRV-ATTR:launch_index": 0,
"created": "2018-05-11T03:21:56Z",
"OS-EXT-SRV-ATTR:user_data": null,
"hostId": "fc7a8ff86bac050f0d9454b1b078dcc97060e819acb06f04c3e338f",
"OS-EXT-SRV-ATTR:reservation_id": "r-pbqmaxer",
"OS-EXT-SRV-ATTR:root_device_name": "/dev/vda",
"host_status": "UP",
"OS-EXT-SRV-ATTR:hypervisor_hostname": "nova012@7",
"tags": [],
"key_name": "id_rsa",
"flavor": {
  "links": [
    {
      "rel": "bookmark",
      "href": "https://None/74610f3a5ad941998e91f076297ecf27/flavors/s3.small.1"
    }
  ],
  "id": "s3.small.1"
},
"security_groups": [
  {
    "name": "default"
  }
]
```

```
    ],  
    "config_drive": "",  
    "OS-EXT-STS:vm_state": "active",  
    "OS-EXT-SRV-ATTR:instance_name": "instance-0016c624",  
    "user_id": "f79791beca3c48159ac2553fff22e166",  
    "name": "zt-test",  
    "progress": 0,  
    "OS-SRV-USG:launched_at": "2018-05-11T03:22:16.701600",  
    "updated": "2018-05-11T03:22:51Z",  
    "status": "ACTIVE"  
  }  
]  
}
```

- Conclusion: The response body contains the **OS-EXT-SRV-ATTR:hostname** field.

Microversion Response Example

If the values of **version** and **min_version** are null, the endpoint does not support microversions.

- **version**: indicates the maximum microversion.
- **min_version**: indicates the minimum microversion.

A microversion on the client must be within the range specified by **version** and **min_version** to access the endpoint. The client uses the following HTTP header to specify a microversion:

X-OpenStack-Nova-API-Version: 2.4

Since microversion 2.27, the client can also use the following header to specify a microversion:

Openstack-API-Version: compute 2.27

In the following response example, the maximum microversion is 2.14 and the minimum one is 2.1:

```
{  
  "versions": [  
    {  
      "id": "v2.0",  
      "links": [  
        {  
          "href": "http://openstack.example.com/v2/",  
          "rel": "self"  
        }  
      ],  
      "status": "SUPPORTED",  
      "version": "",  
      "min_version": "",  
      "updated": "2011-01-21T11:33:21Z"  
    },  
    {  
      "id": "v2.1",  
      "links": [  
        {  
          "href": "http://openstack.example.com/v2.1/",  
          "rel": "self"  
        }  
      ],  
      "status": "CURRENT",  
      "version": "2.14",  
      "min_version": "2.1",  
      "updated": "2013-07-23T11:33:21Z"  
    }  
  ]  
}
```



```
}  
]  
}
```

1.7 Querying Data in Pages

Nova APIs allow users to query data using search criteria. The **limit** and **marker** parameters are added to the URL of the list request to enable the system to display query results in pages. The query results are displayed by creation time (**create_time**) of the records in ascending order. If the creation time is not provided, the results are displayed by object ID in ascending order.

Parameter	Type	Mandatory	Description
limit	String	No	Restricts the number of records displayed on each page. If the limit value exceeds the maximum number of records that can be displayed on each page, error code 403 will be returned.
marker	String	No	Indicates the ID of the last record on the previous page. If the marker value is invalid, error code 400 will be returned.

next ref in the response indicates the URL of the next page.

2 API Overview

APIs for ECS include native OpenStack APIs and ECS APIs. ECS APIs are recommended.

ECS APIs

Table 2-1 ECS APIs

Type	Description
Lifecycle management	Create, delete, or query ECSs.
Status management	Modify ECS specifications and reinstall or change the ECS OS
Batch operations	Start, restart, stop, or modify ECSs in a batch.
Flavor management	Query details about flavors and extended flavor information.
NIC management	<ul style="list-style-type: none">• Add or delete ECS NICs in a batch.• Bind or unbind a private IP address to or from an ECS NIC.
Disk management	Attach, detach, or query ECS disks.
Metadata management	Update ECS metadata and delete specified ECS metadata.
Tenant quota management	Query the quotas of a tenant, including the quota limit and used quotas.
Task status management	Query asynchronous API execution status, such as creating or deleting ECSs, performing batch operations on ECSs, or performing operations on NICs.

Type	Description
Tag management	Create, delete, or query ECS D2 tags. Tags can be added or deleted in a batch.
ECS group management	Create or delete an ECS group, add an ECS to an ECS group, or delete an ECS from an ECS group.

Native OpenStack APIs

Table 2-2 Native OpenStack APIs

Type	Description
API version query	<ul style="list-style-type: none">Query all API versions.Query a specified API version.
Lifecycle management	Create, delete, modify, or query ECSs.
Status management	Start, stop, restart, lock, or unlock ECSs; modify ECS specifications; roll back ECS specifications modification.
Network management	Query ECS tenants or networks.
Image management	Delete or query images. This image management API has been discarded. Use the IMS API.
Security group management	Add, remove, query, create, update, or delete security groups and security group rules.
Flavor management	Query ECS flavors and details.
NIC management	Add, delete, or query ECS NICs.
Disk management	Attach, detach, or query ECS disks.
Metadata management	Update, set, delete, query, obtain, or modify ECS metadata.
Tenant quota management	Query tenant quotas.
Key and password management	Query, create, or delete SSH keys.

Type	Description
Floating IP address management	Allocate, release, create, query, or delete floating IP addresses. This floating IP address management API has been discarded. Use the network service API.
ECS group management	Create, query, or delete ECS groups.
ECS operation management	Query ECS operations or a specified operation by request ID.
ECS console management	Obtain ECS management console logs.
Snapshot management	Create, query, or delete snapshots. The snapshot management API has been discarded. Use the storage service API.
AZ	Show AZs.
Tag management	Create, delete, or query ECS D1 tags.

3 Calling APIs

3.1 Making an API Request

This section describes the structure of a REST API request, and uses the IAM API for **obtaining a user token** as an example to demonstrate how to call an API. The obtained token can then be used to authenticate the calling of other APIs.

Request URI

A request URI is in the following format:

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

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

Table 3-1 URI parameter description

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

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

For example, to obtain an IAM token in the **Dublin** region, obtain the endpoint of IAM (**iam.myhuaweicloud.eu**) for this region and the **resource-path** (**/v3/auth/tokens**) in the URI of the API used to **obtain a user token**. Then, construct the URI as follows:

```
https://iam.myhuaweicloud.eu/v3/auth/tokens
```

NOTE

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

Request Methods

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

Table 3-2 HTTP methods

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

For example, in the case of the API used to **obtain a user token**, the request method is **POST**. The request is as follows:

```
POST https://iam.myhuaweicloud.eu/v3/auth/tokens
```

Request Header

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

Common request header fields are as follows.

Table 3-3 Common request header fields

Parameter	Description	Mandatory	Example Value
Host	Specifies the server domain name and port number of the resources being requested. The value can be obtained from the URL of the service API. The value is in the format of <i>Hostname:Port number</i> . If the port number is not specified, the default port is used. The default port number for https is 443 .	No This field is mandatory for AK/SK authentication.	code.test.com or code.test.com: 443
Content-Type	Specifies the type (or format) of the message body. The default value application/json is recommended. Other values of this field will be provided for specific APIs if any.	Yes	application/json
Content-Length	Specifies the length of the request body. The unit is byte.	No	3495
X-Project-Id	Specifies the project ID. Obtain the project ID by following the instructions in Obtaining a Project ID .	No This field is mandatory for requests that use AK/SK authentication in the Dedicated Cloud (DeC) scenario or multi-project scenario.	e9993fc787d94b 6c886cbaa340f9c 0f4

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

 **NOTE**

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

For more details, see "Authentication Using AK/SK" in [Authentication](#).

The API used to **obtain a user token** does not require authentication. Therefore, only the **Content-Type** field needs to be added to requests for calling the API. An example of such requests is as follows:

```
POST https://iam.myhuaweicloud.eu/v3/auth/tokens
Content-Type: application/json
```

(Optional) Request Body

This part is optional. The body of a request is often sent in a structured format as specified in the **Content-Type** header field. The request body transfers content except the request header.

The request body varies between APIs. Some APIs do not require the request body, such as the APIs requested using the GET and DELETE methods.

In the case of the API used to **obtain a user token**, the request parameters and parameter description can be obtained from the API request. The following provides an example request with a body included. Replace *username*, *domainname*, ******* (login password), and *xxxxxxxxxxxxxxxxxxx* (project name) with the actual values. Obtain a project name from Regions and Endpoints.

 **NOTE**

The **scope** parameter specifies where a token takes effect. You can set **scope** to an account or a project under an account. In the following example, the token takes effect only for the resources in a specified project. For more information about this API, see [Obtaining a User Token](#).

```
POST https://iam.myhuaweicloud.eu/v3/auth/tokens
Content-Type: application/json
```



```
{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],
      "password": {
        "user": {
          "name": "username",
          "password": "*****",
          "domain": {
            "name": "domainname"
          }
        }
      }
    },
    "scope": {
      "project": {
        "name": "xxxxxxxxxxxxxxxxxxxxx"
      }
    }
  }
}
```

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

3.2 Authentication

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

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

Token Authentication

NOTE

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

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

IMS is a project-level service. When you call the API, set **auth.scope** in the request body to **project**.

```
{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],
      "password": {
        "user": {
          "name": "username", // IAM user name
        }
      }
    }
  }
}
```

```
"password": "*****", // IAM user password
"domain": {
  "name": "domainname" // Name of the account to which the IAM user belongs
}
},
"scope": {
  "project": {
    "name": "xxxxxxx" // Project name
  }
}
}
```

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

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

AK/SK Authentication

NOTE

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

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

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

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

NOTE

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

3.3 Response

Status Code

After sending a request, you will receive a response, including a status code, response header, and response body.

A status code is a group of digits, ranging from 1xx to 5xx. It indicates the status of a request. For more information, see [HTTP Status Codes](#).

For example, if status code **201** is returned for calling the API used to **obtain a user token**, the request is successful.

Response Header

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

Figure 3-1 shows the response header fields for the API used to **obtain a user token**. The **x-subject-token** header field is the desired user token. This token can then be used to authenticate the calling of other APIs.

Figure 3-1 Header fields of the response to the request for obtaining a user token

```

connection → keep-alive
content-type → application/json
date → Tue, 12 Feb 2019 06:52:13 GMT
server → Web Server
strict-transport-security → max-age=31536000; includeSubdomains;
transfer-encoding → chunked
via → proxy A
x-content-type-options → nosniff
x-download-options → noopen
x-frame-options → SAMEORIGIN
x-iam-trace-id → 218d45ab-d674-4995-af3a-2d0255ba41b5
x-subject-token
→ MIiYXQVJKoZlhvcNAQcCoIIYJCCGEoCAQExDTALBglghkgBZQMEAgEwggharBgkqhkiG9w0B8wGgghacBIIWmHsidG9rZW4iOnsiZXhwaXJlc19hdCI6IjwMTktMDItMTNUMC
fj3KJs6YgKnpVNRbW2eZ5eb78SZOkqjACgkqlQ01wi4JlGzrpd18LGXK5bldfq4lqHCYb8P4NaY0NYejcAgzJVeFYtLWT1GSO0zxKZmlQHqj82HBqHdgIZO9fuEbL5dMhdavj+33wEI
xHRCE9I87o+k9-
j+CMZSEB7bUGd5Uj6eRASXl1jipPEGA270g1FruooL6jqglFkNPQuFSOU8+uSsttVwRtNfsC+qTp22Rkd5MCqFGQ8LcuUxC3a+9CMBnOintWW7oeRUVhVpxk8pxiX1wTEboX-
RzT6MUbpvGw-oPNFYxJECknoH3HRozv0vN--n5d6Nbxg==
x-xss-protection → 1; mode=block;

```

(Optional) Response Body

The body of a response is often returned in structured format as specified in the **Content-Type** header field. The response body transfers content except the response header.

The following is part of the response body for the API used to **obtain a user token**.

```

{
  "token": {
    "expires_at": "2019-02-13T06:52:13.855000Z",
    "methods": [
      "password"
    ],
    "catalog": [
      {
        "endpoints": [
          {
            "region_id": "az-01",

```

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

```

{
  "error_msg": "The format of message is error",

```

```
"error_code": "AS.0001"  
}
```

In the response body, **error_code** is an error code, and **error_msg** provides information about the error.

4 APIs (Recommended)

4.1 Lifecycle Management

4.1.1 Creating ECSs

Function

This API is used to create one or more ECSs.

The V1.1 API supports all functions (see [Creating an ECS \(Pay-per-Use\)](#)) provided by the V1 API. Additionally, the V1.1 API supports the creation of yearly/monthly ECSs.

This is an asynchronous API. After the ECS creation request is issued, the system will return **job_id**. The ECS creation is still in progress. Therefore, you need to call the API described in [Querying Task Execution Status](#) to obtain the task status. When the status changes to **SUCCESS**, the ECS has been created.

This API allows you to set the X-Client-Token request header in the HTTP request header to ensure the request idempotence. For details, see [Idempotent Requests](#).

Logging in to an ECS can be authenticated using either a key pair or password. The login using a key pair is more secure than using a password. Therefore, key pair authentication is recommended.

- Key pair

A key pair is used for ECS login authentication.

Method of calling APIs: Use the **key_name** field to specify the key file used for logging in to the ECS. For details, see [Table 4-2](#).

- Password

If you choose the initial password for authentication in an ECS, you can log in to the ECS using the username and its initial password. The initial password of user **root** is used for authentication in Linux.

Method of calling APIs: Use the **adminPass** field to specify the initial login password of the administrator account. For details about how to use the **adminPass** field, see [Table 4-2](#). If an encrypted password is required for

logging in to a Linux ECS that is created using an image with Cloud-Init installed, you can use the **user_data** field to inject the password. For details, see [Table 4-2](#).

 **NOTE**

If the **user_data** field is specified for a Linux ECS that is created using an image with Cloud-Init installed, the **adminPass** field becomes invalid.

- **Image password**

If you use a Linux private image to create an ECS, you can use the image password for login authentication.

Method of calling APIs: If the image password is used, the **key_name** and **adminPass** fields do not need to be specified.

Constraints

- Ensure that your account has sufficient balance because this API does not support coupons. If the account balance is insufficient, a pending order will be generated.

URI

- **URI format**
POST /v1.1/{project_id}/cloudservers
- **Parameter description**

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

Request

Table 4-1 Request parameters

Parameter	Mandatory	Type	Description
server	Yes	Object	Specifies the ECS information. For details, see Table 4-2 .

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	<p>Specifies whether to check the request and create the ECS. The default value is false.</p> <ul style="list-style-type: none"> • true: indicates that only the request is sent, but the ECS will not be created. Check items include mandatory parameters and request format. <ul style="list-style-type: none"> - If the check fails, the system returns an error. - If the check is successful, the system returns status code 202. • false: indicates that the request is sent and the ECS will be created if the check result is as expected.

Table 4-2 Parameters for creating an ECS

Parameter	Mandatory	Type	Description
imageRef	Yes	String	<p>Specifies the ID of the system image used for creating ECSs. The ID is in Universally Unique Identifier (UUID) format.</p> <p>You can obtain the image ID from the console or by following the instructions provided in "Querying Images" in <i>Image Management Service API Reference</i>.</p>
flavorRef	Yes	String	<p>Specifies the flavor ID of the ECS to be created.</p> <p>For details about the flavors that have been released, see "ECS Specifications and Types" in the <i>Elastic Cloud Server User Guide</i>.</p>

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Specifies the ECS name.</p> <p>For details, see How Can I Set Sequential ECS Names When Creating Multiple ECSs?</p> <p>A name must comply with the following rules:</p> <ul style="list-style-type: none"> The parameter value consists of 1 to 64 characters, including letters, digits, underscores (_), and hyphens (-). If more than one ECS is to be created (the count value is greater than 1), the system automatically adds a hyphen followed by a four-digit incremental number, such as -0000, to the end of each ECS name. If you specify a number, the name of the first new ECS will start from the specified number. In this case, the ECS name contains a maximum of 59 characters. <p>NOTE ECS hostnames comply with RFC 952 and RFC 1123 naming rules. It is recommended that you configure hostnames using digits, lowercase letters, and hyphens (-). Underscores (_) are converted into hyphens (-) by default.</p>
user_data	No	String	<p>Specifies the user data to be injected to the ECS during the creation. Text and text files can be injected.</p> <p>NOTE</p> <ul style="list-style-type: none"> The content of user_data must be encoded with base64. The maximum size of the content to be injected (before encoding) is 32 KB. <p>For more information about the user data to be injected, see Injecting User Data into ECSs in <i>Elastic Cloud Server User Guide</i>.</p> <p>Examples</p> <p>Before base64 encoding:</p> <ul style="list-style-type: none"> Linux #!/bin/bash echo user_test >> /home/user.txt <p>After base64 encoding:</p> <ul style="list-style-type: none"> Linux lyEgL2Jpbi9iYXNoDQplY2hvlHVzZXJfdGVzd-CAmZ3Q7Jmd0OyAvaG9tZS91c2VyLnR4dA==

Parameter	Mandatory	Type	Description
adminPass	No	String	<p>Specifies the initial login password of the administrator account for logging in to an ECS using password authentication. The Linux administrator is root.</p> <p>Password complexity requirements:</p> <ul style="list-style-type: none">• Consists of 8 to 26 characters.• Contains at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters (!@\$%^_-=+[{ }];,./?).• Cannot contain the username or the username in reverse.
key_name	No	String	<p>Specifies the name of the SSH key used for logging in to the ECS.</p> <p>Keys can be created using the key creation API (Creating and Importing an SSH Key Pair) or obtained using the SSH key query API (Querying SSH Key Pairs).</p> <p>Note:</p> <p>If chargeMode in the extendparam parameter of a created ECS is set to prePaid, which indicates that the ECS is billed in yearly/monthly payments, the key_name parameter must be used with the metadata parameter. For details, see metadata Field Description for Creating ECSs and example request 1.</p>
vpcid	Yes	String	<p>Specifies the ID of the VPC to which the ECS belongs. The value is in the format of the UUID.</p> <p>You can obtain the VPC ID from the management console or by following the instructions provided in "Querying VPCs" in <i>Virtual Private Cloud API Reference</i>.</p>

Parameter	Mandatory	Type	Description
nics	Yes	Array of objects	<p>Specifies the NIC information of the ECS. For details, see Table 4-3.</p> <p>Note:</p> <ul style="list-style-type: none">• The network of the primary NIC must belong to the VPC specified by vpcid. When you create NICs, the first NIC specified is the primary NIC.• A maximum of 12 NICs can be attached to an ECS by default.• The maximum number of NICs varies depending on ECS specifications. For details, see ECS Specifications.
publicip	No	Object	<p>Specifies the EIP bound to the ECS, which can be configured in one of the following ways:</p> <ul style="list-style-type: none">• Do not use: In such a case, this field is unavailable.• Automatically assign an EIP. You need to specify the EIP.• Use existing one. You need to specify an existing EIP. <p>For details, see publicip Field Description.</p>

Parameter	Mandatory	Type	Description
count	No	Integer	<p>Specifies the number of ECSs to be created.</p> <p>Note:</p> <ul style="list-style-type: none">• If this parameter is not specified, the default value is 1.• If chargingMode in the extendparam parameter is set to postPaid, the ECS is billed in pay-per-use payments, and a tenant can create a maximum of 500 ECSs.• If chargingMode in the extendparam parameter is set to prePaid, the ECS is billed in yearly/monthly payments, and a tenant can create a maximum of 100 ECSs. A maximum of 400 resources can be purchased at a time. For example, a purchased ECS includes mandatory resources, such as one cloud server and one system disk, and other optional resources, such as data disks, EIP, and bandwidth. All of these are included in 400 resources. The system will report an error when the number of resources exceeds 400.
root_volume	Yes	Object	<p>Specifies ECS system disk configurations. The system disk and data disk created during the creation of a yearly/monthly ECS are also in yearly/monthly payments, and the period of the disks is the same as that of the ECS.</p> <p>For details, see Table 4-4.</p>
data_volumes	No	Array of objects	<p>Specifies ECS data disk configurations. Each data structure represents a data disk to be created.</p> <p>An ECS can be attached with a maximum of 59 data disks (certain flavors support only 23 data disks).</p> <p>For details, see Table 4-5.</p>
security_groups	No	Array of objects	<p>Specifies ECS security groups.</p> <p>Constraints: If this parameter is left blank, the default security group is bound to the ECS by default.</p> <p>For details, see security_groups Field Description.</p>

Parameter	Mandatory	Type	Description
availability_zone	No	String	Specifies the AZ where the ECS is located. NOTE If this parameter is not specified, the system automatically selects an AZ.
extendparam	No	Object	Specifies the ECS supplementary information. For details, see Table 7-9 .
metadata	No	Map<String,String>	Specifies the ECS metadata. You can use metadata to customize key-value pairs. NOTE <ul style="list-style-type: none">• A maximum of 10 key-value pairs can be injected.• A metadata key consists of 1 to 255 characters and contains only uppercase letters, lowercase letters, spaces, digits, hyphens (-), underscores (_), colons (:), and decimal points (.).• A metadata value consists of a maximum of 255 characters. For details about reserved key-value pairs, see Table 7-11 .
os:scheduler_hints	No	Object	Schedules ECSs, for example, by configuring an ECS group. For details, see Table 7-12 .

Parameter	Mandatory	Type	Description
tags	No	Array of strings	<p>Specifies the tags of an ECS.</p> <p>A tag is in the format of "key.value", where the maximum lengths of key and value are 36 and 43 characters, respectively.</p> <p>When adding a tag to an ECS, ensure that the tag complies with the following requirements:</p> <ul style="list-style-type: none"> • The key of the tag can contain only uppercase letters, lowercase letters, digits, underscores (_), and hyphens (-). • The value of the tag can contain only uppercase letters, lowercase letters, digits, underscores (_), hyphens (-), and periods (. <p>NOTE</p> <ul style="list-style-type: none"> • When you create ECSs, one ECS supports up to 10 tags. • The server_tags field provides the same functions as those of tags, but supports more keys and values. Therefore, the server_tags field is recommended.
auto_terminate_time	No	String	<p>This parameter is not supported now and will be available soon.</p> <p>Specifies the time when resources will be automatically released.</p> <p>The value is in the format of "yyyy-MM-ddTHH:mm:ssZ" in UTC+0 and complies with ISO8601.</p> <p>If the value of second (ss) is not 00, the system automatically sets to the current value of minute (mm).</p> <p>The minimum release time is half an hour later than the current time.</p> <p>The maximum release time is three years later than the current time.</p> <p>For example, set the value to 2020-09-25T12:05:00Z.</p> <p>NOTE</p> <p>This function is supported by pay-per-use ECSs only.</p>

Table 4-3 nics field description

Parameter	Mandatory	Type	Description
subnet_id	Yes	String	Specifies the subnet of the ECS. The value must be the ID of the subnet created in the VPC specified by vpcid and in the format of the UUID. You can obtain the parameter value by calling a VPC API for Querying Subnets .
ip_address	No	String	Specifies the IP address of the NIC used by the ECS. The value is an IPv4 address. Constraints: <ul style="list-style-type: none">• If this parameter is left blank or set to "", an unused IP address in the subnet is automatically assigned as the IP address of the NIC.• If this parameter is specified, its value must be an unused IP address in the network segment of the subnet.

Table 4-4 root_volume field description

Parameter	Mandatory	Type	Description
volumetype	Yes	String	Specifies the ECS system disk type, which must be one of available disk types. The value can be SATA , SAS , GPSSD , SSD , or ESSD . <ul style="list-style-type: none">• SSD: the ultra-high I/O type• SAS: the high I/O type• SATA: the common I/O type• GPSSD: the general purpose SSD type• ESSD: the extreme SSD type If the specified disk type is not available in the AZ, the disk will fail to be created. NOTE <ul style="list-style-type: none">• For details about disk types, see Disk Types and Performance.

Parameter	Mandatory	Type	Description
size	No	Integer	<p>Specifies the system disk size, in GB. The value ranges from 1 to 1024.</p> <p>Constraints:</p> <ul style="list-style-type: none"> The system disk size must be greater than or equal to the minimum system disk size supported by the image (min_disk attribute of the image). If this parameter is not specified or is set to 0, the default system disk size is the minimum value of the system disk in the image (min_disk attribute of the image). <p>NOTE To obtain the minimum system disk size (min_disk) of an image, click the image on the management console for its details. Alternatively, call the native OpenStack API for querying details about an image. For details, see "Querying Image Details (Native OpenStack)" in <i>Image Management Service API Reference</i>.</p>
extendparam	No	Object	<p>Provides the disk information.</p> <p>For details, see extendparam Field Description for Creating Disks.</p>
hw:passthrough	No	Boolean	<p>Specifies the device type of the EVS disks to be created.</p> <ul style="list-style-type: none"> If this parameter is set to false, VBD disks are created. If this parameter is set to true, SCSI disks are created. If this parameter is not specified or set to a non-Boolean character, VBD disks are created by default.

Table 4-5 data_volumes field description

Parameter	Mandatory	Type	Description
volumetype	Yes	String	<p>Specifies the type of the ECS data disk, which must be one of available disk types. The value can be SATA, SAS, GPSSD, SSD, or ESSD.</p> <ul style="list-style-type: none">• SSD: the ultra-high I/O type• SAS: the high I/O type• SATA: the common I/O type• GPSSD: the general purpose SSD type• ESSD: the extreme SSD type <p>If the specified disk type is not available in the AZ, the disk will fail to be created.</p> <p>NOTE</p> <ul style="list-style-type: none">• For details about disk types, see Disk Types and Performance.
size	Yes	Integer	<p>Specifies the data disk size, in GB. The value ranges from 10 to 32768.</p> <p>When you use a data disk image to create a data disk, ensure that the value of this parameter is greater than or equal to the size of the source data disk that is used to create the data disk image.</p>
shareable	No	Boolean	<p>Specifies whether the disk is shared. The value can be true (specifies a shared disk) or false (a common EVS disk).</p> <p>NOTE</p> <p>This field has been discarded. Use multiattach.</p>
multiattach	No	Boolean	<p>Specifies the shared disk information.</p> <ul style="list-style-type: none">• true: indicates that the created disk is a shared disk.• false: indicates that the created disk is a common EVS disk. <p>NOTE</p> <ul style="list-style-type: none">• If this parameter is set to true, the type of the shared disk is SCSI.• The shareable field is not used anymore. If both shareable and multiattach must be used, ensure that the values of the two fields are the same. If this parameter is not specified, common EVS disks are created by default.

Parameter	Mandatory	Type	Description
hw:passthrough	No	Boolean	Specifies the device type of the EVS disks to be created. <ul style="list-style-type: none">• If this parameter is set to false, VBD disks are created.• If this parameter is set to true, SCSI disks are created.• If this parameter is not specified or set to a non-Boolean character, VBD disks are created by default.
extendparam	No	Object	Provides the disk information. For details, see Table 7-7 .
data_image_id	No	String	Specifies ID of the data image. The value is in UUID format. If data disks are created using a data disk image, this parameter is mandatory and it does not support metadata.
metadata	No	Object	Specifies the EVS disk metadata. Ensure that key and value in the metadata contain at most 255 bytes. This field is used only when an encrypted disk is created. If data disks are created using a data disk image, this field cannot be used. For details, see metadata Field Description for Creating Disks .

Response

Table 4-6 Response parameters

Parameter	Type	Description
job_id	String	Specifies the returned task ID after delivering the task. You can query the task progress using this ID. For details how to query the execution status of the task based on the task ID, see Task Status Management .
order_id	String	Specifies the order ID. This parameter is returned for the creation of a yearly/monthly ECS.

Parameter	Type	Description
serverIds	Array of strings	Specifies ECS IDs. NOTE The details about an ECS are obtained by ECS ID. If the system returns a 404 error, the ECS is being created, or creating the ECS failed.

For details about abnormal responses, see [Responses \(Task\)](#).

Example Request

- Example URL request
POST `https://{endpoint}/v1.1/{project_id}/cloudservers`
- Example request 1 (creating a yearly/monthly ECS that is logged in using a key pair)

```
{
  "server": {
    "availability_zone": "az1-dc1",
    "name": "newservers",
    "imageRef": "5ef3a512-1c65-418e-8764-a4413c2f9277",
    "root_volume": {
      "volumetype": "SSD"
    },
    "data_volumes": [
      {
        "volumetype": "SSD",
        "size": 100
      },
      {
        "volumetype": "SSD",
        "size": 100,
        "multiattach": true,
        "hw:passthrough": true
      }
    ],
    "flavorRef": "s2.small.1",
    "vpcid": "2a6f4aa6-d93e-45f5-a8cb-b030dbf8cd68",
    "security_groups": [
      {
        "id": "6242ef48-4d35-49c8-8711-a6e54902e44a"
      }
    ],
    "nics": [
      {
        "subnet_id": "ef039b60-6a14-42d1-963b-687b627fea08"
      }
    ],
    "publicip": {
      "eip": {
        "iptype": "5_sbgp",
        "bandwidth": {
          "size": 1,
          "sharetype": "PER"
        }
      }
    },
    "key_name": "id_rsa",
    "count": 1,
    "metadata": {
      "op_svc_userid": "f79791beca3c48159ac2553fff22e166"
    },
    "extendparam": {
```

```
    "chargingMode": "prePaid",
    "periodType": "month",
    "periodNum": 1,
    "isAutoRenew": "true",
    "isAutoPay": "true",
    "enterprise_project_id": "f8e0ecc8-3825-4ee8-9596-fb4258ffdccb"
  },
  "os.scheduler_hints": {
    "group": "cdbbffe-ef18-47b4-a5c8-f61a984c0ecc"
  }
}
}
```

- Example request 2 (creating a yearly/monthly ECS that is logged in using a password)

```
{
  "server": {
    "availability_zone": "az1-dc1",
    "name": "newservers",
    "adminPass": "P@ssw0rd123",
    "imageRef": "9b04ad7e-6d97-40bf-9d62-57873382eab0",
    "root_volume": {
      "volumetype": "SSD"
    },
    "data_volumes": [
      {
        "volumetype": "SSD",
        "size": 100
      },
      {
        "volumetype": "SSD",
        "size": 100,
        "multiattach": true,
        "hw.passthrough": true
      }
    ],
    "flavorRef": "s2.small.1",
    "vpcid": "2a6f4aa6-d93e-45f5-a8cb-b030dbf8cd68",
    "security_groups": [
      {
        "id": "6242ef48-4d35-49c8-8711-a6e54902e44a"
      }
    ],
    "nics": [
      {
        "subnet_id": "ef039b60-6a14-42d1-963b-687b627fea08"
      }
    ],
    "publicip": {
      "eip": {
        "iptype": "5_sbgp",
        "bandwidth": {
          "size": 1,
          "sharetype": "PER"
        }
      }
    },
    "key_name": "",
    "count": 1,
    "metadata": {},
    "extendparam": {
      "chargingMode": "prePaid",
      "periodType": "month",
      "periodNum": 1,
      "isAutoRenew": "true",
      "isAutoPay": "true",
      "enterprise_project_id": "f8e0ecc8-3825-4ee8-9596-fb4258ffdccb"
    },
    "os.scheduler_hints": {
```

```
    "group": "cdbbffe-ef18-47b4-a5c8-f61a984c0ecc"  
  }  
}
```

- Example request 3 (creating a yearly/monthly ECS with a pay-per-use EIP bound)

```
{  
  "server": {  
    "availability_zone": "az1-dc1",  
    "name": "newservers",  
    "imageRef": "5ef3a512-1c65-418e-8764-a4413c2f9277",  
    "root_volume": {  
      "volumetype": "SSD"  
    },  
    "data_volumes": [  
      {  
        "volumetype": "SSD",  
        "size": 100  
      },  
      {  
        "volumetype": "SSD",  
        "size": 100,  
        "multiattach": true,  
        "hw.passthrough": true  
      }  
    ],  
    "flavorRef": "s2.small.1",  
    "vpcid": "2a6f4aa6-d93e-45f5-a8cb-b030dbf8cd68",  
    "security_groups": [  
      {  
        "id": "6242ef48-4d35-49c8-8711-a6e54902e44a"  
      }  
    ],  
    "nics": [  
      {  
        "subnet_id": "ef039b60-6a14-42d1-963b-687b627fea08"  
      }  
    ],  
    "publicip": {  
      "eip": {  
        "iptype": "5_sbgp",  
        "bandwidth": {  
          "size": 1,  
          "sharetype": "PER",  
          "chargemode": "traffic"  
        },  
        "extendparam": {  
          "chargingMode": "postPaid"  
        }  
      }  
    },  
    "key_name": "id_rsa",  
    "count": 1,  
    "metadata": {  
      "op_svc_userid": "f79791beca3c48159ac2553fff22e166"  
    },  
    "extendparam": {  
      "chargingMode": "prePaid",  
      "periodType": "month",  
      "periodNum": 1,  
      "isAutoRenew": "true",  
      "isAutoPay": "true",  
      "enterprise_project_id": "f8e0ecc8-3825-4ee8-9596-fb4258ffdccb"  
    },  
    "os:scheduler_hints": {  
      "group": "cdbbffe-ef18-47b4-a5c8-f61a984c0ecc"  
    }  
  }  
}
```

- Example request 4 (creating a yearly/monthly ECS with an EIP using a shared bandwidth bound)

```
{
  "server": {
    "availability_zone": "az1-dc1",
    "name": "newservers",
    "imageRef": "5ef3a512-1c65-418e-8764-a4413c2f9277",
    "root_volume": {
      "volumetype": "SSD"
    },
    "data_volumes": [
      {
        "volumetype": "SSD",
        "size": 100
      },
      {
        "volumetype": "SSD",
        "size": 100,
        "multiattach": true,
        "hw:passthrough": true
      }
    ],
    "flavorRef": "s2.small.1",
    "vpcid": "2a6f4aa6-d93e-45f5-a8cb-b030dbf8cd68",
    "security_groups": [
      {
        "id": "6242ef48-4d35-49c8-8711-a6e54902e44a"
      }
    ],
    "nics": [
      {
        "subnet_id": "ef039b60-6a14-42d1-963b-687b627fea08"
      }
    ],
    "publicip": {
      "eip": {
        "iptype": "5_sbgp",
        "bandwidth": {
          "id": "a0d4b26f-699d-49a0-bcc8-6f707a925abf",
          "sharetype": "WHOLE"
        }
      }
    },
    "key_name": "id_rsa",
    "count": 1,
    "metadata": {
      "op_svc_userid": "f79791beca3c48159ac2553fff22e166",
      "agency_name": "test"
    },
    "extendparam": {
      "chargingMode": "prePaid",
      "periodType": "month",
      "periodNum": 1,
      "isAutoRenew": "true",
      "isAutoPay": "true",
      "enterprise_project_id": "f8e0ecc8-3825-4ee8-9596-fb4258ffdcbb"
    },
    "os:scheduler_hints": {
      "group": "cddbfffe-ef18-47b4-a5c8-f61a984c0ecc"
    }
  }
}
```

- Example request 6 (pre-verification request body)

```
{
  "dry_run": true,
  "server": {
    "availability_zone": "az1-dc1",
    "name": "server",

```

```
"imageRef": "ff49b1f1-3e3e-4913-89c6-a026041661e8",
"root_volume": {
  "volumetype": "SSD"
},
"data_volumes": [
  {
    "volumetype": "SSD",
    "size": 100
  },
  {
    "volumetype": "SSD",
    "size": 100,
    "multiattach": true,
    "hw:passthrough": true
  }
],
"flavorRef": "s2.large.2",
"vpcid": "0dae26c9-9a70-4392-93f3-87d53115d171",
"security_groups": [
  {
    "id": "507ca48f-814c-4293-8706-300564d54620"
  }
],
"nics": [
  {
    "subnet_id": "157ee789-03ea-45b1-a698-76c92660dd83"
  }
],
"key_name": "sshkey-123"
}
```

Example Response

```
{
  "job_id": "ff808082739334d80173943ec9b42130",
  "order_id": "CS2007281506xxxx",
  "serverIds": [
    "fe0528f0-5b1c-4c8c-9adf-e5d5047b8c17",
    "679854ae-a50d-40c9-8132-b19bf3a306a1"
  ]
}
```

Or

```
{
  "error": {
    "code": "Ecs.0005",
    "message": "request body is illegal."
  }
}
```

Or

```
{
  "error": {
    "message": "privateIp [%s] is not in this subnet [%s]",
    "code": "Ecs.0005",
    "details": [
      {
        "code": "Ecs.0039"
      }
    ]
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.1.2 Creating an ECS (Pay-per-Use)

Function

This API is used to create one or more ECSs billed in pay-per-use mode.

This is an asynchronous API. After the ECS creation request is issued, the system will return **job_id**. The ECS creation is still in progress. Therefore, you need to call the API described in [Querying Task Execution Status](#) to obtain the task status. When the status changes to **SUCCESS**, the ECS has been created.

This API allows you to set the X-Client-Token request header in the HTTP request header to ensure the request idempotence. For details, see [Idempotent Requests](#).

Learn how to [authorize and authenticate](#) this API before using it.

Before calling this API, you need to obtain Regions and Endpoints.

Logging in to an ECS can be authenticated using either a key pair or password. For security purposes, you are advised to use key pair authentication.

- Key pair

A key pair is used for ECS login authentication.

Method of calling APIs: Use the **key_name** field to specify the key file used for logging in to the ECS.

- Password

If you choose the initial password for authentication in an ECS, you can log in to the ECS using the username and its initial password. The initial password of user **root** is used for authentication in Linux.

Method of calling APIs: Use the **adminPass** field to specify the initial login password of the administrator account. For details about how to use the **adminPass** field, see [Table 4-9](#). If an encrypted password is required for logging in to a Linux ECS that is created using an image with Cloud-Init installed, you can use the **user_data** field to inject the password. For details, see [Table 4-9](#).

NOTE

If the **user_data** field is specified for a Linux ECS that is created using an image with Cloud-Init installed, the **adminPass** field becomes invalid.

- Image password

If you use a Linux private image to create an ECS, you can use the image password for login authentication.

Method of calling APIs: If the image password is used, the **key_name** and **adminPass** fields do not need to be specified.

URI

POST /v1/{project_id}/cloudservers

[Table 4-7](#) describes the parameters in the URI.

Table 4-7 Parameter description

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

Request

Request parameters

[Table 4-8](#) describes the request parameters.

Table 4-8 Request parameters

Parameter	Mandatory	Type	Description
server	Yes	Object	Specifies the ECS information. For details, see Table 4-9 .
dry_run	No	Boolean	Specifies whether to check the request and create the ECS. The default value is false . <ul style="list-style-type: none">• true: indicates that only the request is sent, but the ECS will not be created. Check items include mandatory parameters and request format.<ul style="list-style-type: none">– If the check fails, the system returns an error.– If the check is successful, the system returns status code 202.• false: indicates that the request is sent and the ECS will be created if the check result is as expected.

Table 4-9 Parameters for creating an ECS

Parameter	Mandatory	Type	Description
imageRef	Yes	String	Specifies the ID of the system image used for creating ECSs. The ID is in Universally Unique Identifier (UUID) format.

Parameter	Mandatory	Type	Description
flavorRef	Yes	String	<p>Specifies the flavor ID of the ECS to be created.</p> <p>For details about the flavors that have been released, see "ECS Specifications and Types" in the <i>Elastic Cloud Server User Guide</i>.</p>
name	Yes	String	<p>Specifies the ECS name.</p> <p>For details, see How Can I Set Sequential ECS Names When Creating Multiple ECSs?</p> <p>Value requirements:</p> <ul style="list-style-type: none">• Consists of 1 to 64 characters, including letters, digits, underscores (_), and hyphens (-).• If more than one ECS is to be created (the count value is greater than 1), the system automatically adds a hyphen followed by a four-digit incremental number, such as -0000, to the end of each ECS name. If you specify a number, the name of the first new ECS will start from the specified number. In this case, the ECS name contains a maximum of 59 characters. <p>NOTE ECS hostnames comply with RFC952 and RFC1123 naming rules. It is recommended that you configure hostnames using digits, lower-case letters, and hyphens (-). Underscores (_) are converted into hyphens (-) by default.</p>

Parameter	Mandatory	Type	Description
user_data	No	String	<p>Specifies the user data to be injected to the ECS during the creation. Text and text files can be injected.</p> <p>NOTE</p> <ul style="list-style-type: none"> The content of user_data must be encoded with base64. The maximum size of the content to be injected (before encoding) is 32 KB. <p>For more information about the user data to be injected, see Injecting User Data into ECSs in <i>Elastic Cloud Server User Guide</i>.</p> <p>Examples</p> <p>Before base64 encoding:</p> <ul style="list-style-type: none"> Linux <pre>#!/bin/bash echo user_test >> /home/user.txt</pre> <p>After base64 encoding:</p> <ul style="list-style-type: none"> Linux <pre>lyEgL2Jpbi9iYXNoDQplY2hvlHVzZXJfdGVzd-CAmZ3Q7Jmd0OyAvaG9tZS91c2VyLnR4dA==</pre>
adminPass	No	String	<p>Specifies the initial login password of the administrator account for logging in to an ECS using password authentication. The Linux administrator is root.</p> <p>Password complexity requirements:</p> <ul style="list-style-type: none"> Consists of 8 to 26 characters. The password must contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters (!@\$%^&_+[]{};,:./?~#*). The password cannot contain the username or the username in reverse.
key_name	No	String	<p>Specifies the name of the SSH key used for logging in to the ECS.</p> <p>Keys can be created using the key creation API (Creating and Importing an SSH Key Pair) or obtained using the SSH key query API (Querying SSH Key Pairs).</p>

Parameter	Mandatory	Type	Description
vpcid	Yes	String	Specifies the ID of the VPC to which the ECS belongs. The value is in the format of the UUID. You can obtain the VPC ID from the management console or by following the instructions provided in "Querying VPCs" in <i>Virtual Private Cloud API Reference</i> .
nics	Yes	Array of objects	Specifies the NIC information of the ECS. For details, see Table 4-10 . Constraints: <ul style="list-style-type: none">• The network of the primary NIC must belong to the VPC specified by vpcid. When you create NICs, the first NIC specified is the primary NIC.• The value must be the ID of the subnet created in the VPC specified by vpcid and in the format of the UUID.• A maximum of 12 NICs can be attached to an ECS.• The maximum number of NICs varies depending on ECS specifications. For details, see ECS Specifications.
publicip	No	Object	Specifies the EIP bound to the ECS, which can be configured in one of the following ways: <ul style="list-style-type: none">• Do not use: In such a case, this parameter is unavailable.• Automatically assign: You need to specify the information about the EIP to be created.• Use existing: You need to specify an existing EIP for your ECS. For details, see Table 7-1 .
count	No	Integer	Specifies the number of ECSs to be created. Constraints: <ul style="list-style-type: none">• If this parameter is not specified, the default value is 1.• If the quota is sufficient, the maximum value is 500.
root_volume	Yes	Object	Specifies ECS system disk configurations. For details, see Table 4-11 .

Parameter	Mandatory	Type	Description
data_volumes	No	Array of objects	<p>Specifies ECS data disk configurations. Each data structure represents a data disk to be created.</p> <p>An ECS can be attached with a maximum of 59 data disks (certain flavors support only 23 data disks).</p> <p>For details, see Table 4-12.</p>
security_groups	No	Array of objects	<p>Specifies the security groups of the ECS.</p> <p>If this parameter is left blank, the default security group is bound to the ECS by default.</p> <p>For details, see Table 7-2.</p>
availability_zone	No	String	<p>Specifies the name of the AZ where the ECS is located.</p> <p>NOTE If this parameter is not specified, the system automatically selects an AZ.</p>
batch_create_in_multi_az	No	Boolean	<p>Specifies whether ECSs can be deployed in multiple random AZs. The default value is false.</p> <ul style="list-style-type: none">• true: The batch created ECSs are deployed in multiple AZs.• false: The batch created ECSs are deployed in a single AZ. <p>This parameter is valid when availability_zone is left blank.</p>
extendparam	No	Object	<p>Provides the supplementary information about the ECS to be created.</p> <p>For details, see Table 7-8.</p>

Parameter	Mandatory	Type	Description
metadata	No	Map<String,String>	<p>Specifies the metadata of the ECS to be created.</p> <p>You can use metadata to customize key-value pairs.</p> <p>NOTE</p> <ul style="list-style-type: none"> A maximum of 10 key-value pairs can be injected. A metadata key consists of 1 to 255 characters and contains only uppercase letters, lowercase letters, spaces, digits, hyphens (-), underscores (_), colons (:), and decimal points (.). A metadata value consists of a maximum of 255 characters. <p>For details about reserved key-value pairs, see Table 7-11.</p>
os:scheduler_hints	No	Object	<p>Schedules ECSs, for example, by configuring an ECS group.</p> <p>For details, see Table 7-12.</p>
tags	No	Array of strings	<p>Specifies ECS tags.</p> <p>A tag is in the format of "key.value", where the maximum lengths of key and value are 36 and 43 characters, respectively.</p> <p>When adding a tag to an ECS, ensure that the tag complies with the following requirements:</p> <p>NOTE</p> <ul style="list-style-type: none"> When you create ECSs, one ECS supports up to 10 tags.
description	No	String	<p>Specifies the description of the ECS, which is empty by default.</p> <ul style="list-style-type: none"> Can contain a maximum of 85 characters. Cannot contain an angle bracket < or >.

Parameter	Mandatory	Type	Description
auto_terminate_time	No	String	<p>This parameter is not supported now and will be available soon.</p> <p>Specifies the time when resources will be automatically released.</p> <p>The value is in the format of "yyyy-MM-ddTHH:mm:ssZ" in UTC+0 and complies with ISO8601.</p> <p>If the value of second (ss) is not 00, the system automatically sets to the current value of minute (mm).</p> <p>The minimum release time is half an hour later than the current time.</p> <p>The maximum release time is three years later than the current time.</p> <p>For example, set the value to 2020-09-25T12:05:00Z.</p> <p>NOTE This function is supported by pay-per-use ECSs only.</p>

Table 4-10 nics field description

Parameter	Mandatory	Type	Description
subnet_id	Yes	String	<p>Specifies the subnet of the ECS.</p> <p>The value must be the ID of the subnet created in the VPC specified by vpcid and in the format of the UUID.</p> <p>You can obtain the parameter value by calling a VPC API for Querying Subnets.</p>
ip_address	No	String	<p>Specifies the IP address of the NIC used by the ECS. The value is an IPv4 address.</p> <p>Constraints:</p> <ul style="list-style-type: none">• If this parameter is left blank or set to "", an unused IP address in the subnet is automatically assigned as the IP address of the NIC.• If this parameter is specified, its value must be an unused IP address in the network segment of the subnet.

Table 4-11 `root_volume` field description

Parameter	Mandatory	Type	Description
<code>volumetype</code>	Yes	String	<p>Specifies the ECS system disk type, which must be one of available disk types. The value can be SATA, SAS, GPSSD, SSD, or ESSD.</p> <ul style="list-style-type: none">• SSD: the ultra-high I/O type• SAS: the high I/O type• SATA: the common I/O type• GPSSD: the general purpose SSD type• ESSD: the extreme SSD type <p>If the specified disk type is not available in the AZ, the disk will fail to be created.</p> <p>NOTE</p> <ul style="list-style-type: none">• For details about disk types, see Disk Types and Performance.
<code>size</code>	No	Integer	<p>Specifies the system disk size, in GB. The value ranges from 1 to 1024.</p> <p>Constraints:</p> <ul style="list-style-type: none">• The system disk size must be greater than or equal to the minimum system disk size supported by the image (min_disk attribute of the image).• If this parameter is not specified or is set to 0, the default system disk size is the minimum value of the system disk in the image (min_disk attribute of the image). <p>NOTE</p> <p>To obtain the minimum system disk size (min_disk) of an image, click the image on the management console for its details. Alternatively, call the native OpenStack API for querying details about an image. For details, see "Querying Image Details (Native OpenStack)" in <i>Image Management Service API Reference</i>.</p>
<code>extendparam</code>	No	Object	<p>Provides the disk information.</p> <p>For details, see extendparam Field Description for Creating Disks.</p>

Parameter	Mandatory	Type	Description
hw:passthrough	No	Boolean	<p>Specifies the device type of the EVS disks to be created.</p> <ul style="list-style-type: none"> If this parameter is set to false, VBD disks are created. If this parameter is set to true, SCSI disks are created. If this parameter is not specified or set to a non-Boolean character, VBD disks are created by default.

Table 4-12 data_volumes field description

Parameter	Mandatory	Type	Description
volumetype	Yes	String	<p>Specifies the type of the ECS data disk, which must be one of available disk types. The value can be SATA, SAS, GPSSD, SSD, or ESSD.</p> <ul style="list-style-type: none"> SSD: the ultra-high I/O type SAS: the high I/O type SATA: the common I/O type GPSSD: the general purpose SSD type ESSD: the extreme SSD type <p>If the specified disk type is not available in the AZ, the disk will fail to be created.</p> <p>NOTE</p> <ul style="list-style-type: none"> For details about disk types, see Disk Types and Performance.
size	Yes	Integer	<p>Specifies the data disk size, in GB. The value ranges from 10 to 32768.</p> <p>When you use a data disk image to create a data disk, ensure that the value of this parameter is greater than or equal to the size of the source data disk that is used to create the data disk image.</p>
shareable	No	Boolean	<p>Specifies whether the disk is shared. The value can be true (specifies a shared disk) or false (a common EVS disk).</p> <p>NOTE</p> <p>This field has been discarded. Use multiattach.</p>

Parameter	Mandatory	Type	Description
multiattach	No	Boolean	<p>Specifies the shared disk information.</p> <ul style="list-style-type: none">• true: indicates that the created disk is a shared disk.• false: indicates that the created disk is a common EVS disk. <p>NOTE</p> <ul style="list-style-type: none">• If this parameter is set to true, the type of the shared disk is SCSI.• The shareable field is not used anymore. If both shareable and multiattach must be used, ensure that the values of the two fields are the same. If this parameter is not specified, common EVS disks are created by default.
hw:passthrough	No	Boolean	<p>Specifies the device type of the EVS disks to be created.</p> <ul style="list-style-type: none">• If this parameter is set to false, VBD disks are created.• If this parameter is set to true, SCSI disks are created.• If this parameter is not specified or set to a non-Boolean character, VBD disks are created by default.
extendparam	No	Object	<p>Provides the disk information.</p> <p>For details, see Table 7-7.</p>
data_image_id	No	String	<p>Specifies ID of the data image. The value is in UUID format.</p> <p>If data disks are created using a data disk image, this parameter is mandatory and it does not support metadata.</p>
metadata	No	Object	<p>Specifies the EVS disk metadata. Ensure that key and value in the metadata contain at most 255 bytes.</p> <p>This field is used only when an encrypted disk is created.</p> <p>If data disks are created using a data disk image, this field cannot be used.</p> <p>For details, see metadata Field Description for Creating Disks.</p>

Response

Parameter	Type	Description
job_id	String	Specifies the returned task ID after delivering the task. You can query the task progress using this ID. For details about how to query the task execution status based on job_id , see Task Status Management .

For details about abnormal responses, see [Responses \(Task\)](#).

Example Request

The cloud service platform provides various ECS types. The flavor name/ID varies depending on ECS types and specifications. When you use APIs to create ECSs with different specifications, the request bodies are the same. You only need to change the parameter values in the following request example based on the parameters described in [Request](#).

- Example URL request
POST `https://{endpoint}/v1/{project_id}/cloudservers`
- An ECS with flavor ID **s3.xlarge.2** is to be created, where the image ID is **1189efbf-d48b-46ad-a823-94b942e2a000**, disk type is **SSD**, and VPC ID is **0dae26c9-9a70-4392-93f3-87d53115d171**. An example request is as follows:

```
{
  "server": {
    "availability_zone": "az1-dc1",
    "name": "newservers",
    "imageRef": "1189efbf-d48b-46ad-a823-94b942e2a000",
    "root_volume": {
      "volumetype": "SSD"
    },
    "data_volumes": [
      {
        "volumetype": "SSD",
        "size": 100,
        "multiattach": true,
        "hw.passthrough": true
      }
    ],
    "flavorRef": "s3.xlarge.2",
    "vpcid": "0dae26c9-9a70-4392-93f3-87d53115d171",
    "security_groups": [
      {
        "id": "507ca48f-814c-4293-8706-300564d54620"
      }
    ],
    "nics": [
      {
        "subnet_id": "157ee789-03ea-45b1-a698-76c92660dd83"
      }
    ],
    "publicip": {
      "eip": {
        "iptype": "5_bgp",
        "bandwidth": {
          "size": 10,
          "sharetype": "PER"
        }
      }
    }
  }
}
```

```
    }
  },
  "key_name": "sshkey-123",
  "count": 1,
  "server_tags": [
    {
      "key": "key1",
      "value": "value1"
    }
  ],
  "metadata": {
    "op_svc_userid": "8ea65f4099ba412883e2a0da72b96873",
    "agency_name": "test"
  }
}
```

- An example pre-verification request body is as follows:

```
{
  "dry_run": true,
  "server": {
    "availability_zone": "az1-dc1",
    "name": "newsrver",
    "imageRef": "1189efbf-d48b-46ad-a823-94b942e2a000",
    "root_volume": {
      "volumetype": "SSD"
    },
    "data_volumes": [
      {
        "volumetype": "SSD",
        "size": 100,
        "multiattach": true,
        "hw:passthrough": true
      }
    ],
    "flavorRef": "s3.xlarge.2",
    "vpcid": "0dae26c9-9a70-4392-93f3-87d53115d171",
    "security_groups": [
      {
        "id": "507ca48f-814c-4293-8706-300564d54620"
      }
    ],
    "nics": [
      {
        "subnet_id": "157ee789-03ea-45b1-a698-76c92660dd83"
      }
    ],
    "key_name": "sshkey-123",
    "count": 1
  }
}
```

Example Response

```
{
  "job_id": "93c82933d6b7827d3016b8771f2070873"
}
```

Or

```
{
  "error": {
    "code": "request body is illegal.",
    "message": "Ecs.0005"
  }
}
```

Or

```
{
  "error": {
```

```
"message": "privateIp [%s] is not in this subnet [%s]",
"code": "Ecs.0005",
"details": [
  {
    "code": "Ecs.0039"
  }
]
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.1.3 Deleting ECSs

Function

This API is used to delete ECSs based on a specified ECS ID list.

You can delete a single ECS or multiple ECSs in a batch. A maximum of 1000 ECSs can be deleted in a batch.

Only ECSs billed in the pay-per-use mode can be deleted.

URI

POST /v1/{project_id}/cloudservers/delete

[Table 4-13](#) describes the parameters in the URI.

Table 4-13 Parameter description

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

Request

[Table 4-14](#) describes the request parameters.

Table 4-14 Request parameters

Parameter	Mandatory	Type	Description
servers	Yes	Array of objects	Specifies the ECSs to be deleted. For details, see Table 4-15 .

Parameter	Mandatory	Type	Description
delete_publicip	No	Boolean	<p>Specifies whether to delete the EIP bound to the ECS when deleting the ECS. If you do not want to delete the EIP, the system only unbinds the EIP from the ECS and reserves the EIP.</p> <p>The value can be true or false.</p> <ul style="list-style-type: none"> true: When an ECS is deleted, the EIP bound to the ECS is also released regardless of whether delete_on_termination of the EIP is true or false. false: When an ECS is deleted, the EIP is only unbound from the ECS and will not be released regardless of whether delete_on_termination of the EIP is true or false. <p>NOTE If delete_publicip is not specified, the delete_on_termination value of the EIP decides whether the EIP is released when the ECS is deleted.</p> <ul style="list-style-type: none"> If delete_on_termination is true and delete_publicip is null, the EIP is released when the ECS is deleted. If delete_on_termination is false and delete_publicip is null, the EIP is only unbound from the ECS and will not be released when the ECS is deleted.
delete_volume	No	Boolean	<p>Specifies whether to delete the data disks attached to an ECS when deleting the ECS. If you set the parameter value to false, the system only detaches the disks from the ECS and reserves the disks. The default value is false.</p> <ul style="list-style-type: none"> true: indicates to delete the data disks attached to the ECS when deleting the ECS. false: indicates only to detach the data disks attached to the ECS when deleting the ECS.

Table 4-15 servers field description

Parameter	Mandatory	Type	Description
id	Yes	String	Specifies the ID of the ECS to be deleted.

Response

See [Responses \(Task\)](#).

Example Request

```
Example request
POST https://{endpoint}/v1/{project_id}/cloudservers/delete
{
  "servers": [
    {
      "id": "616fb98f-46ca-475e-917e-2563e5a8cd19"
    }
  ],
  "delete_publicip": false,
  "delete_volume": false
}
```

Example Response

```
{
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Or

```
{
  "error": {
    "message": "request body is illegal.",
    "code": "Ecs.0005"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.1.4 Querying Details About an ECS

Function

This API is used to query details about an ECS.

The information can be queried includes the ECS billing mode and the ECS frozen status.

URI

GET /v1/{project_id}/cloudservers/{server_id}

[Table 4-16](#) describes the parameters in the URI.

Table 4-16 Parameter description

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

Request

None

Response

[Table 4-17](#) describes the response parameters.

Table 4-17 Response parameters

Parameter	Type	Description
server	Object	Specifies ECS information. For details, see Table 4-18 .

Table 4-18 server field description

Parameter	Type	Description
status	String	Specifies the ECS status. Options: ACTIVE, BUILD, ERROR, HARD_REBOOT, MIGRATING, REBOOT, REBUILD, RESIZE, REVERT_RESIZE, SHUTOFF, VERIFY_RESIZE, DELETED, SHELVED, SHELVED_OFFLOADED, and UNKNOWN For details, see ECS Statuses .
updated	String	Specifies the last time when the ECS was updated, such as started, stopped, or restarted. The time is in the format of "2019-05-22T03:30:52Z".
hostId	String	Specifies the ID of the host where the ECS is deployed.

Parameter	Type	Description
OS-EXT-SRV-ATTR:host	String	Specifies the name of the host on which the ECS is deployed.
addresses	Object	Specifies the network attribute of the ECS. The structure is Map<String, Object>. <ul style="list-style-type: none">• The key indicates the network name, for example, demo_net.• The value indicates the network attribute specified in Table 7-15.
key_name	String	Specifies the key pair that is used to authenticate an ECS.
image	Object	Specifies the ECS image. For details, see Table 7-22 .
OS-EXT-STS:task_state	String	Specifies the ECS task status. This is an extended attribute. For details, see ECS Statuses .
OS-EXT-STS:vm_state	String	Specifies the ECS task status. This is an extended attribute. For details, see ECS Statuses .
OS-EXT-SRV-ATTR:instance_name	String	Specifies the ECS alias. This is an extended attribute.
OS-EXT-SRV-ATTR:hypervisor_hostname	String	Specifies the name of the host on which the ECS is deployed. This is an extended attribute.
flavor	Object	Specifies the ECS flavor. For details, see Table 7-16 .
id	String	Specifies the ECS ID in UUID format.
security_groups	Array of objects	Specifies the security groups of the ECS. For details, see Table 7-17 .
OS-EXT-AZ:availability_zone	String	Specifies the AZ of an ECS. This is an extended attribute.
user_id	String	Specifies the ID of the user for creating the ECS. The value is in UUID format.
name	String	Specifies the ECS name.
created	String	Specifies the time when the ECS was created. The time is in the format of "2019-05-22T03:19:19Z".

Parameter	Type	Description
tenant_id	String	Specifies the ID of the tenant to which the ECS belongs, which is the project ID in UUID format.
OS-DCF:diskConfig	String	Specifies the disk configuration type. This is an extended attribute. Options: <ul style="list-style-type: none">● MANUAL: The image space is not expanded.● AUTO: The image space of the system disk will be expanded to be as same as the flavor.
accessIPv4	String	Reserved
accessIPv6	String	Reserved
fault	Object	Specifies the cause of the ECS fault. For details, see Table 7-18 .
progress	Integer	Specifies the ECS creation progress. The value ranges from 0 to 100 .
OS-EXT-STS:power_state	Integer	Specifies the power status of the ECS. This is an extended attribute. Options: <ul style="list-style-type: none">● 0: NOSTATE● 1: RUNNING● 4: SHUTDOWN
config_drive	String	Specifies the configuration driver.
metadata	Map<String, String>	Specifies the ECS metadata. For details, see Table 7-20 . NOTE Metadata includes system default fields and the fields set by users.
OS-SRV-USG:launched_at	String	Specifies the time when the ECS was started. The time is in the format of "2019-05-22T03:23:59.000000".
OS-SRV-USG:terminated_at	String	Specifies the time when the ECS was deleted. The time is in the format of "2019-05-22T03:23:59.000000".
os-extended-volumes:volumes_attached	Array of objects	Specifies the disks attached to an ECS. For details, see Table 7-19 .
description	String	Describes the ECS.

Parameter	Type	Description
host_status	String	Specifies the status of the host accommodating the ECS. <ul style="list-style-type: none">• UP: The nova-compute status is normal.• UNKNOWN: The nova-compute status is unknown.• DOWN: the nova-compute status is abnormal.• MAINTENANCE: The nova-compute is in maintenance state.• Null: The ECS does not have host information.
OS-EXT-SRV-ATTR:hostname	String	Specifies the host name of the ECS.
OS-EXT-SRV-ATTR:reservation_id	String	Specifies the ID reserved for the ECSs to be created in a batch. You can use this ID to obtain all the ECSs created in the batch.
OS-EXT-SRV-ATTR:launch_index	Integer	Specifies the sequence in which ECSs start if the ECSs are created in a batch. The value ranges from 0 to the number of ECSs created in the batch.
OS-EXT-SRV-ATTR:kernel_id	String	Specifies the UUID of the kernel image if an AMI image is used. In other scenarios, leave this parameter blank.
OS-EXT-SRV-ATTR:ramdisk_id	String	Specifies the UUID of the Ramdisk image if an AMI image is used. In other scenarios, leave this parameter blank.
OS-EXT-SRV-ATTR:root_device_name	String	Specifies the device name of the ECS system disk. For example, if the device type of the system disk is VDB, the value of this parameter is /dev/vda . If the device type of the system disk is SCSI, the value of this parameter is /dev/sda .
OS-EXT-SRV-ATTR:user_data	String	Specifies the user data (information after encoding) configured during ECS creation.
locked	Boolean	Specifies whether an ECS is locked. <ul style="list-style-type: none">• true: The ECS is locked.• false: The ECS is not locked.
tags	Array of strings	Specifies ECS tags.
os:scheduler_hints	Object	Specifies the ECS scheduling information. For details, see Table 7-13 .

Parameter	Type	Description
sys_tags	Array of objects	Specifies ECS system tags. For details, see Table 7-21 .
auto_terminate_time	String	Specifies the time when an ECS is automatically released. NOTE The parameter value is null for yearly/monthly ECSs.
cpu_options	Object	Specifies the CPU options. For details, see Table 4-19 .
hypervisor	Object	Specifies the virtualization information. This is an extended attribute. For details, see Table 4-20 .

Table 4-19 cpu_options field description

Parameter	Type	Description
hw:cpu_threads	Integer	Specifies the number of CPU hyperthreads, which determines whether to enable CPU hyper-threading. Values: 1 and 2 <ul style="list-style-type: none"> • 1: Disable hyper-threading. • 2: Enable hyper-threading. This parameter can be set to 1 (disabling hyper-threading) only when all of the following conditions are met: <ul style="list-style-type: none"> • The ECS is being created or resized. • The extra_specs parameter of the target flavor contains: <ul style="list-style-type: none"> – hw:cpu_policy, whose value is set to dedicated – hw:cpu_threads, whose value is set to 2

Table 4-20 hypervisor field description

Parameter	Type	Description
hypervisor_type	String	Specifies a virtualization type.
csd_hypervisor	String	This is a reserved parameter.

Example Request

```
GET https://{endpoint}/v1/{project_id}/cloudservers/{server_id}
```

Example Response

```
{
  "server": {
    "id": "4f4b3dfa-eb70-47cf-a60a-998a53bd598a",
    "name": "ecs-2ecf",
    "addresses": {
      "0431c5e5-bc94-4a44-8263-15da2a642435": [{
        "version": "4",
        "addr": "192.168.1.99",
        "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:df:18:6d",
        "OS-EXT-IPS:port_id": "23037c18-027a-44e5-b6b9-f8d8f113fe02",
        "OS-EXT-IPS:type": "fixed"
      }]
    },
    "flavor": {
      "disk": "0",
      "vcpus": "1",
      "ram": "1024",
      "id": "s3.small.1",
      "name": "s3.small.1"
    },
    "accessIPv4": "",
    "accessIPv6": "",
    "status": "ACTIVE",
    "progress": 0,
    "hostId": "c7145889b2e3202cd295ceddb1742ff8941b827b586861fd0acedf64",
    "updated": "2018-09-13T07:06:51Z",
    "created": "2018-09-13T07:03:44Z",
    "image": {
      "id": "1ce5800a-e487-4c1b-b264-3353a39e2b4b"
    },
    "metadata": {
      "metering.order_id": "CS1809131459IGC24",
      "metering.image_id": "c71b64e7-4767-4406-afde-2c7c7ac2242c",
      "metering.imagetype": "gold",
      "metering.resourcespeccode": "s3.small.1.linux",
      "image_name": "HEC_Public_Cloudinit_Oracle_Linux_7.4_64bit_40G",
      "metering.resourcetype": "1",
      "metering.product_id": "00301-117024-0--0",
      "cascaded.instance_extrainfo": "pcibridge:2",
      "os_bit": "64",
      "vpc_id": "0431c5e5-bc94-4a44-8263-15da2a642435",
      "os_type": "Linux",
      "charging_mode": "1"
    },
    "tags": [],
    "description": "",
    "locked": false,
    "config_drive": "",
    "tenant_id": "ff2eb406effc455aba53174463eb9322",
    "user_id": "0bc5e11f91dd48849bb03b7c8a263b2c",
    "key_name": "KeyPair-d750",
    "os-extended-volumes:volumes_attached": [{
      "device": "/dev/vda",
      "bootIndex": "0",
      "id": "80c15cff-2473-4982-a816-d760cad6c42c",
      "delete_on_termination": "false"
    }],
    "OS-EXT-STSTS:task_state": null,
    "OS-EXT-STSTS:power_state": 1,
    "OS-EXT-STSTS:vm_state": "active",
    "OS-EXT-SRV-ATTR:host": "az21.dc1",
    "OS-EXT-SRV-ATTR:instance_name": "instance-0015147f",
    "OS-EXT-SRV-ATTR:hypervisor_hostname": "nova003@74",
  }
}
```

```
    "OS-EXT-SRV-ATTR:user_data": null,
    "OS-DCF:diskConfig": "MANUAL",
    "OS-EXT-AZ:availability_zone": "az1-dc1", //AZ name
    "os:scheduler_hints": {
    },
    "OS-EXT-SRV-ATTR:root_device_name": "/dev/vda",
    "OS-EXT-SRV-ATTR:ramdisk_id": "",

    "OS-SRV-USG:launched_at": "2018-09-13T07:04:09.197749",
    "OS-EXT-SRV-ATTR:kernel_id": "",
    "OS-EXT-SRV-ATTR:launch_index": 0,
    "host_status": "UP",
    "OS-EXT-SRV-ATTR:reservation_id": "r-nrd8b5c4",
    "OS-EXT-SRV-ATTR:hostname": "ecs-2ecf",
    "sys_tags": [{
      "key": "_sys_enterprise_project_id",
      "value": "0"
    }],
    "security_groups": [{
      "name": "sg-95ec",
      "id": "6505b5d1-7837-41eb-8a1c-869d4355baa3"
    }
  ]
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.1.5 Querying Details About ECSs

Function

This API is used to query ECSs according to search criteria and details about the ECSs.

The information can be queried includes ECS billing modes and ECS frozen statuses.

URI

```
GET /v1/{project_id}/cloudservers/detail?
flavor={flavor}&name={name}&status={status}&limit={limit}&offset={offset}&not-
tags={not-tags}&reservation_id={reservation_id}&&tags={tags}&ip={ip}
```

[Table 4-21](#) describes the parameters in the URI.

Table 4-21 Path parameters

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

Table 4-22 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	<p>Specifies a page number.</p> <p>The value must be greater than or equal to 0 and the default value is 1.</p> <p>If the value is 0, the first page is displayed, which is the same as the value 1.</p> <p>You are advised to set this parameter to a value greater than or equal to 1.</p>
flavor	No	String	<p>Specifies the flavor ID. For details about the published flavors, see ECS Types in <i>Elastic Cloud Server User Guide</i>.</p>
name	No	String	<p>Specifies the ECS name, which is fuzzy matched.</p> <p>Periods (.) are supported to match any single characters except \n and \r. A period is equal to [^\n\r].</p>
status	No	String	<p>Specifies the ECS status.</p> <p>Options: ACTIVE, BUILD, ERROR, HARD_REBOOT, MIGRATING, REBOOT, REBUILD, RESIZE, REVERT_RESIZE, SHUTOFF, VERIFY_RESIZE, DELETED, SHELVED, SHELVED_OFFLOADED, and UNKNOWN</p> <p>For details, see ECS Statuses.</p> <p>NOTE When an ECS is in an intermediate state, the statuses that can be obtained are as follows:</p> <ul style="list-style-type: none"> • ACTIVE: ACTIVE, REBOOT, HARD_REBOOT, REBUILD, or MIGRATING • SHUTOFF: SHUTOFF, RESIZE, or REBUILD • ERROR: ERROR or REBUILD • VERIFY_RESIZE: VERIFY_RESIZE or REVERT_RESIZE
limit	No	Integer	<p>Specifies the maximum number of ECSs on one page.</p> <p>Each page contains 25 ECSs by default, and a maximum of 1000 ECSs are returned. For large volumes of data, you are advised to set the value to 100.</p>
tags	No	String	<p>Obtains the ECSs with specified tags.</p>

Parameter	Mandatory	Type	Description
not-tags	No	String	Queries ECSs whose tag field does not contain the specified value. For example, if the queried ECS list should not contain BMSs, set this parameter as follows: not-tags=__type_baremetal
reservation_id	No	String	Specifies the ID returned when ECSs are created in a batch by using OpenStack Nova API. This parameter is used to query ECSs created in a batch.
ip	No	String	Specifies the filtering result for IPv4 addresses, which are fuzzy matched. These IP addresses are private IP addresses of the ECS.

Request

None

Response

[Table 4-23](#) describes the response parameters.

Table 4-23 Response parameters

Parameter	Type	Description
servers	Array of objects	Specifies details about ECSs. For details, see Table 4-18 .
count	Integer	Specifies the total number of ECSs.

Example Request

```
GET https://{endpoint}/v1/{project_id}/cloudservers/detail?offset=1&limit=10
```

Example Response

```
{
  "count": 4,
  "servers": [{
    "fault": null,
    "id": "b37fd80e-ac67-4d02-b9f1-9891c9c0fabf",
    "name": "ecs-yuankai2",
    "addresses": {
      "164489f6-cbf7-45b4-b6d0-d407c48cf7fc": [{
        "version": "4",
        "addr": "192.168.0.206",
        "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:95:88:3f",
```

```
    "OS-EXT-IPS:port_id": "7b5d615c-186d-4646-9cb8-444adffe9b92",
    "OS-EXT-IPS:type": "fixed"
  },
  {
    "version": "4",
    "addr": "192.168.0.8",
    "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:1d:88:43",
    "OS-EXT-IPS:port_id": "dda2027b-2f03-497b-8d42-620da2baacc3",
    "OS-EXT-IPS:type": "fixed"
  }
],
"flavor": {
  "disk": "0",
  "vcpus": "1",
  "ram": "1024",
  "id": "c1.medium",
  "name": "c1.medium"
},
"accessIPv4": "",
"accessIPv6": "",
"status": "SHUTOFF",
"image": {
  "id": "1ce5800a-e487-4c1b-b264-3353a39e2b4b"
},
"hostId": "f92345b97fd291f67a29ed735a82a8983f370175d2ba3d18d66893f4",
"updated": "2018-08-14T07:26:49Z",
"created": "2018-08-13T13:46:09Z",
"metadata": {
  "metering.image_id": "af60e0d5-6952-4f3d-b0ed-31bb19d4a692",
  "metering.resourcespeccode": "c1.medium.linux",
  "image_name": "HEC_Public_Cloudinit_CentOS_7.4_64bit",
  "metering.product_id": "00301-253164-0--0",
  "os_bit": "64",
  "lockSourceId": "",
  "lockScene": "",
  "metering.order_id": "CS1808132145NRVRE",
  "lockCheckEndpoint": "",
  "metering.imagetype": "gold",
  "lockSource": "",
  "metering.resourcetype": "1",
  "vpc_id": "164489f6-cbf7-45b4-b6d0-d407c48cf7fc",
  "os_type": "Linux",
  "charging_mode": "1"
},
"tags": [],
"description": "ecs-4cff",
"locked": false,
"config_drive": "",
"tenant_id": "edcb94a885a84ed3a3fdf8ea4d2741da",
"user_id": "bb7f23e27e7e46f3aaceb5f53a158bdc",
"os-extended-volumes:volumes_attached": [{
  "device": "/dev/sda",
  "bootIndex": "0",
  "id": "2edc879f-022e-4bd6-b079-95a27564d449",
  "delete_on_termination": "false"
}],
  "OS-EXT-STS:task_state": null,
  "OS-EXT-STS:power_state": 4,
  "OS-EXT-STS:vm_state": "stopped",
  "OS-EXT-SRV-ATTR:host": "az1.dc1",
  "OS-EXT-SRV-ATTR:instance_name": "instance-00137941",
  "OS-EXT-SRV-ATTR:hypervisor_hostname": "nova001@248",
  "OS-DCF:diskConfig": "MANUAL",
  "OS-EXT-AZ:availability_zone": "az1-dc1", //AZ name
  "os:scheduler_hints": {
  },
  "OS-EXT-SRV-ATTR:root_device_name": "/dev/sda",
  "OS-EXT-SRV-ATTR:ramdisk_id": "",
```



```
"OS-EXT-SRV-ATTR:user_data":
"lyEvYmluL2Jhc2gKZWNObyAncm9vdDokNiRKQ2FzUWQkbm5wVmhhUjZlNVmwc3pXbnJGlnZVZ1FCWk4xTE
o5Vy8wd09WTmFZaWpBRXdtRnhuQmZaTlVZXhBWktVWFVTeVhEeERuSUMzV2JjZjEjQUVBZkZvLy8nIHwgY2
hwYXNzd2QgLUU7",
"OS-SRV-USG:launched_at": "2018-08-13T13:46:46.000000",
"OS-EXT-SRV-ATTR:kernel_id": "",
"OS-EXT-SRV-ATTR:launch_index": 0,
"host_status": "UP",
"OS-EXT-SRV-ATTR:reservation_id": "r-a8mg9vwr",
"OS-EXT-SRV-ATTR:hostname": "ecs-4cff",
"sys_tags": [{
  "key": "_sys_enterprise_project_id",
  "value": "441d5677-b76a-4dd4-a97a-ef7fd633c095"
}],
"security_groups": [{
  "id": "71846bf6-1cda-4515-8590-3707be295e76",
  "name": "Sys-FullAccess"
},
{
  "id": "b1786350-da65-11e7-b312-0255ac101b03",
  "name": "default"
}]
},
{
  "fault": null,
  "id": "8380dcc9-0eac-4407-9f9e-df8c9eddeacd",
  "name": "ecs-f680",
  "addresses": {
    "164489f6-cbf7-45b4-b6d0-d407c48cf7fc": [{
      "version": "4",
      "addr": "192.168.0.218",
      "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:bb:b3:fe",
      "OS-EXT-IPS:port_id": "240c696f-68d8-4f3f-941d-fecf2b375132",
      "OS-EXT-IPS:type": "fixed"
    }]
  },
  "flavor": {
    "disk": "0",
    "vcpus": "1",
    "ram": "1024",
    "id": "c1.medium",
    "name": "c1.medium"
  },
  "accessIPv4": "",
  "accessIPv6": "",
  "status": "SHUTOFF",
  "image": {
    "id": "1ce5800a-e487-4c1b-b264-3353a39e2b4b"
  },
  "hostId": "f92345b97fd291f67a29ed735a82a8983f370175d2ba3d18d66893f4",
  "updated": "2018-08-14T03:01:00Z",
  "created": "2018-08-13T13:38:29Z",
  "metadata": {
    "metering.image_id": "af60e0d5-6952-4f3d-b0ed-31bb19d4a692",
    "metering.imagetype": "gold",
    "metering.resourcespeccode": "c1.medium.linux",
    "image_name": "HEC_Public_Cloudinit_CentOS_7.4_64bit",
    "metering.resourcetype": "1",
    "os_bit": "64",
    "vpc_id": "164489f6-cbf7-45b4-b6d0-d407c48cf7fc",
    "os_type": "Linux",
    "charging_mode": "0"
  },
  "tags": [],
  "description": "ecs-f680",
  "locked": false,
  "config_drive": "",
  "tenant_id": "edcb94a885a84ed3a3fdf8ea4d2741da",
```

```
"user_id": "61ee747d36bf421fa25c51a3b9565046",
"os-extended-volumes:volumes_attached": [{
  "device": "/dev/sda",
  "bootIndex": "0",
  "id": "3721b948-9c2f-4980-90ad-b2a16811f58c",
  "delete_on_termination": "false"
}],
  "OS-EXT-STS:task_state": null,
  "OS-EXT-STS:power_state": 4,
  "OS-EXT-STS:vm_state": "stopped",
  "OS-EXT-SRV-ATTR:host": "az1.dc1",
  "OS-EXT-SRV-ATTR:instance_name": "instance-00137937",
  "OS-EXT-SRV-ATTR:hypervisor_hostname": "nova001@248",
  "OS-DCF:diskConfig": "MANUAL",
  "OS-EXT-AZ:availability_zone": "az1-dc1", //AZ name
  "os:scheduler_hints": {
  },
  "OS-EXT-SRV-ATTR:root_device_name": "/dev/sda",
  "OS-EXT-SRV-ATTR:ramdisk_id": "",
  "OS-EXT-SRV-ATTR:user_data":
  "jyEvYmluL2Jhc2gKZWNObyAncm9vdDokNir5aG9aeFikVE00OWlwSGQ2OEFWcjltMTFXNEZrZmFYTENVbEky
  d0xVTmd5VjhOb0dCem5WOWFsU1EN0ZNSHc0VmtwdU9GOERyLncudGUzVmRHLnVmY005eIVZSDEnIHwgY
  2hwYXNzd2QgLUWU7",
  "OS-SRV-USG:launched_at": "2018-08-13T13:38:53.000000",
  "OS-EXT-SRV-ATTR:kernel_id": "",
  "OS-EXT-SRV-ATTR:launch_index": 0,
  "host_status": "UP",
  "OS-EXT-SRV-ATTR:reservation_id": "r-7e2g78rq",
  "OS-EXT-SRV-ATTR:hostname": "ecs-f680",
  "sys_tags": [{
    "key": "_sys_enterprise_project_id",
    "value": "441d5677-b76a-4dd4-a97a-ef7fd633c095"
  }],
  "security_groups": [{
    "name": "test"
  }
  ],
  {
    "fault": null,
    "id": "fb70fed9-5774-44a7-ad4a-af3ea2c2da61",
    "name": "ecs-3993",
    "addresses": {
      "00159d7d-b3c3-4108-8bc4-6658814e6422": [{
        "version": "4",
        "addr": "192.168.20.83",
        "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:a9:8d:88",
        "OS-EXT-IPS:port_id": "579ab762-bf89-435e-80ad-a8bdd25119c5",
        "OS-EXT-IPS:type": "fixed"
      }
    ]
  },
  },
  "flavor": {
    "disk": "0",
    "vcpus": "1",
    "ram": "1024",
    "id": "c1.medium",
    "name": "c1.medium"
  },
  "accessIPv4": "",
  "accessIPv6": "",
  "status": "SHUTOFF",
  "image": {
    "id": "1ce5800a-e487-4c1b-b264-3353a39e2b4b"
  },
  "hostId": "f92345b97fd291f67a29ed735a82a8983f370175d2ba3d18d66893f4",
  "updated": "2018-08-14T03:01:03Z",
  "created": "2018-08-13T13:38:02Z",
  "metadata": {
    "metering.image_id": "af60e0d5-6952-4f3d-b0ed-31bb19d4a692",
```

```
"metering.imagetype": "gold",
"metering.resourcespeccode": "c1.medium.linux",
"image_name": "HEC_Public_Cloudinit_CentOS_7.4_64bit",
"metering.resourcetype": "1",
"os_bit": "64",
"vpc_id": "00159d7d-b3c3-4108-8bc4-6658814e6422",
"os_type": "Linux",
"charging_mode": "0"
},
"tags": [],
"description": "ecs-3993",
"locked": false,
"config_drive": "",
"tenant_id": "edcb94a885a84ed3a3fdf8ea4d2741da",
"user_id": "eb4698fe015848e9a3e86cc9956e54fa",
"key_name": "KeyPair-3b38",
"os-extended-volumes:volumes_attached": [{
  "device": "/dev/sda",
  "bootIndex": "0",
  "id": "85bfb4c4f-7733-419a-b171-c00585abf926",
  "delete_on_termination": "false"
}],
  "OS-EXT-STS:task_state": null,
"OS-EXT-STS:power_state": 4,
"OS-EXT-STS:vm_state": "stopped",
"OS-EXT-SRV-ATTR:host": "az1.dc1",
"OS-EXT-SRV-ATTR:instance_name": "instance-00137936",
"OS-EXT-SRV-ATTR:hypervisor_hostname": "nova001@248",
"OS-DCF:diskConfig": "MANUAL",
"OS-EXT-AZ:availability_zone": "az1-dc1", //AZ name
"os:scheduler_hints": {
},
"OS-EXT-SRV-ATTR:root_device_name": "/dev/sda",
"OS-EXT-SRV-ATTR:ramdisk_id": "",

"OS-SRV-USG:launched_at": "2018-08-13T13:38:24.000000",
"OS-EXT-SRV-ATTR:kernel_id": "",
"OS-EXT-SRV-ATTR:launch_index": 0,
"host_status": "UP",
"OS-EXT-SRV-ATTR:reservation_id": "r-uzsewxii",
"OS-EXT-SRV-ATTR:hostname": "ecs-3993",
"sys_tags": [{
  "key": "_sys_enterprise_project_id",
  "value": "441d5677-b76a-4dd4-a97a-ef7fd633c095"
}],
"security_groups": [{
  "name": "test"
}],
{
  "name": "default"
}
}],
{
  "fault": null,
"id": "e3d3f219-b445-4a7a-8f00-e31412481f8c",
"name": "ecs-1f30",
"addresses": {
  "00159d7d-b3c3-4108-8bc4-6658814e6422": [{
    "version": "4",
    "addr": "192.168.20.197",
    "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:41:5a:32",
    "OS-EXT-IPS:port_id": "cfa2e055-54fb-427a-bde4-128bda47ae5c",
    "OS-EXT-IPS:type": "fixed"
  ]
}
},
"flavor": {
  "disk": "0",
  "vcpus": "1",
  "ram": "1024",
```

```
    "id": "c1.medium",
    "name": "c1.medium"
  },
  "accessIPv4": "",
  "accessIPv6": "",
  "status": "ACTIVE",
  "image": {
    "id": "1ce5800a-e487-4c1b-b264-3353a39e2b4b"
  },
  "progress": 0,
  "hostId": "f92345b97fd291f67a29ed735a82a8983f370175d2ba3d18d66893f4",
  "updated": "2018-08-15T08:16:01Z",
  "created": "2018-08-13T11:57:29Z",
  "metadata": {
    "sdfasf": "sdfffd",
    "metering.order_id": "CS180813193577ORO",
    "metering.imagetype": "gold",
    "metering.resourcespeccode": "c1.medium.win",
    "metering.image_id": "65cb40e6-f67e-4bef-a1e7-808166a5999d",
    "image_name": "HEC_Public_Windows2008R2_Ent_64bit40G_English",
    "aaaaa": "0",
    "metering.resourcetype": "1",
    "aaaa": "0",
    "metering.product_id": "00301-146042-0--0",
    "os_bit": "64",
    "vpc_id": "00159d7d-b3c3-4108-8bc4-6658814e6422",
    "os_type": "Windows",
    "charging_mode": "1"
  },
  "tags": [],
  "description": "ecs-1f30",
  "locked": false,
  "config_drive": "",
  "tenant_id": "edcb94a885a84ed3a3fdf8ea4d2741da",
  "user_id": "bb7f23e27e7e46f3aaceb5f53a158bdc",
  "key_name": "Autotest_Init_TC_OriginalAPI_Create_Keypairs_02_keypair",
  "os-extended-volumes:volumes_attached": [
    {
      "device": "/dev/sda",
      "bootIndex": "0",
      "id": "5043f66b-a0d8-4eb2-8c48-49976bcdc253",
      "delete_on_termination": "false"
    }
  ],
  "OS-EXT-STS:task_state": null,
  "OS-EXT-STS:power_state": 1,
  "OS-EXT-STS:vm_state": "active",
  "OS-EXT-SRV-ATTR:host": "az1.dc1",
  "OS-EXT-SRV-ATTR:instance_name": "instance-0013772d",
  "OS-EXT-SRV-ATTR:hypervisor_hostname": "nova001@248",
  "OS-DCF:diskConfig": "MANUAL",
  "OS-EXT-AZ:availability_zone": "az1-dc1", //AZ name
  "os:scheduler_hints": {
  },
  "OS-EXT-SRV-ATTR:root_device_name": "/dev/sda",
  "OS-EXT-SRV-ATTR:ramdisk_id": "",

  "OS-SRV-USG:launched_at": "2018-08-13T11:57:53.576640",
  "OS-EXT-SRV-ATTR:kernel_id": "",
  "OS-EXT-SRV-ATTR:launch_index": 0,
  "host_status": "UP",
  "OS-EXT-SRV-ATTR:reservation_id": "r-xmjj4pnm",
  "OS-EXT-SRV-ATTR:hostname": "ecs-1f30",
  "sys_tags": [
    {
      "key": "_sys_enterprise_project_id",
      "value": "441d5677-b76a-4dd4-a97a-ef7fd633c095"
    }
  ],
  "security_groups": [
    {
      "name": "default"
    }
  ]
}
```

```
    }}  
  }
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#). /v2/{project_id}/os-floating-ips/{

4.1.6 Modifying an ECS

Function

This API is used to modify ECS information. Only the name, description, and hostname of an ECS can be modified currently.

Constraints

After the hostname of an ECS is changed, you need to restart the ECS for the configuration to take effect.

URI

PUT /v1/{project_id}/cloudservers/{server_id}

[Table 4-24](#) describes the parameters in the URI.

Table 4-24 Parameter description

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

Request

[Table 4-25](#) describes the request parameters.

Table 4-25 Request parameters

Parameter	Mandatory	Type	Description
server	Yes	Object	Specifies the ECS data structure. For details, see Table 4-26 .

Table 4-26 server field description

Parameter	Mandatory	Type	Description
name	No	String	Specifies the name of the modified ECS. The parameter value consists of 1 to 64 characters, including letters, digits, underscores (_), and hyphens (-).
description	No	String	Describes the ECS. The value consists of 0-85 characters and cannot contain brackets (<>).
hostname	No	String	Specifies the ECS hostname. The name consists of 1-64 characters. It can be segmented using periods (.). Only letters, digits, and hyphens (-) are allowed in each segment. A name cannot contain consecutive periods (.) or hyphens (-), and cannot start or end with a period (.) or hyphen (-). Additionally, the combinations of (-.) and (-.) are not allowed.

Response

[Table 4-27](#) describes the response parameters.

Table 4-27 Response parameters

Parameter	Type	Description
server	Object	Specifies the ECS. For details, see Table 4-28 .

Table 4-28 server field description

Parameter	Type	Description
tenant_id	String	Specifies the tenant or project ID.
image	String	Specifies the image ID.
accessIPv4	String	Reserved
addresses	Object	Specifies the attributed network information of the ECS. The structure is Map<String, Object>. For details, see Table 4-29 .

Parameter	Type	Description
metadata	Object	Specifies the ECS metadata.
accessIPv6	String	Reserved
created	String	Specifies the time when the ECS was created. The time is in the format of "2019-05-22T03:19:19Z".
hostId	String	Specifies the host ID of the ECS.
flavor	Object	Specifies the ECS flavor. For details, see Table 4-30 .
OS-DCF:diskConfig	String	Specifies the disk configuration mode. This is an extended attribute. This field is valid for the ECS started using an image.
user_id	String	Specifies the ID of the user to which an ECS belongs.
name	String	Specifies the name of the modified ECS.
progress	Integer	Reserved
links	Array of Object	Specifies ECS shortcut links for ECS. For details, see Table 4-31 .
id	String	Specifies the unique ID of an ECS.
updated	String	Specifies the time when the ECS was updated last time. The time is in the format of "2019-05-22T03:19:19Z".
locked	Boolean	Specifies the ECS lock status, which is True when the ECS is locked and False when the ECS is unlocked. This parameter is supported in microversion 2.9 and later.
description	String	Describes the ECS. This parameter is supported in microversion 2.19 and later.

Parameter	Type	Description
tags	Array of strings	<p>Specifies ECS tags.</p> <p>This parameter is supported in microversion 2.26 and later. If the microversion is not used for query, the response does not contain the tags field.</p> <p>Tag functions have been upgraded on the cloud service platform. After the upgrade, the tag values returned by the system comply with the following rules:</p> <ul style="list-style-type: none">• The key and value of a tag are connected using an equal sign (=), for example, key=value.• If the value is empty, only the key is returned.
status	String	<p>Specifies the ECS status.</p> <p>Options:</p> <p>ACTIVE, BUILD, ERROR, HARD_REBOOT, MIGRATING, REBOOT, RESIZE, REVERT_RESIZE, SHELVED, SHELVED_OFFLOADED, SHUTOFF, UNKNOWN, and VERIFY_RESIZE</p> <p>For details, see ECS Statuses.</p>
OS-EXT-SRV-ATTR:hostname	String	<p>Specifies the ECS hostname.</p>

Table 4-29 Data structure of the network which an ECS accesses

Parameter	Type	Description
addr	String	<p>Specifies the IP address.</p>
version	Integer	<p>Specifies the type of an IP address. The value of this parameter can be 4 or 6.</p> <ul style="list-style-type: none">• 4: The type of the IP address is IPv4.• 6: The type of the IP address is IPv6.

Table 4-30 flavor field description

Parameter	Type	Description
id	String	<p>Specifies the ECS ID.</p>
links	Array of objects	<p>Specifies shortcut links for ECS types. For details, see Table 4-31.</p>

Table 4-31 links field description

Parameter	Type	Description
rel	String	Specifies the shortcut link marker name.
href	String	Provides the shortcut link.

Example Request

```
PUT https://{endpoint}/v1/{project_id}/cloudservers/{server_id}
{
  "server": {
    "name": "new-server-test"
  }
}
```

Example Response

```
{
  "server": {
    "tenant_id": "66c860cb130b465fbafcddee43fb09c64",
    "image": "",
    "accessIPv4": "",
    "addresses": {
      "01d7aef8-442b-408e-b82f-13afff51e4e4": [
        {
          "addr": "192.168.26.22",
          "version": 4
        }
      ]
    },
    "metadata": {
      "virtual_env_type": "FusionCompute"
    },
    "description": "",
    "accessIPv6": "",
    "created": "2019-04-25T11:52:53Z",
    "hostId": "57d278e7c53d07cd34fad3ba4fdc9f3d779017d0879726d83b45a22a",
    "OS-EXT-SRV-ATTR:hostname": "new-test-hostname",
    "flavor": {
      "links": [
        {
          "rel": "bookmark",
          "href": "https://None/66c860cb130b465fbafcddee43fb09c64/flavors/s2.large.2"
        }
      ],
      "id": "s2.large.2"
    },
    "OS-DCF:diskConfig": "MANUAL",
    "user_id": "f88581d53be64716a985c66ca28c75f6",
    "name": "new-test-hostname",
    "progress": 0,
    "links": [
      {
        "rel": "self",
        "href": "https://None/v2/66c860cb130b465fbafcddee43fb09c64/servers/24930df0-db4c-4a8b-8914-d0bd558564b0"
      },
      {
        "rel": "bookmark",
        "href": "https://None/66c860cb130b465fbafcddee43fb09c64/servers/24930df0-db4c-4a8b-8914-d0bd558564b0"
      }
    ],
  }
}
```

```
"id": "24930df0-db4c-4a8b-8914-d0bd558564b0",  
"updated": "2019-04-28T08:15:36Z",  
"status": "ACTIVE"  
}  
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.2 Status Management

4.2.1 Reinstalling an ECS OS (Using an Image with Cloud-Init Installed)

Function

This API is used to reinstall an ECS OS. During the system disk reinstallation using the original image, the data disks of the ECS remain unchanged.

After this API is called, the system uninstalls the system disk, uses the original image to create a system disk, and attaches it to the ECS. In this way, the OS is reinstalled.

Constraints

- You can only use an image with Cloud-Init or Cloudbase-Init installed. If the image has no Cloudbase-Init or Cloudbase-init installed, use the API described in [Reinstalling an ECS OS \(Using an Image Without Cloud-Init Installed\)](#).
- You are not allowed to reinstall the OS of an ECS that does not have the system disk.
- You are not allowed to perform other operations when reinstalling the OS. Otherwise, reinstalling the OS will fail.

URI

POST /v2/{project_id}/cloudservers/{server_id}/reinstallos

[Table 4-32](#) describes the parameters in the URI.

Table 4-32 Parameter description

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

Request

[Table 4-33](#) describes the request parameters.

Table 4-33 Request parameters

Parameter	Mandatory	Type	Description
os-reinstall	Yes	Object	Reinstalls an ECS OS. For details, see Table 4-34 .

Table 4-34 os-reinstall field description

Parameter	Mandatory	Type	Description
adminpass	No	String	<p>Specifies the initial password of the ECS administrator.</p> <p>The Linux administrator username is root.</p> <p>Password complexity requirements:</p> <ul style="list-style-type: none">• 8 to 26 characters• The password must contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters (!@\$%^_+=+[]{};,:./?~#*). <p>NOTE</p> <ul style="list-style-type: none">• Linux ECSs can use user_data to inject passwords. In such a case, adminpass is unavailable.• Either adminpass or keyname is set.• If both adminpass and keyname are empty, user_data in metadata must be set.

Parameter	Mandatory	Type	Description
keyname	No	String	Specifies the key pair name. Keys can be created using the key creating API (Creating and Importing an SSH Key Pair) or obtained using the SSH key query API (Querying SSH Key Pairs).
userid	No	String	Specifies the user ID.
metadata	No	Object	Specifies metadata of the reinstalled ECS. For more information, see Table 4-35 .
mode	No	String	Specifies whether the ECS supports OS reinstallation when the ECS is running. If the parameter value is withStopServer , the ECS supports OS reinstallation when the ECS is running. In such a case, the system automatically stops the ECS before reinstalling its OS.

Table 4-35 metadata field description

Parameter	Mandatory	Type	Description
user_data	No	String	Specifies the user data to be injected to the ECS during the creation. Text and text files can be injected. NOTE <ul style="list-style-type: none"> The content of user_data must be encoded with base64. The maximum size of the content to be injected (before encoding) is 32 KB. For more details, see Injecting User Data into ECSs . Examples Before base64 encoding: <ul style="list-style-type: none"> Linux <pre>#!/bin/bash echo user_test >> /home/user.txt</pre> After base64 encoding: <ul style="list-style-type: none"> Linux <pre>IyEgL2JpbI9iYXNoDQplY2hviHVzZXJfdGVzd-CAmZ3Q7Jmd0OyAvaG9tZS91c2VyLnR4dA==</pre>

Response

See [Responses \(Task\)](#).

Example Request

- Example URL request
POST `https://{endpoint}/v2/{project_id}/cloudservers/{server_id}/reinstallos`
- Example request 1 (using a password to remotely log in to an ECS with OS reinstalled)

```
{
  "os-reinstall": {
    "adminpass": "!QAZxsw2",
    "userid": "7e25b1da389f4697a79df3a0e5bd494e",
    "mode": "withStopServer"
  }
}
```

- Example request 2 (using a key to remotely log in to an ECS with OS reinstalled)

```
{
  "os-reinstall": {
    "keyname": "KeyPair-350b",
    "userid": "7e25b1da389f4697a79df3a0e5bd494e"
  }
}
```

Example Response

See [Responses \(Task\)](#).

```
{
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.2.2 Changing an ECS OS (Using an Image with Cloud-Init Installed)

Function

This API is used to change an ECS OS. During the system disk reinstallation using a new image, the data disks of the ECS remain unchanged.

After this API is called, the system uninstalls the system disk, uses the new image to create a system disk, and attaches it to the ECS. In this way, the OS is changed.

Constraints

- You can only use an image with Cloud-Init or Cloudbase-Init installed. If the image has no Cloudbase-Init or Cloudbase-init installed, use the API described in [Changing an ECS OS \(Using an Image Without Cloud-Init Installed\)](#).

- Only an ECS with a system disk supports changing OS.
- You are not allowed to perform other operations when changing the OS. Otherwise, changing the OS will fail.

URI

POST /v2/{project_id}/cloudservers/{server_id}/changeos

[Table 4-36](#) describes the parameters in the URI.

Table 4-36 Parameter description

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

Request

[Table 4-37](#) describes the request parameters.

Table 4-37 Request parameters

Parameter	Mandatory	Type	Description
os-change	Yes	Object	Changes an ECS OS. For details, see Table 4-38 .

Table 4-38 os-change field description

Parameter	Mandatory	Type	Description
adminpass	No	String	<p>Specifies the initial password of the ECS administrator.</p> <p>The Linux administrator username is root.</p> <p>The password must meet the following requirements:</p> <ul style="list-style-type: none">• 8 to 26 characters• The password must contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters (!@\$%^&*_+[]{};:/?~#*). <p>NOTE</p> <ul style="list-style-type: none">• Linux ECSs can use user_data to inject passwords. In such a case, adminpass is unavailable.• Specify either adminpass or keyname, not both of them.• If both adminpass and keyname are empty, Linux ECSs can use user_data specified in metadata.• adminpass, keyname, and the user_data in metadata can be empty only when a private image password is used or when a password is set after the OS is reinstalled. Additionally, the following requirements must be met: If you need to set the password after the OS change, ensure that the __os_feature_list field of the image contains {"onekey_resetpasswd": "true"}. Reset the ECS password after the OS change.• If you use this field to change the OS of an ECS with Cloud-Init installed, the region in which the ECS is deployed does not support password-authenticated OS changing. In such a case, use key pair authentication.
keyname	No	String	<p>Specifies the key pair name.</p> <p>Keys can be created using the key creating API (Creating and Importing an SSH Key Pair) or obtained using the SSH key query API (Querying SSH Key Pairs).</p>
userid	No	String	<p>Specifies the user ID. When the keyname parameter is being specified, the value of this parameter is used preferentially. If this parameter is left blank, the user ID in the token is used by default.</p>

Parameter	Mandatory	Type	Description
imageid	Yes	String	Specifies the ID of the new image in UUID format. You can obtain the image ID from the console or by following the instructions provided in "Querying Images" in <i>Image Management Service API Reference</i> .
metadata	No	Object	Specifies the metadata of the ECS for which the OS is to be changed. For more information, see Table 4-39 .
mode	No	String	Specifies whether the ECS supports OS change when the ECS is running. If the parameter value is withStopServer , the ECS supports this feature. The system automatically stops the ECS and then changes its OS.

Table 4-39 metadata field description

Parameter	Mandatory	Type	Description
user_data	No	String	Specifies the user data to be injected to the ECS during the creation. Text and text files can be injected. NOTE <ul style="list-style-type: none"> The content of user_data must be encoded with base64. The maximum size of the content to be injected (before encoding) is 32 KB. For more details, see Injecting User Data into ECSs . Examples Before base64 encoding: <ul style="list-style-type: none"> Linux #!/bin/bash echo user_test >> /home/user.txt After base64 encoding: <ul style="list-style-type: none"> Linux lyEgL2Jpbi9iYXNoDQplY2hvlHVzZXJfdGVzd-CAmZ3Q7Jmd0OyAvaG9tZS91c2VyLnR4dA==

Response

See [Responses \(Task\)](#).

Example Request

- Example URL request
POST `https://{endpoint}/v2/{project_id}/cloudservers/{server_id}/changeos`
- Example request 1 (using a password to remotely log in to an ECS with OS changed)

```
{
  "os-change": {
    "adminpass": "1qazXSW@",
    "userid": "7e25b1da389f4697a79df3a0e5bd494e",
    "imageid": "e215580f-73ad-429d-b6f2-5433947433b0",
    "mode": "withStopServer"
  }
}
```

- Example request 2 (using a key to remotely log in to an ECS with OS changed)

```
{
  "os-change": {
    "keyname": "KeyPair-350b",
    "userid": "7e25b1da389f4697a79df3a0e5bd494e",
    "imageid": "e215580f-73ad-429d-b6f2-5433947433b0"
  }
}
```

Example Response

See [Responses \(Task\)](#).

```
{
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.2.3 Reinstalling an ECS OS (Using an Image Without Cloud-Init Installed)

Function

This API is used to reinstall an ECS OS.

After this API is called, the system uninstalls the system disk, uses the original image to create a system disk, and attaches it to the ECS. In this way, the OS is reinstalled.

This API supports the images without Cloud-Init or Cloudbase-Init installed. Otherwise, use the API described in [Reinstalling an ECS OS \(Using an Image with Cloud-Init Installed\)](#).

Constraints

- You cannot reinstall OS on an ECS that does not have the system disk.
- You are not allowed to perform other operations when reinstalling the OS. Otherwise, reinstalling the OS will fail.

URI

POST /v1/{project_id}/cloudservers/{server_id}/reinstallos

[Table 4-40](#) describes the parameters in the URI.

Table 4-40 Parameter description

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

Request

[Table 4-41](#) describes the request parameters.

Table 4-41 Request parameters

Parameter	Mandatory	Type	Description
os-reinstall	Yes	Object	Reinstall the ECS. For details, see Table 4-42 .

Table 4-42 os-reinstall field description

Parameter	Mandatory	Type	Description
adminpass	No	String	<p>Specifies the initial password of the ECS administrator.</p> <p>The Linux administrator username is root.</p> <p>Password complexity requirements:</p> <ul style="list-style-type: none">• 8 to 26 characters• The password must contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters (!@\$%^&_+=+[]:;./?~#*). <p>NOTE</p> <ul style="list-style-type: none">• Either adminpass or keyname is empty.• Either adminpass or keyname is set.
keyname	No	String	<p>Specifies the key name.</p> <p>Keys can be created using the key creating API (Creating and Importing an SSH Key Pair) or obtained using the SSH key query API (Querying SSH Key Pairs).</p>
userid	No	String	<p>Specifies the user ID.</p>
mode	No	String	<p>Specifies whether the ECS supports OS reinstallation when the ECS is running.</p> <p>If the parameter value is withStopServer, the ECS supports OS reinstallation when the ECS is running. In such a case, the system automatically stops the ECS before reinstalling its OS.</p>

Response

For details, see [Responses \(Task\)](#).

Example Request

```
POST https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/reinstallos
{
  "os-reinstall": {
    "keyname": "KeyPair-350b",
    "userid": "7e25b1da389f4697a79df3a0e5bd494e"
  }
}
```

Example Response

See [Responses \(Task\)](#).

```
{  
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"  
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.2.4 Changing an ECS OS (Using an Image Without Cloud-Init Installed)

Function

This API is used to change the OS of an ECS.

After this API is called, the system uninstalls the system disk, uses the new image to create a system disk, and attaches it to the ECS. In this way, the OS is changed.

This API supports the images without Cloud-Init or Cloudbase-Init installed. Otherwise, use the API described in [Changing an ECS OS \(Using an Image with Cloud-Init Installed\)](#).

Constraints

- Only an ECS with a system disk supports changing OS.
- You are not allowed to perform other operations when changing the OS. Otherwise, changing the OS will fail.

URI

POST /v1/{project_id}/cloudservers/{server_id}/changeos

[Table 4-43](#) describes the parameters in the URI.

Table 4-43 Parameter description

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

Request

[Table 4-44](#) describes the request parameters.

Table 4-44 Request parameters

Parameter	Mandatory	Type	Description
os-change	Yes	Object	Changes the OS of an ECS. For details, see Table 4-45 .

Table 4-45 os-change field description

Parameter	Mandatory	Type	Description
adminpass	No	String	<p>Specifies the initial password of the ECS administrator.</p> <p>The Linux administrator username is root.</p> <p>Password complexity requirements:</p> <ul style="list-style-type: none">• 8 to 26 characters• The password must contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters (!@\$%^&_+=+[{ }],./?~#*). <p>NOTE</p> <ul style="list-style-type: none">• Either adminpass or keyname is empty.• Either adminpass or keyname is set.
keyname	No	String	<p>Specifies the key name.</p> <p>Keys can be created using the key creating API (Creating and Importing an SSH Key Pair) or obtained using the SSH key query API (Querying SSH Key Pairs).</p>
userid	No	String	<p>Specifies the user ID. When the keyname parameter is being specified, the value of this parameter is used preferentially. If this parameter is left blank, the user ID in the token is used by default.</p>
imageid	Yes	String	<p>Specifies the ID of the new image in UUID format.</p> <p>You can obtain the image ID from the console or by following the instructions provided in "Querying Images" in <i>Image Management Service API Reference</i>.</p>

Parameter	Mandatory	Type	Description
mode	No	String	Specifies whether the ECS supports OS change when the ECS is running. If the parameter value is withStopServer , the ECS supports OS change when the ECS is running. In such a case, the system automatically stops the ECS before changing its OS.

Response

For details, see [Responses \(Task\)](#).

Example Request

```
POST https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/changeos
{
  "os-change": {
    "keyname": "KeyPair-350b",
    "userid": "7e25b1da389f4697a79df3a0e5bd494e",
    "imageid": "e215580f-73ad-429d-b6f2-5433947433b0"
  }
}
```

Example Response

See [Responses \(Task\)](#).

```
{
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.2.5 Cold Migrating an ECS

Function

- An ECS deployed on a DeH can be migrated to another DeH.
- An ECS deployed on a DeH can be migrated to a public resource pool.
- An ECS deployed in a public resource pool can be migrated to a DeH.

Constraints

- This API is supported by DeHs only.
- Only a stopped ECS can be cold migrated.

- Existing constraints of the native cold migration API are inherited.

URI

POST /v1/{project_id}/cloudservers/{server_id}/migrate

[Table 4-46](#) describes the parameters in the URI.

Table 4-46 Parameter description

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

Request

[Table 4-47](#) describes the request parameters.

Table 4-47 Request parameters

Parameter	Mandatory	Type	Description
migrate	Yes	Object	Specifies the ECS to be migrated. For details, see Table 4-48 . When migrating an ECS from a DeH to a public resource pool, the migrate value is null.

Table 4-48 migrate field description

Parameter	Mandatory	Type	Description
dedicated_host_id	No	String	Specifies the DeH ID. This parameter takes effect when an ECS is migrated from a public resource pool to a DeH or when an ECS is migrated between DeHs.

Response

See [Responses \(Task\)](#).

Example Request

```
POST https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/migrate
```

```
{
  "migrate": {
    "dedicated_host_id": "459a2b9d-804a-4745-ab19-a113bb1b4ddc"
  }
}
```

Example Response

```
{
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.2.6 Obtaining the VNC Login Address

Function

This API is used to obtain the address for remotely logging in to an ECS using VNC.

URI

POST /v1/{project_id}/cloudservers/{server_id}/remote_console

[Table 4-49](#) describes the parameters in the URI.

Table 4-49 Parameter description

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

Request

Request parameters

[Table 4-50](#) describes the request parameters.

Table 4-50 Request parameters

Parameter	Mandatory	Type	Description
remote_console	Yes	Object	Obtains the address for remotely logging in to an ECS. For details, see Table 4-51 .

Table 4-51 remote_console parameters

Parameter	Mandatory	Type	Description
type	Yes	String	Specifies a remote login mode. Set it to novnc .
protocol	Yes	String	Specifies a remote login protocol. Set it to vnc .

Response

Response parameters

[Table 4-52](#) describes the response parameters.

Table 4-52 Response parameters

Parameter	Type	Description
remote_console	Object	Obtains the address for remotely logging in to an ECS. For details, see Table 4-53 .

Table 4-53 remote_console field description

Parameter	Type	Description
type	String	Specifies a remote login mode.
protocol	String	Specifies a remote login protocol.
url	String	Specifies a remote login URL. The URL for VNC login contains a one-time token. Keep the token secure and discard it after using it.

Example Request

```
POST https://{endpoint}/v1/13c67a214ced4afb88d911ae4bd5721a/cloudservers/47bc79ae-df61-4ade-9197-283a74e5d70e/remote_console
```

```
{
  "remote_console": {
    "protocol": "vnc",
    "type": "novnc"
  }
}
```

Example Response

```
{
  "remote_console": {
    "type": "novnc",
    "protocol": "vnc",
    "url": "https://nova-novncproxy.az1.dc1.domainname.com:8002/vnc_auto.html?token=0fda3eca-8232-4249-a69f-44ce8ab31be6&lang=EN&tLength=70"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.2.7 Modifying the Specifications of an ECS

Function

This API is used to modify ECS specifications.

The V1.1 API supports all functions (see [Modifying the Specifications of an ECS \(Pay-per-Use\)](#)) provided by the V1 API. Additionally, the V1.1 API supports the modification of yearly/monthly ECSs.

Constraints

- You can modify the ECS specifications only when the ECS is stopped.
- Spot ECSs do not support specifications modification.

URI

POST /v1.1/{project_id}/cloudservers/{server_id}/resize

Table 4-54 Parameter description

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

Parameter	Mandatory	Description
server_id	Yes	Specifies the ECS ID. You can obtain the ECS ID from the console or by following the instructions provided in "Querying Details About an ECS".

Request

Table 4-55 Parameter description

Parameter	Mandatory	Type	Description
resize	Yes	Object	Specifies the operation to modify ECS specifications. For details, see Table 4-56 .
dry_run	No	Boolean	Specifies whether to only check the request and not modify the ECS specifications. true: The request is sent and the ECS specifications will not be modified. Check items include mandatory parameters and request format. <ul style="list-style-type: none">If the check fails, the system returns an error.If the check is successful, the system returns status code 202. false: The request is sent and the ECS specifications will be modified if the check is successful.

Table 4-56 resize field description

Parameter	Mandatory	Type	Description
flavorRef	Yes	String	Specifies the flavor ID of the ECS after the modification. You can view Querying the Target ECS Flavors to Which a Flavor Can Be Changed to query the target flavors to which a specified ECS flavor can be changed. NOTE <ul style="list-style-type: none">Modifications between the same flavor are not supported.

Parameter	Mandatory	Type	Description
dedicated_host_id	No	String	Specifies the DeH ID after the modification. This parameter is mandatory only for ECSs deployed on DeHs.
extendparam	No	Object	Specifies the extended information about an ECS after the modification. For details, see Table 4-57 .

Table 4-57 extendparam field description

Parameter	Mandatory	Type	Description
isAutoPay	No	String	Specifies whether the order is automatically or manually paid. <ul style="list-style-type: none"> true: The order will be automatically paid. false: The order must be manually paid. <p>NOTE This parameter is valid only for yearly/monthly ECSs. When this parameter is left blank, the order must be manually paid by default.</p>

Response

Table 4-58 Parameter description

Parameter	Mandatory	Type	Description
job_id	No	String	Specifies the task ID. This parameter is returned when you modify the specifications of a pay-per-use ECS. For details about task statuses, see Querying Task Execution Status .
order_id	No	String	Specifies the order ID. This parameter is returned when you modify the specifications of a yearly/monthly ECS.

Example Request

```
POST https://{endpoint}/v1.1/{project_id}/cloudservers/{server_id}/resize
{
  "resize": {
    "flavorRef": "s3.large.2",
```

```
"dedicated_host_id": "459a2b9d-804a-4745-ab19-a113bb1b4ddc",
"extendparam":{
  "isAutoPay": "true"
},
}
}
```

Example Response

```
{
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Or

```
{
  "order_id": "CS1711152257C60TL",
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Or

```
{
  "error": {
    "message": "XXXX",
    "code": "XXX"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.2.8 Modifying the Specifications of an ECS (Pay-per-Use)

Function

ECS specifications can be modified, for example, upgrading the vCPUs and memory, to meet service requirements. This API is used to modify ECS specifications.

Constraints

- You can modify the ECS specifications only when the ECS is stopped.
- This API cannot be used to modify the specifications of a yearly/monthly ECS. For details about how to modify the specifications of a yearly/monthly ECS, see [Modifying the Specifications of an ECS](#).
- Spot ECSs do not support specifications modification.

URI

POST /v1/{project_id}/cloudservers/{server_id}/resize

[Table 4-59](#) describes the parameters in the URI.

Table 4-59 Parameter description

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

Request

[Table 4-60](#) describes the request parameters.

Table 4-60 Request parameters

Parameter	Mandatory	Type	Description
resize	Yes	Object	Specifies the operation to modify ECS specifications. For details, see Table 4-61 .
dry_run	No	Boolean	Specifies whether to only check the request and not modify the ECS specifications. true: The request is sent and the ECS specifications will not be modified. Check items include mandatory parameters and request format. <ul style="list-style-type: none">If the check fails, the system returns an error.If the check is successful, the system returns status code 202. false: The request is sent and the ECS specifications will be modified if the check is successful.

Table 4-61 resize field description

Parameter	Mandatory	Type	Description
flavorRef	Yes	String	Specifies the flavor ID of the ECS after the modification. You can view Querying the Target ECS Flavors to Which a Flavor Can Be Changed to query the target flavors to which a specified ECS flavor can be changed.

Response

See [Responses \(Task\)](#).

Example Request

```
POST https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/resize
{
  "resize": {
    "flavorRef": "c3.15xlarge.2"
  }
}
```

Example Response

```
{
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.3 Batch Operations

4.3.1 Starting ECSs in a Batch

Function

This API is used to start ECSs in a batch based on specified ECS IDs. A maximum of 1,000 ECSs can be started in one minute.

URI

POST /v1/{project_id}/cloudservers/action

[Table 4-62](#) describes the parameters in the URI.

Table 4-62 Parameter description

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

Request

Table 4-63 Request parameters

Parameter	Mandatory	Type	Description
os-start	Yes	Object	Specifies the operation to start the ECS. For details, see Table 4-64 .

Table 4-64 os-start field description

Parameter	Mandatory	Type	Description
servers	Yes	Array of objects	Specifies ECS IDs. For details, see Table 4-65 .

Table 4-65 servers field description

Parameter	Mandatory	Type	Description
id	Yes	String	Specifies the ECS ID.

Response

See [Responses \(Task\)](#).

Example Request

In the request, the parameters to start ECSs must be sent with field **os-start**. For details, see the example request.

```
POST https://{endpoint}/v1/{project_id}/cloudservers/action
{
  "os-start": {
    "servers": [
      {
        "id": "616fb98f-46ca-475e-917e-2563e5a8cd19"
      },
      {
        "id": "726fb98f-46ca-475e-917e-2563e5a8cd20"
      }
    ]
  }
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.3.2 Restarting ECSs in a Batch

Function

This API is used to restart ECSs in a batch based on specified ECS IDs. A maximum of 1,000 ECSs can be restarted in one minute.

URI

POST /v1/{project_id}/cloudservers/action

[Table 4-66](#) describes the parameters in the URI.

Table 4-66 Parameter description

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

Request

[Table 4-67](#) describes the request parameters.

Table 4-67 Request parameters

Parameter	Mandatory	Type	Description
reboot	Yes	Object	Specifies the operation to restart the ECS. For details, see Table 4-68 .

Table 4-68 reboot field description

Parameter	Mandatory	Type	Description
type	Yes	String	Specifies the type of the restart operation. <ul style="list-style-type: none">• SOFT: soft restart• HARD: forcible restart (hard restart)
servers	Yes	Array of objects	Specifies ECS IDs. For details, see Table 4-69 .

Table 4-69 servers field description

Parameter	Mandatory	Type	Description
id	Yes	String	Specifies the ECS ID.

Response

See [Responses \(Task\)](#).

Example Request

In the request, the parameters to restart ECSs must be sent with field **reboot**. For details, see the example request.

```
POST https://{endpoint}/v1/{project_id}/cloudservers/action
{
  "reboot": {
    "type": "SOFT",
    "servers": [
      {
        "id": "616fb98f-46ca-475e-917e-2563e5a8cd19"
      },
      {
        "id": "726fb98f-46ca-475e-917e-2563e5a8cd20"
      }
    ]
  }
}
```

Example Response

```
{
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.3.3 Stopping ECSs in a Batch

Function

This API is used to stop ECSs in a batch based on the specified ECS ID list. A maximum of 1,000 ECSs can be stopped in one minute.

URI

POST /v1/{project_id}/cloudservers/action

[Table 4-70](#) describes the parameters in the URI.

Table 4-70 Parameter description

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

Request

Table 4-71 Request parameters

Parameter	Mandatory	Type	Description
os-stop	Yes	Object	Specifies the operation to stop the ECS. For details, see Table 4-72 .

Table 4-72 os-stop field description

Parameter	Mandatory	Type	Description
servers	Yes	Array of objects	Specifies ECS IDs. For details, see Table 4-73 .
type	No	String	Specifies an ECS stop type. The default value is SOFT . SOFT : normal ECS stop (default) HARD : forcible ECS stop

Table 4-73 servers field description

Parameter	Mandatory	Type	Description
id	Yes	String	Specifies the ECS ID.

Response

See [Responses \(Task\)](#).

Example Request

In the request parameters, the request for stopping the ECS must be issued with field **os-stop**, as shown in the example request.

```
POST https://{endpoint}/v1/{project_id}/cloudservers/action
{
  "os-stop": {
    "type": "HARD",
```

```
"servers": [  
  {  
    "id": "616fb98f-46ca-475e-917e-2563e5a8cd19"  
  },  
  {  
    "id": "726fb98f-46ca-475e-917e-2563e5a8cd20"  
  }  
]
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.3.4 Modifying ECSs in a Batch

Function

This API is used to modify ECSs in a batch.

Only ECS names can be changed in a batch, and the maximum number is 1000 at a time.

URI

PUT /v1/{project_id}/cloudservers/server-name

[Table 4-74](#) lists the URI parameters.

Table 4-74 Parameter description

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

Request

[Table 4-75](#) describes the request parameters.

Table 4-75 Request parameters

Parameter	Type	Mandatory	Description
name	String	Yes	Specifies the changed name of the ECSs. The rules are as follows: Consists of a maximum of 64 characters, including uppercase letters, lowercase letters, digits, hyphens (-), and underscores (_). After you change ECS names in a batch, the system does not automatically add a digital suffix to the changed names. For example, there are three ECSs, test_0001 , test_0002 , and test_0003 . After their names are changed to develop in a batch, their changed names are all develop .
dry_run	Boolean	No	Specifies whether to check the request and change ECS names. true : indicates that only the name change request is sent and the names of the ECSs will not be changed. Check items include mandatory parameters, request format, and service restrictions. If the check fails, the system returns an error. If the check result is as expected, the system properly responds. See Responses (Batch Operation) . false : indicates that the name change request is sent and the ECS names will be changed if the check result is as expected. The default value is false .
servers	Array of objects	Yes	Specifies the IDs of the target ECSs. For details, see Table 4-76 .

Table 4-76 servers field description

Parameter	Type	Mandatory	Description
id	String	Yes	Specifies the ECS ID.

Response

See [Responses \(Batch Operation\)](#).

Example Request

```
PUT https://{endpoint}/v1/{project_id}/cloudservers/server-name
{
  "name": "new-server-name",
  "dry_run": false,
  "servers": [
    {
      "id": "260a0917-f7df-4b25-93ac-950da6c6b5d6"
    },
    {
      "id": "f6d8df1a-e257-48e2-b617-1dd92ced8c20"
    }
  ]
}
```

Example Response

See [Responses \(Batch Operation\)](#).

```
{
  "response": [
    {
      "id": "616fb98f-46ca-475e-917e-2563e5a8cd19"
    },
    {
      "id": "516fb98f-46ca-475e-917e-2563e5a8cd12"
    }
  ]
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.3.5 Attaching a Specified Shared EVS Disk to Multiple ECSs

Function

This API is used to attach a specified shared EVS disk to multiple ECSs.

Constraints

No more than 23 disks have been attached to each of these ECSs.

URI

POST /v1/{project_id}/batchaction/attachvolumes/{volume_id}

[Table 4-77](#) describes the parameters in the URI.

Table 4-77 Parameter description

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

Request

[Table 4-78](#) describes the request parameters.

Table 4-78 Request parameters

Parameter	Mandatory	Type	Description
serverinfo	Yes	Array of objects	Specifies the list of ECSs to which the shared EVS disk is to be attached. For details, see Table 4-79 .

Table 4-79 serverinfo field description

Parameter	Mandatory	Type	Description
server_id	Yes	String	Specifies the ID of the ECS to which the shared EVS disk is to be attached.

Parameter	Mandatory	Type	Description
device	No	String	Indicates the disk device name. NOTE <ul style="list-style-type: none">The new disk device name cannot be the same as an existing one.This parameter is mandatory for Xen ECSs. Set the parameter value to /dev/sda for the system disks of such ECSs and to /dev/sdx for data disks, where x is a letter in alphabetical order. For example, if there are two data disks, set the device names of the two data disks to /dev/sdb and /dev/sdc, respectively. If you set a device name starting with /dev/vd, the system uses /dev/sd by default.For KVM ECSs, set the parameter value to /dev/vda for system disks. The device names for data disks of KVM ECSs are optional. If the device names of data disks are required, set them in alphabetical order. For example, if there are two data disks, set the device names of the two data disks to /dev/vdb and /dev/vdc, respectively. If you set a device name starting with /dev/sd, the system uses /dev/vd by default.

Response

For details, see [Responses \(Task\)](#).

Example Request

```
POST https://{endpoint}/v1/{project_id}/batchaction/attachvolumes/{volume_id}
{
  "serverinfo": [
    {
      "server_id": "a26887c6-c47b-4654-abb5-dfadf7d3f803",
      "device": "/dev/sdb"
    },
    {
      "server_id": "a26887c6-c47b-4654-abb5-dfadf7d3fa05",
      "device": "/dev/sdb"
    }
  ]
}
```

Example Response

```
{
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.4 Flavor Management

4.4.1 Querying Details About Flavors and Extended Flavor Information

Function

This API is used to query details about ECS flavors and extended flavor information.

URI

GET /v1/{project_id}/cloudservers/flavors?availability_zone={availability_zone}

[Table 4-80](#) describes the parameters in the URI.

Table 4-80 Path parameters

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

Table 4-81 Query parameters

Parameter	Mandatory	Type	Description
availability_zone	No	String	Specify an AZ. If this parameter is not left blank, flavors in the normal , obt , or promotion state are returned.

Request

None

Response

[Table 4-82](#) describes the response parameters.

Table 4-82 Response parameters

Parameter	Type	Description
flavors	Array of objects	Specifies ECS flavors. For details, see Table 4-83 .

Table 4-83 flavors field description

Parameter	Type	Description
id	String	Specifies the ID of the ECS flavor.
name	String	Specifies the name of the ECS flavor.
vcpus	String	Specifies the number of vCPUs in the ECS flavor.
ram	Integer	Specifies the memory size (MB) in the ECS flavor.
disk	String	Specifies the system disk size in the ECS flavor. This parameter has not been used. Its default value is 0 .
swap	String	Specifies the swap partition size required by the ECS flavor. This parameter has not been used. Its default value is "".
OS-FLV-EXT-DATA:ephemeral	Integer	Specifies the temporary disk size. This is an extended attribute. This parameter has not been used. Its default value is 0 .
OS-FLV-DISABLED:disabled	Boolean	Specifies whether the ECS flavor has been disabled. This is an extended attribute. This parameter has not been used. Its default value is false .
rxtx_factor	Float	Specifies the ratio of the available network bandwidth to the network hardware bandwidth of the ECS. This parameter has not been used. Its default value is 1.0 .
rxtx_quota	String	Specifies the software constraints of the network bandwidth that can be used by the ECS. This parameter has not been used. Its default value is null .
rxtx_cap	String	Specifies the hardware constraints of the network bandwidth that can be used by the ECS. This parameter has not been used. Its default value is null .

Parameter	Type	Description
os-flavor-access:is_public	Boolean	Specifies whether a flavor is available to all tenants. This is an extended attribute. <ul style="list-style-type: none">• true: indicates that a flavor is available to all tenants.• false: indicates that a flavor is available only to certain tenants. Default value: true
links	Array of objects	Specifies shortcut links for ECS flavors. For details, see Table 4-84 .
os_extra_specs	Object	Specifies extended ECS specifications. For details, see Table 4-85 .
attachable Quantity	Object	Specifies the number of NICs and disks that can be attached to an ECS. For details, see Table 4-86 .

Table 4-84 links field description

Parameter	Type	Description
rel	String	Specifies the shortcut link marker name.
href	String	Provides the corresponding shortcut link.
type	String	Specifies the shortcut link type. This parameter has not been used. Its default value is null .

Table 4-85 os_extra_specs field description (only common parameters are listed)

Parameter	Type	Description
ecs:performance_type	String	Specifies the ECS flavor type: <ul style="list-style-type: none">• normal: general computing• cpu1: computing I• cpu2: computing II• computingv3: general computing-plus• highmem: memory-optimized• saphana: large-memory HANA ECS• diskintensive: disk-intensive
hw:numa_nodes	String	Specifies the number of physical CPUs of the host. The ECS flavor determines whether to return the parameter value.

Parameter	Type	Description
resource_type	String	Specifies the resource type. resource_type is used to differentiate between the types of the physical servers accommodating ECSs.
hpet_support	String	Specifies whether to enable the high-precision clock on the ECS. true indicates to enable the function, and false indicates to disable the function. The ECS specifications determine whether to return the parameter value.
instance_vnic:type	String	Specifies the NIC type. The value of this parameter is consistently enhanced , indicating that network enhancement ECSs are to be created.
instance_vnic:instance_bandwidth	String	Specifies the maximum bandwidth in the unit of Mbit/s. The maximum value of this parameter is 10000 .
instance_vnic:max_count	String	Specifies the maximum number of NICs. The maximum value of this parameter is 4.
quota:local_disk	String	<p>The value of this parameter is in format of "{type}:{count}:{size}:{safeFormat}", where,</p> <ul style="list-style-type: none">● type: indicates the disk type, which can only be HDD.● count: indicates the number of local disks.<ul style="list-style-type: none">- For D1 ECSs, the value can be 3, 6, 12, or 24.- For D2 ECSs, the value can be 2, 4, 8, 12, 16, or 24.- For D3 ECSs, the value can be 2, 4, 8, 12, 16, 24, or 28.● size: indicates the capacity of a single disk, in GB. Currently, only 1675 is supported. The actual disk size is 1800, and the available size after formatting is 1675.● safeFormat: indicates whether the local disks of the ECS are securely formatted.<ul style="list-style-type: none">- For D1 ECSs, the value is FALSE.- For D2 or D3 ECSs, the value is True. <p>NOTE This field is dedicated for disk-intensive ECSs.</p>

Parameter	Type	Description
quota:nvme_ssd	String	<p>The value of this parameter is in the format of {type}:{spec}:{num}:{size}:{safeFormat}.</p> <ul style="list-style-type: none">• type: indicates the capacity of a single NVME SSD disk attached to the ECS, which can only be 1.6 TB or 3.2 TB.• spec: indicates the specification of the NVME SSD disk, which can be large or small. If the value is large, only I3 ECSs are supported.• num: indicates the number of partitions on the disk.• size: indicates the capacity, in the unit of GB, of the disk used by the guest user. If the spec value is large, the value of this parameter is the size of a single disk attached to the ECS. If the spec value is small, the value of this parameter is 1/4 or 1/2 of the specification.• safeFormat: indicates whether the local disks of the ECS are securely formatted. If the value is True, only I3 ECSs are supported. <p>NOTE This field is dedicated for ultra-high I/O ECSs.</p>
extra_spec:io:persistent_grant	String	<p>Specifies whether persistence is supported. The value of this parameter is true.</p> <p>This parameter indicates that the ECS is persistently authorized to access the storage.</p> <p>NOTE This field is dedicated for disk-intensive D1 ECSs.</p>
ecs:generation	String	<p>Specifies the generation of an ECS type.</p> <p>For example, 3 in s3 indicates the general-purpose third-generation ECSs. For details about flavors and generations, see ECS Specifications in <i>Elastic Cloud Server User Guide</i>.</p>
ecs:virtualization_env_types	String	<p>Specifies a virtualization type.</p> <ul style="list-style-type: none">• If the parameter value is FusionCompute, the ECS uses Xen virtualization.• If the parameter value is CloudCompute, the ECS uses KVM virtualization. <p>NOTE This field is optional.</p>

Parameter	Type	Description
cond:operation:status	String	<p>This parameter takes effect region-wide. If an AZ is not configured in the cond:operation:az parameter, the value of this parameter is used by default. If this parameter is not set or used, the meaning of normal applies. Options:</p> <ul style="list-style-type: none"> • normal: indicates normal commercial use of the flavor. • abandon: indicates that the flavor has been canceled (not displayed). • sellout: indicates that the flavor has been sold out. • obt: indicates that the flavor is under open beta testing (OBT). • obt_sellout: indicates that the OBT resources are sold out. • promotion: indicates the recommended flavor (commercial use, which is similar to normal).
cond:operation:az	String	<p>This parameter takes effect AZ-wide. If an AZ is not configured in this parameter, the value of the cond:operation:status parameter is used by default. This parameter is in the format of "az(xx)". The value in parentheses is the flavor status in an AZ. If the parentheses are left blank, the configuration is invalid. The cond:operation:az options are the same as the cond:operation:status options.</p> <p>For example, a flavor is for commercial use in AZs 0 and 3, sold out in AZ 1, for OBT in AZ 2, and is canceled in other AZs. Then, set parameters as follows:</p> <ul style="list-style-type: none"> • cond:operation:status: abandon • cond:operation:az: az0(normal), az1(sellout), az2(obt), az3(normal) <p>NOTE Configure this parameter if the flavor status in an AZ is different from the cond:operation:status value.</p>
quota:max_rate	String	<p>Specifies the maximum bandwidth.</p> <ul style="list-style-type: none"> • Unit: Mbit/s. If a bandwidth is in the unit of Gbit/s, it must be divided by 1000.
quota:min_rate	String	<p>Specified the assured bandwidth.</p> <ul style="list-style-type: none"> • Unit: Mbit/s. If a bandwidth is in the unit of Gbit/s, it must be divided by 1000.
quota:max_pps	String	<p>Specifies the maximum intranet PPS.</p> <ul style="list-style-type: none"> • Unit: number. If a value is in the unit of 10000, it must be divided by 10000.

Parameter	Type	Description
cond:operation:charge:stop	String	Specifies whether fees are billed for a stopped ECS. <ul style="list-style-type: none">No fees by defaultchargefree
cond:operation:charge	String	Specifies a billing type. <ul style="list-style-type: none">All the billing types are supported if this parameter is not set.period: The billing type is yearly or monthly.demand: The billing type is pay-per-use.
cond:spot:operation:az	String	Specifies the AZ for the flavors in spot pricing billing mode.
cond:operation:roles	String	Specifies the allowed roles. Matched user tag (roles op_gatexxx), which is available to all users if this parameter is not set
cond:spot:operation:status	String	Specifies the status of a flavor in spot pricing billing mode. <ul style="list-style-type: none">Equivalent to abandon if this parameter is not set.normal: indicates commercial use of the flavor.abandon: indicates that the flavor has been terminated.sellout: indicates that the flavor has been sold out.obt: indicates that the flavor is at OBT phase (not supported currently).private: indicates that the flavor is private, which is available only to specified users (not supported currently).test: indicates that the flavor is at free trial phase (not supported currently).promotion: indicates that the flavor is recommended.
cond:network	String	Specifies network constraints. Network features are supported. If this parameter is not set, the default configuration on the console is used.
cond:storage	String	Specifies storage constraints. <ul style="list-style-type: none">Disk features are supported. If this parameter is not set, the default configuration on the console is used.scsi: indicates that SCSI is supported.localdisk: indicates that local disks are supported.ib: indicates that IB is supported.

Parameter	Type	Description
cond:compute:live_resizable	String	Specifies computing constraints. <ul style="list-style-type: none">If the value of this parameter is true, online capacity expansion is supported.If this parameter does not exist or its value is set to false, online capacity expansion is not supported.
cond:compute	String	Specifies computing constraints. <ul style="list-style-type: none">autorecovery: indicates that automatic recovery is supported.If this parameter does not exist, automatic recovery is not supported.
ecs:instance_architecture	String	Specifies the CPU architecture corresponding to the flavor. This parameter is returned only for Kunpeng ECSs. The value arm64 indicates that the CPU architecture is Kunpeng.
info:gpu:name	String	Specifies the number and names of GPUs.
info:cpu:name	String	Specifies the CPU name.
quota:gpu	String	Specifies the GPU name.

Table 4-86 attachableQuantity field description

Parameter	Type	Description
free_scsi	Integer	Specifies the number of SCSI disks that can be attached.
free_blk	Integer	Specifies the number of VBD disks that can be attached.
free_disk	Integer	Specifies the number of disks that can be attached.
free_nic	Integer	Specifies the number of NICs that can be attached.

NOTE

For more information, see "ECS Specifications and Types" in *Elastic Cloud Server User Guide*.

Example Request

```
GET https://{endpoint}/v1/{project_id}/cloudservers/flavors?availability_zone=availability_value
```

Example Response

```
{  
  "flavors": [  

```



```
{
  "attachableQuantity": {
    "free_scsi": 60,
    "free_blk": 24,
    "free_disk": 60,
    "free_nic": 12
  },
  "id": "c3.2xlarge.2",
  "name": "c3.2xlarge.2",
  "vcpus": "8",
  "ram": 16384,
  "disk": "0",
  "swap": "",
  "links": [
    {
      "rel": "self",
      "href": "https://ecs.region.xxx.com/v1.0/743b4c0428d94531b9f2add666642e6b/flavors/c3.2xlarge.2",
      "type": null
    },
    {
      "rel": "bookmark",
      "href": "https://ecs.region.xxx.com/743b4c0428d94531b9f2add666642e6b/flavors/c3.2xlarge.2",
      "type": null
    }
  ],
  "OS-FLV-EXT-DATA:ephemeral": 0,
  "rxtx_factor": 1,
  "OS-FLV-DISABLED:disabled": false,
  "rxtx_quota": null,
  "rxtx_cap": null,
  "os-flavor-access:is_public": true,
  "os_extra_specs": {
    "ecs:virtualization_env_types": "CloudCompute",
    "ecs:generation": "c3",
    "ecs:instance_architecture": "arm64",
    "ecs:performancetype": "computingv3",
    "resource_type": "IOOptimizedC3_2"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.4.2 Querying the Target ECS Flavors to Which a Flavor Can Be Changed

Function

An ECS flavor cannot be changed to certain flavors. This API is used to query the target flavors to which a specified ECS flavor can be changed.

URI

GET /v1/{project_id}/cloudservers/resize_flavors?
instance_uuid={instance_uuid}&source_flavor_id={source_flavor_id}&source_flavor_name={source_flavor_name}

Table 4-87 describes the parameters in the URI.

Table 4-87 Path parameters

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

NOTE

One of the **instance_uuid**, **source_flavor_id**, and **source_flavor_name** parameters must be configured. If multiple parameters are configured, the system processes the **instance_uuid**, **source_flavor_id**, and **source_flavor_name** parameters in descending order by default.

If **instance_uuid** is used to query the flavors that can be changed to, only the flavors supporting the image based on which the target ECS is created are returned. The reason is as follows: Images rely on flavors. If an ECS is created using a public image, the API filters the flavors supported by the image.

Table 4-88 describes the query parameters.

Table 4-88 Query parameters

Parameter	Mandatory	Type	Description
instance_uuid	No	String	Specifies the target ECS ID in UUID format.
source_flavor_id	No	String	Specifies the source flavor ID.
source_flavor_name	No	String	Specifies the source flavor name.

Parameter	Mandatory	Type	Description
sort_key	No	String	Indicates the field for sorting. Options: <ul style="list-style-type: none">● flavorid: indicates the flavor ID. The default value is flavorid.● name: indicates the flavor name.● memory_mb: indicates the memory size.● vcpus: indicates the number of vCPUs.● root_gb: indicates the system disk size.
sort_dir	No	String	Specifies the ascending (asc) or descending (desc) sorting. Options: <ul style="list-style-type: none">● asc: indicates the ascending order.● desc: indicates the descending order.
limit	No	Integer	Specifies the maximum number of flavors that can be displayed on one page. The default value is 1000 .
marker	No	String	Specifies the ID of the last flavor on one page as the paging marker.

Request

None

Response

[Table 4-89](#) describes the response parameters.

Table 4-89 Response parameters

Parameter	Type	Description
flavors	Array of objects	Specifies ECS flavors. For details, see Table 4-90 .

Table 4-90 flavors field description

Parameter	Type	Description
id	String	Specifies the ECS flavor ID.

Parameter	Type	Description
name	String	Specifies the ECS flavor name.
vcpus	String	Specifies the number of vCPUs in the ECS flavor.
ram	Integer	Specifies the memory size (MB) in the ECS flavor.
disk	String	Specifies the system disk size in the ECS flavor. This parameter has not been used. Its default value is 0 .
swap	String	Specifies the swap partition size required by the ECS flavor. This parameter has not been used. Its default value is "".
OS-FLV-EXT-DATA:ephemeral	Integer	Specifies the temporary disk size. This is an extended attribute. This parameter has not been used. Its default value is 0 .
OS-FLV-DISABLED:disabled	Boolean	Specifies whether the ECS flavor has been disabled. This is an extended attribute. This parameter has not been used. Its default value is false .
rxtx_factor	Float	Specifies the ratio of the available network bandwidth to the network hardware bandwidth of the ECS. This parameter has not been used. Its default value is 1 .
rxtx_quota	String	Specifies the software constraints of the network bandwidth that can be used by the ECS. This parameter has not been used. Its default value is null .
rxtx_cap	String	Specifies the hardware constraints of the network bandwidth that can be used by the ECS. This parameter has not been used. Its default value is null .

Parameter	Type	Description
os-flavor-access:is_public	Boolean	Specifies whether a flavor is available to all tenants. This is an extended attribute. <ul style="list-style-type: none">• true: indicates that a flavor is available to all tenants.• false: indicates that a flavor is available only to certain tenants. Default value: true
links	Array of objects	Specifies the shortcut link of the ECS flavor. For details, see Table 4-91 .
extra_specs	Object	Specifies the extended field of the ECS specifications. For details, see Table 4-85 .
instance_quota	Object	This is a reserved parameter.

Table 4-91 links field description

Parameter	Type	Description
rel	String	Specifies the shortcut link marker name.
href	String	Provides the shortcut link.
type	String	Specifies the shortcut link type. This parameter has not been used. Its default value is null .

Example Request

```
GET https://{endpoint}/v1/{project_id}/cloudservers/resize_flavors?source_flavor_id=c3.xlarge.2
```

Example Response

```
{
  "flavors": [
    {
      "id": "c3.15xlarge.2",
      "name": "c3.15xlarge.2",
      "vcpus": "60",
      "ram": 131072,
      "disk": "0",
      "swap": "",
      "links": [
        {
          "rel": "self",
          "href": "https://ecs.region.xxx.com/v1.0/743b4c0428d94531b9f2add666642e6b/flavors/c3.15xlarge.2",
        }
      ]
    }
  ]
}
```

```
    "type": null
  },
  {
    "rel": "bookmark",
    "href": "https://ecs.region.xxx.com/743b4c0428d94531b9f2add666642e6b/flavors/c3.15xlarge.
2",
    "type": null
  }
],
"OS-FLV-EXT-DATA:ephemeral": 0,
"rxtx_factor": 1,
"OS-FLV-DISABLED:disabled": false,
"rxtx_quota": null,
"rxtx_cap": null,
"os-flavor-access:is_public": true,
"extra_specs": {
  "ecs:virtualization_env_types": "CloudCompute",
  "ecs:generation": "c3",
  "ecs:performancetype": "computingv3",
  "resource_type": "IOptimizedC3_2"
}
}
]
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.5 NIC Management

4.5.1 Adding NICs to an ECS in a Batch

Function

This API is used to add one or multiple NICs to an ECS.

URI

POST /v1/{project_id}/cloudservers/{server_id}/nics

[Table 4-92](#) describes the parameters in the URI.

Table 4-92 Parameter description

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

Request

[Table 4-93](#) describes the request parameters.

Table 4-93 Request parameters

Parameter	Mandatory	Type	Description
nics	Yes	Array of objects	Specifies the NICs to be added. For details, see Table 4-94 .

Table 4-94 nics field description

Parameter	Mandatory	Type	Description
subnet_id	Yes	String	Specifies the information about the NICs to be added to an ECS. The value must be the ID of a created network in UUID format.
security_groups	No	Array of objects	Specifies the security groups for NICs. For details, see Table 4-95 .
ip_address	No	String	Specifies the IP address. If this parameter is unavailable, the IP address is automatically assigned.
ipv6_enable	No	Boolean	Indicates whether to support IPv6 addresses. If this parameter is set to true , the NIC supports IPv6 addresses.
ipv6_bandwidth	No	Object	Specifies the bound shared bandwidth. For details, see ipv6_bandwidth Field Description .

Table 4-95 security_groups field description

Parameter	Mandatory	Type	Description
id	Yes	String	Specifies the ID of the security group.

Response

See [Responses \(Task\)](#).

Example Request

```
POST https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/nics
{
  "nics": [
```

```
{
  "subnet_id": "d32019d3-bc6e-4319-9c1d-6722fc136a23",
  "security_groups": [
    {
      "id": "f0ac4394-7e4a-4409-9701-ba8be283dbc3"
    }
  ]
}
```

Example Response

```
{
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.5.2 Deleting NICs from an ECS in a Batch

Function

This API is used to uninstall and delete one or multiple NICs from an ECS.

Constraints for API `/v1/{project_id}/cloudservers/{server_id}/os-server-password`

The primary NIC of an ECS has routing rules configured and cannot be deleted.

URI

POST `/v1/{project_id}/cloudservers/{server_id}/nics/delete`

[Table 4-96](#) describes the parameters in the URI.

Table 4-96 Parameter description

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

Request

[Table 4-97](#) describes the request parameters.

Table 4-97 Request parameters

Parameter	Mandatory	Type	Description
nics	Yes	Array of objects	Specifies the NICs to be deleted. For details, see Table 4-98 .

Table 4-98 nics field description

Parameter	Mandatory	Type	Description
id	Yes	String	Specifies the port ID of the NIC. NOTE When the ID is the same as the ECS primary NIC ID, the system will return error code 403.

Response

See [Responses \(Task\)](#).

Example Request

```
POST https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/nics/delete
{
  "nics": [
    {
      "id": "d32019d3-bc6e-4319-9c1d-6722fc136a23"
    }
  ]
}
```

Example Response

```
{
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.5.3 Querying NICs of an ECS

Function

This API is used to query NICs of an ECS.

URI

GET /v1/{project_id}/cloudservers/{server_id}/os-interface

[Table 4-99](#) describes the parameters in the URI.

Table 4-99 Parameter description

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

Request

None

Response

[Table 4-100](#) describes the response parameters.

Table 4-100 Response parameters

Parameter	Type	Description
interfaceAttachments	Array of objects	Specifies ECS NICs. For details, see Table 4-101 .
attachableQuantity	Object	Specifies the number of NICs that can be attached to an ECS. For details, see Table 4-102 .

Table 4-101 interfaceAttachments field description

Parameter	Type	Description
port_state	String	Specifies the NIC port status.
fixed_ips	Array of objects	Specifies private IP addresses for NICs. For details, see Table 4-103 .
net_id	String	Specifies the network ID to which the NIC port belongs.
port_id	String	Specifies the NIC port ID.
mac_addr	String	Specifies the MAC address of the NIC.

Parameter	Type	Description
delete_on_termination	Boolean	Specifies whether to delete a NIC when detaching it. true : The NIC will be deleted. false : The NIC will not be deleted.
driver_mode	String	Specifies the NIC driver type in Guest OS. The value can be virtio or hinic . The default value is virtio .
min_rate	Integer	Specifies the minimum NIC bandwidth.
multiqueue_num	Integer	Specifies the number of queues. The value can be 1, 2, 4, 8, 16 , or 28 .
pci_address	String	Specifies the BDF number of the network interface in Linux GuestOS. NOTE If the NIC is not supported, no information will be returned.

Table 4-102 attachableQuantity field description

Parameter	Type	Description
free_nic	Integer	Specifies the remaining number of NICs that can be attached to an ECS.

Table 4-103 fixed_ips field description

Parameter	Type	Description
subnet_id	String	Specifies the subnet of the NIC private IP address.
ip_address	String	Specifies the NIC private IP address.

Example Request

```
GET https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/os-interface
```

Example Response

```
{
  "interfaceAttachments": [
    {
      "port_state": "ACTIVE",
      "fixed_ips": [
        {
          "subnet_id": "ba31e1f5-fa76-4530-862c-5176fad033cf",
          "ip_address": "192.168.0.33"
        }
      ]
    },
    {
      "net_id": "610a4af2-1d90-4d2b-8057-dc238b26febfb",
      "port_id": "04819c0a-6a07-44b6-945e-fb932071888e",
      "mac_addr": "fa:16:3e:45:65:c4"
    }
  ]
}
```

```
]
}
```

Returned Values

See [Returned Values for General Requests](#).

4.6 Disk Management

4.6.1 Querying a Single Disk Attached to an ECS

Function

This API is used to query a single disk attached to an ECS.

URI

GET /v1/{project_id}/cloudservers/{server_id}/block_device/{volume_id}

[Table 4-104](#) describes the parameters in the URI.

Table 4-104 Parameter description

Parameter	Mandatory	Description
server_id	Yes	Specifies the ECS ID in UUID format.
project_id	Yes	Specifies the project ID. For details about how to obtain the ID, see Obtaining a Project ID .
volume_id	Yes	Specifies the EVS disk ID in UUID format.

Request

None

Response

[Table 4-105](#) describes the response parameters.

Table 4-105 Response parameters

Parameter	Type	Description
volumeAttachment	Object	Specifies the disk attached to an ECS. For details, see Table 4-106 .

Table 4-106 volumeAttachment parameters

Parameter	Type	Description
serverId	String	Specifies the ECS ID in UUID format.
volumeId	String	Specifies the EVS disk ID in UUID format.
id	String	Specifies the mount ID, which is the same as the EVS disk ID. The value is in UUID format.
size	Integer	Specifies the EVS disk size in GB.
device	String	Specifies the drive letter of the EVS disk, which is the device name of the EVS disk.
pciAddress	String	Specifies the PCI address.
bootIndex	Integer	Specifies the EVS disk boot sequence. <ul style="list-style-type: none">• 0 indicates the system disk.• Non-0 indicates a data disk.
bus	String	Specifies the disk bus type. Options: virtio and scsi

Example Request

```
GET https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/block_device/{volume_id}
```

Example Response

```
{
  "volumeAttachment": {
    "pciAddress": "0000:02:01.0",
    "volumeId": "a26887c6-c47b-4654-abb5-asdf234r234r",
    "device": "/dev/vda",
    "serverId": "4d8c3732-a248-40ed-bebc-539a6ffd25c0",
    "id": "a26887c6-c47b-4654-abb5-asdf234r234r",
    "size": "40",
    "bootIndex": 0,
    "bus": "virtio"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.6.2 Querying Disk Attachments of an ECS

Function

This API is used to query disk attachments of an ECS.

URI

GET /v1/{project_id}/cloudservers/{server_id}/os-volume_attachments

[Table 4-107](#) describes the parameters in the URI.

Table 4-107 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the ID, see Obtaining a Project ID .
server_id	Yes	Specifies the ECS ID in UUID format.

Request

None

Response

[Table 4-108](#) describes the response parameters.

Table 4-108 Response parameters

Parameter	Type	Description
volumeAttachments	Array of objects	Specifies disks attached to an ECS. For details, see Table 4-109 .

Table 4-109 volumeAttachments field description

Parameter	Type	Description
device	String	Specifies the drive letter of the EVS disk, which is the device name of the EVS disk.
id	String	Specifies the mount ID, which is the same as the EVS disk ID. The value is in UUID format.

Parameter	Type	Description
serverId	String	Specifies the ECS ID in UUID format.
volumeId	String	Specifies the EVS disk ID in UUID format.

Example Request

GET `https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/os-volume_attachments`

Example Response

```
{
  "volumeAttachments": [
    {
      "device": "/dev/sdd",
      "id": "a26887c6-c47b-4654-abb5-dfadf7d3f803",
      "serverId": "4d8c3732-a248-40ed-bebc-539a6ffd25c0",
      "volumeId": "a26887c6-c47b-4654-abb5-dfadf7d3f803"
    },
    {
      "device": "/dev/sdc",
      "id": "a26887c6-c47b-4654-abb5-dfadf7d3f804",
      "serverId": "4d8c3732-a248-40ed-bebc-539a6ffd25c0",
      "volumeId": "a26887c6-c47b-4654-abb5-dfadf7d3f804"
    }
  ]
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.6.3 Querying Information About Disks Attached to an ECS

Function

This API is used to query information about disks attached to an ECS.

URI

GET `/v1/{project_id}/cloudservers/{server_id}/block_device`

[Table 4-110](#) describes the parameters in the URI.

Table 4-110 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the ID, see Obtaining a Project ID .
server_id	Yes	Specifies the ECS ID in UUID format.

Request

None

Response

[Table 4-111](#) describes the response parameters.

Table 4-111 Response parameters

Parameter	Type	Description
volumeAttachments	Array of objects	Specifies the disks attached to an ECS. For details, see Table 4-112 .
attachableQuantity	Object	Specifies the number of disks that can be attached to an ECS. For details, see Table 4-113 .

Table 4-112 volumeAttachments parameters

Parameter	Type	Description
serverId	String	Specifies the ECS ID in UUID format.
volumeId	String	Specifies the EVS disk ID in UUID format.
id	String	Specifies the mount ID, which is the same as the EVS disk ID. The value is in UUID format.
size	Integer	Specifies the EVS disk size in GB.
device	String	Specifies the drive letter of the EVS disk, which is the device name of the EVS disk.
pciAddress	String	Specifies the PCI address.
bootIndex	Integer	Specifies the EVS disk boot sequence. <ul style="list-style-type: none">• 0 indicates the system disk.• Non-0 indicates a data disk.

Parameter	Type	Description
bus	String	Specifies the disk bus type. Options: virtio and scsi

Table 4-113 attachableQuantity parameters

Parameter	Type	Description
free_scsi	Integer	Specifies the number of SCSI disks that can be attached to an ECS.
free_blk	Integer	Specifies the number of virtio_blk disks that can be attached to an ECS.
free_disk	Integer	Specifies the total number of disks that can be attached to an ECS.

Example Request

```
GET https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/block_device
```

Example Response

```
{
  "attachableQuantity": {
    "free_scsi": 23,
    "free_blk": 15,
    "free_disk": 23
  },
  "volumeAttachments": [
    {
      "pciAddress": "0000:02:01.0",
      "volumeId": "a26887c6-c47b-4654-abb5-dfadf7d3f803",
      "device": "/dev/vda",
      "serverId": "4d8c3732-a248-40ed-bebc-539a6ffd25c0",
      "id": "a26887c6-c47b-4654-abb5-dfadf7d3f803",
      "size": "40",
      "bootIndex": 0,
      "bus": "virtio"
    },
    {
      "pciAddress": "0000:02:02.0",
      "volumeId": "a26887c6-c47b-4654-abb5-asdf234r234r",
      "device": "/dev/vdb",
      "serverId": "4d8c3732-a248-40ed-bebc-539a6ffd25c0",
      "id": "a26887c6-c47b-4654-abb5-asdf234r234r",
      "size": "10",
      "bootIndex": 1,
      "bus": "virtio"
    }
  ]
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.6.4 Attaching a Disk to an ECS

Function

This API is used to attach a disk to an ECS.

URI

POST /v1/{project_id}/cloudservers/{server_id}/attachvolume

[Table 4-114](#) describes the parameters in the URI.

Table 4-114 Parameter description

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

Request

Table 4-115 Request parameters

Parameter	Mandatory	Type	Description
volumeAttachment	Yes	Object	Specifies the ECS attachment information. For details, see Table 4-116 .
dry_run	No	Boolean	Specifies whether to check the request and attach the disk. <ul style="list-style-type: none">true: indicates that only the request is sent, and no disk will be attached. Check items include mandatory parameters, request format, and service restrictions. If the check fails, the system returns an error. If the check result is as expected, the system properly responds.false: indicates that only the request is sent and the disk will be attached if the check result is as expected. The default value is false .

Table 4-116 volumeAttachment field description

Parameter	Mandatory	Type	Description
volumeld	Yes	String	Specifies the ID of the disk to be attached. The value is in UUID format.
device	No	String	Indicates the disk device name. NOTE <ul style="list-style-type: none">The new disk device name cannot be the same as an existing one.This parameter is mandatory for Xen ECSs. Set the parameter value to /dev/sda for the system disks of such ECSs and to /dev/sdx for data disks, where x is a letter in alphabetical order. For example, if there are two data disks, set the device names of the two data disks to /dev/sdb and /dev/sdc, respectively. If you set a device name starting with /dev/vd, the system uses /dev/sd by default.For KVM ECSs, set the parameter value to /dev/vda for system disks. The device names for data disks of KVM ECSs are optional. If the device names of data disks are required, set them in alphabetical order. For example, if there are two data disks, set the device names of the two data disks to /dev/vdb and /dev/vdc, respectively. If you set a device name starting with /dev/sd, the system uses /dev/vd by default.
volume_type	No	String	Specifies the disk type. If volumeld is unavailable and dry_run is set to true , volume_type is available and must be specified.
count	No	Integer	Specifies the number of disks. If volumeld is unavailable and dry_run is set to true , count is available. If count is unavailable, the number of disks is 1 by default.

Parameter	Mandatory	Type	Description
hw:passthrough	No	String	<ul style="list-style-type: none">If this parameter is set to true, the disk device type is SCSI, which allows ECS OSs to directly access the underlying storage media. SCSI reservation commands are supported.If this parameter is set to false, the disk device type is VBD, which supports only simple SCSI read/write commands. If volumeld is unavailable and dry_run is set to true , hw:passthrough is available and must be specified.

Response

See [Responses \(Task\)](#).

Example Request

```
POST https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/attachvolume
{
  "volumeAttachment": {
    "volumeld": "a26887c6-c47b-4654-abb5-dfadf7d3f803",
    "device": "/dev/sda",
    "volume_type": "SSD",
    "count": 5,
    "hw:passthrough": "true"
  },
  "dry_run": false
}
```

Example Response

```
{
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.6.5 Detaching an EVS Disk from an ECS

Function

This API is used to detach an EVS disk from an ECS.

URI

DELETE /v1/{project_id}/cloudservers/{server_id}/detachvolume/{volume_id}?delete_flag=0

[Table 4-117](#) describes the parameters in the URI.

Table 4-117 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the ID, see Obtaining a Project ID .
server_id	Yes	Specifies the ECS ID.
volume_id	Yes	Specifies the disk ID.
delete_flag	No	Indicates whether to forcibly detach a data disk. <ul style="list-style-type: none">• If yes, set it to 1.• If no, set it to 0. It is set to 0 by default.

Request

None

Response

See [Responses \(Task\)](#).

Example Request

```
DELETE https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/detachvolume/{volume_id}
```

Example Response

```
{
  "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.6.6 Modifying a Single Disk Attached to an ECS.

Function

This API is used to modify the information about a single disk attached to an ECS.

Currently, only the **delete_on_termination** parameter can be modified.

Constraints

- Yearly/monthly-billed disks cannot be modified.
- Shared disks cannot be modified.
- Shared disks cannot be modified.

URI

PUT /v1/{project_id}/cloudservers/{server_id}/block_device/{volume_id}

[Table 4-118](#) lists the parameters.

Table 4-118 Parameter description

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

Request

Table 4-119 Request parameter

Parameter	Mandatory	Type	Description
block_device	Yes	Object	Updates the information about a disk attached to the ECS. For details, see Table 4-120 .

Table 4-120 `block_device` parameter

Parameter	Mandatory	Type	Description
<code>delete_on_termination</code>	Yes	Boolean	<p>Specifies whether the disk attached to the ECS is deleted when the ECS is deleted.</p> <ul style="list-style-type: none">• true: The disk is deleted when the ECS is deleted.• false: The disk is not deleted when the ECS is deleted. <p>NOTE</p> <ul style="list-style-type: none">• Yearly/monthly-billed disks cannot be modified.• Shared disks cannot be modified.• Shared disks cannot be modified.

Response

None

Example Request

```
PUT https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/block_device/{volume_id}
{
  "block_device": {
    "delete_on_termination": true
  }
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.7 Metadata Management

4.7.1 Updating ECS Metadata

Function

This API is used to update ECS metadata.

- If the metadata does not contain the target field, the field is automatically added.
- If the metadata contains the target field, the field value is automatically updated.
- If the field in the metadata is not requested, the field value remains unchanged.

Constraints

An ECS must be in active, stopped, paused, or suspended state, which is specified by **OS-EXT-STS:vm_state**.

URI

POST /v1/{project_id}/cloudservers/{server_id}/metadata

Table 4-121 Parameter description

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

Request

Table 4-122 Request parameters

Parameter	Mandatory	Type	Description
metadata	Yes	Object	Specifies the user-defined metadata key-value pair. The data structure can be empty. If the value is empty, data is not updated. For a metadata tag: It contains a maximum of 255 Unicode characters and cannot be left blank. A tag can contain uppercase letters (A-Z), lowercase letters (a-z), digits (0-9), hyphens (-), underscores (_), colons (:), and periods (.). For a metadata value: It contains a maximum of 255 Unicode characters.

Response

Table 4-123 Parameter description

Parameter	Type	Description
metadata	Object	Specifies the user-defined metadata key-value pair.

Example Request

```
POST https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/metadata
{
  "metadata": {
    "key": "value"
  }
}
```

Example Response

```
{
  "metadata":{
    "key":"value"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

4.7.2 Deleting Specified ECS Metadata

Function

This API is used to delete specified ECS metadata.

Constraints

An ECS must be in active, stopped, paused, or suspended state, which is specified by **OS-EXT-STS:vm_state**.

URI

DELETE /v1/{project_id}/cloudservers/{server_id}/metadata/{key}

[Table 4-124](#) describes the parameters in the URI.

Table 4-124 Parameter description

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

Parameter	Mandatory	Description
server_id	Yes	Specifies the ECS ID.
key	Yes	Specifies the ECS metadata key value to be deleted.

Request

None

Response

None

Example Request

```
DELETE https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/metadata/{key}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

4.8 Tenant Quota Management

4.8.1 Querying Tenant Quotas

Function

This API is used to query the quotas of all resources for a specified tenant, including used quotas.

URI

GET /v1/{project_id}/cloudservers/limits

[Table 4-125](#) describes the parameters in the URI.

Table 4-125 Parameter description

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

Request

None

Response

[Table 4-126](#) describes the response parameters.

Table 4-126 Response parameters

Parameter	Type	Description
absolute	Object	Specifies tenant quotas. For details, see Table 4-127 .

Table 4-127 absolute field description

Parameter	Type	Description
maxTotalInstances	Integer	Specifies the maximum number of ECSs you can use.
maxTotalCores	Integer	Specifies the maximum number of CPU cores you can use.
maxTotalRAMSize	Integer	Specifies the maximum memory space (MB) you can use.
maxTotalKeyPairs	Integer	Specifies the maximum number of SSH key pairs you can use.
maxServerMetadata	Integer	Specifies the maximum length of the metadata you can use.
maxPersonality	Integer	Specifies the maximum number of files that can be injected.
maxPersonalitySize	Integer	Specifies the maximum size (byte) of the file to be injected.
maxServerGroups	Integer	Specifies the maximum number of server groups.
maxServerGroupMembers	Integer	Specifies the maximum number of ECSs in an ECS group.
totalServerGroupsUsed	Integer	Specifies the number of used server groups.
maxSecurityGroups	Integer	Specifies the maximum number of security groups you can use. NOTE The quota complies with the VPC quota limit.

Parameter	Type	Description
maxSecurityGroupRules	Integer	Specifies the maximum number of security group rules that you can configure in a security group. NOTE The quota complies with the VPC quota limit.
maxTotalFloatingIps	Integer	Specifies the maximum number of floating IP addresses you can use.
maxImageMeta	Integer	Specifies the maximum length of the image metadata.
totalInstancesUsed	Integer	Specifies the number of used ECSs.
totalCoresUsed	Integer	Specifies the number of the used CPU cores.
totalRAMUsed	Integer	Specifies the used memory size (MB).
totalSecurityGroupsUsed	Integer	Specifies the number of used security groups.
totalFloatingIpsUsed	Integer	Specifies the number of used floating IP addresses.

Example Request

```
GET https://{endpoint}/v1/{project_id}/cloudservers/limits
```

Example Response

Example response

```
{
  "absolute": {
    "maxServerMeta": 128,
    "maxPersonality": 5,
    "maxImageMeta": 128,
    "maxPersonalitySize": 10240,
    "maxSecurityGroupRules": 20,
    "maxTotalKeypairs": -1,
    "totalRAMUsed": 75776,
    "totalInstancesUsed": 21,
    "maxSecurityGroups": 10,
    "totalFloatingIpsUsed": 0,
    "maxTotalCores": 20480,
    "totalSecurityGroupsUsed": 1,
    "maxTotalFloatingIps": 10,
    "maxTotalInstances": 2048,
    "totalCoresUsed": 40,
    "maxTotalRAMSize": 25165824,
    "maxServerGroups": 10,
    "maxServerGroupMembers": 16,
    "totalServerGroupsUsed": 2
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.9 Task Status Management

4.9.1 Querying Task Execution Status

Function

This API is used to query the execution status of an asynchronous request task.

After an asynchronous request task is issued, for example, creating or deleting an ECS, performing operations on ECSs in a batch, or performing operations on ECS NICs, a task ID will be returned, based on which you can query the execution status of the task.

For details about how to obtain the task ID, see [Responses \(Task\)](#).

URI

GET /v1/{project_id}/jobs/{job_id}

[Table 4-128](#) describes the parameters in the URI.

Table 4-128 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the ID, see Obtaining a Project ID .
job_id	Yes	Specifies the ID of an asynchronous request task.

Request

None

Response

[Table 4-129](#) describes the response parameters.

Table 4-129 Response parameters

Parameter	Type	Description
status	String	<p>Specifies the task status.</p> <ul style="list-style-type: none">• SUCCESS: indicates the task is successfully executed.• RUNNING: indicates that the task is in progress.• FAIL: indicates that the task failed.• INIT: indicates that the task is being initialized.• PENDING_PAYMENT: indicates a yearly/monthly order is pending payment. <p>NOTE The PENDING_PAYMENT status is displayed after the request for creating a yearly/monthly ECS or modifying the specifications of yearly/monthly ECS has been submitted and before the order is paid. If the order is canceled, the status will not be automatically updated. The task will be automatically deleted 14 days later.</p>
entities	Object	<p>Specifies the object of the task.</p> <p>The value of this parameter varies depending on the type of the task. If the task is an ECS-related operation, the value is server_id. If the task is a NIC operation, the value is nic_id. If a sub-Job is available, details about the sub-job are displayed. For details, see Table 4-130.</p>
job_id	String	Specifies the ID of an asynchronous request task.
job_type	String	Specifies the type of an asynchronous request task.
begin_time	String	Specifies the time when the task started.
end_time	String	Specifies the time when the task finished.
error_code	String	<p>Specifies the returned error code when the task execution fails.</p> <p>After the task is executed successfully, the value of this parameter is null.</p>
fail_reason	String	<p>Specifies the cause of the task execution failure.</p> <p>After the task is executed successfully, the value of this parameter is null.</p>
message	String	Specifies the error message returned when an error occurs in the request to query a task.
code	String	<p>Specifies the error code returned when an error occurs in the request to query a task.</p> <p>For details about the error code, see Returned Values for General Requests.</p>

Table 4-130 entities field description

Parameter	Type	Description
sub_jobs_total	Integer	Specifies the number of subtasks.
sub_jobs	Array of objects	Specifies the execution information of a subtask. For details, see Table 4-131 .

Table 4-131 sub_jobs field description

Parameter	Type	Description
status	String	Specifies the task status. <ul style="list-style-type: none">• SUCCESS: indicates the task is successfully executed.• RUNNING: indicates that the task is in progress.• FAIL: indicates that the task failed.• INIT: indicates that the task is being initialized.
entities	Object	Specifies the object of the task. The value of this parameter varies depending on the type of the task. If the task is an ECS-related operation, the value is server_id . If the task is a NIC operation, the value is nic_id . For details, see Table 4-132 .
job_id	String	Specifies the subtask ID.
job_type	String	Specify the subtask type.
begin_time	String	Specifies the time when the task started.
end_time	String	Specifies the time when the task finished.
error_code	String	Specifies the returned error code when the task execution fails. After the task is executed successfully, the value of this parameter is null.
fail_reason	String	Specifies the cause of the task execution failure. After the task is executed successfully, the value of this parameter is null.

Table 4-132 entities field description

Parameter	Type	Description
server_id	String	If the task is an ECS-related operation, the value is server_id .
nic_id	String	If the task is a NIC-related operation, the value is nic_id .
errorcode_message	String	Indicates the cause of a subtask execution failure.

Example Request

```
GET https://{endpoint}/v1/{project_id}/jobs/{job_id}
```

Example Response

```
{
  "status": "SUCCESS",
  "entities": {
    "sub_jobs_total": 1,
    "sub_jobs": [
      {
        "status": "SUCCESS",
        "entities": {
          "server_id": "bae51750-0089-41a1-9b18-5c777978ff6d"
        },
        "job_id": "2c9eb2c5544cbf6101544f0635672b60",
        "job_type": "createSingleServer",
        "begin_time": "2016-04-25T20:04:47.591Z",
        "end_time": "2016-04-25T20:08:21.328Z",
        "error_code": null,
        "fail_reason": null
      }
    ]
  },
  "job_id": "2c9eb2c5544cbf6101544f0602af2b4f",
  "job_type": "createServer",
  "begin_time": "2016-04-25T20:04:34.604Z",
  "end_time": "2016-04-25T20:08:41.593Z",
  "error_code": null,
  "fail_reason": null
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.10 Tag Management

4.10.1 Tag Types

Tag management APIs are classified as the APIs for one-dimensional (1D) tags and the APIs for two-dimensional (2D) tags.

- A 1D tag contains a string. All APIs for 1D tags are native OpenStack APIs. For details, see section [Tag Management](#).
- A 2D tag consists of a key and a value. All APIs for 2D tags are ECS APIs. For details, see this section.

NOTE

- Use the APIs of the same type to add, delete, modify, or query tags.
- 2D tags are recommended.

4.10.2 Adding Tags to an ECS in a Batch

Function

- This API is used to add tags to a specified ECS in a batch.
- The Tag Management Service (TMS) uses this API to batch manage the tags of an ECS.

Constraints

- An ECS allows a maximum of 10 tags.
- This API is idempotent.
During tag creation, if a tag exists (both the key and value are the same as those of an existing tag), the tag is successfully processed by default.
- A new tag will overwrite the original one if their keys are the same and values are different.

URI

POST /v1/{project_id}/cloudservers/{server_id}/tags/action

[Table 4-133](#) describes the parameters in the URI.

Table 4-133 Parameter description

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

Request

[Table 4-134](#) describes the request parameters.

Table 4-134 Request parameters

Parameter	Mandatory	Type	Description
tags	Yes	Array of objects	Specifies tags. For details, see Table 4-135 .
action	Yes	String	Specifies the operation. (Only lowercase letters are supported.) For example, create indicates the creation operation.

Table 4-135 tags field description

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. <ul style="list-style-type: none"> • Cannot be left blank. • Must be unique for each resource. • Contains a maximum of 36 characters. • Must be unique and cannot be left blank.
value	Yes	String	Specifies the tag value. <ul style="list-style-type: none"> • Contains a maximum of 43 characters.

Response

None

Example Request

```
POST https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/tags/action
{
  "action": "create",
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value3"
    }
  ]
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.10.3 Deleting Tags from an ECS in a Batch

Function

- This API is used to delete tags from a specified ECS in a batch.
- The Tag Management Service (TMS) uses this API to batch manage the tags of an ECS.

NOTE

- This API is idempotent. When you delete a tag but the tag does not exist, a successful result is returned.

Constraints

An ECS allows a maximum of 10 tags.

URI

POST /v1/{project_id}/cloudservers/{server_id}/tags/action

[Table 4-136](#) describes the parameters in the URI.

Table 4-136 Parameter description

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

Request

[Table 4-137](#) describes the request parameters.

Table 4-137 Request parameters

Parameter	Mandatory	Type	Description
tags	Yes	Array of objects	Specifies tags. For details, see Table 4-138 .
action	Yes	String	Specifies the operation. (Only lowercase letters are supported.) For example, delete indicates the deletion operation.

Table 4-138 tags field description

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. It contains a maximum of 127 Unicode characters and cannot be left blank. The tag key of an ECS must be unique.
value	No	String	Specifies the tag value. It contains a maximum of 255 Unicode characters and can be left blank.

Response

None

Example Request

```
POST https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/tags/action
{
  "action": "delete",
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value3"
    }
  ]
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.10.4 Querying Project Tags

Function

Projects are used to group and isolate OpenStack resources, which include computing, storage, and network resources. A project can be a department or a team. Multiple projects can be created under one account.

This API is used to query all tags used by a user in a specified project.

URI

GET /v1/{project_id}/cloudservers/tags

[Table 4-139](#) describes the parameters in the URI.

Table 4-139 Parameter description

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

Request

None

Response

[Table 4-140](#) describes the response parameters.

Table 4-140 Response parameters

Parameter	Type	Description
tags	Array of objects	Specifies the tag list. For details, see Table 4-141 .

Table 4-141 tag field description

Parameter	Type	Description
key	String	Specifies the tag key. <ul style="list-style-type: none">Contains a maximum of 36 Unicode characters.
values	Array of strings	Specifies the tag value. <ul style="list-style-type: none">Contains a maximum of 43 Unicode characters.Can be left blank.

Example Request

GET https://{endpoint}/v1/{project_id}/cloudservers/tags

Example Response

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

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.10.5 Querying Tags of an ECS

Function

- This API is used to query the tags of a specified ECS.
- The Tag Management Service (TMS) uses this API to query all tags of an ECS.

URI

GET [/v1/{project_id}/cloudservers/{server_id}/tags](#)

[Table 4-142](#) describes the parameters in the URI.

Table 4-142 Parameter description

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

Request

None

Response

[Table 4-143](#) describes the response parameters.

Table 4-143 Response parameters

Parameter	Type	Description
tags	Array of objects	Specifies tags. For details, see Table 4-144 .

Table 4-144 tags field description

Parameter	Type	Description
key	String	Specifies the tag key.
value	String	Specifies the tag value.

Example Request

```
GET https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/tags
```

Example Response

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

```
]
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.11 ECS Group Management

4.11.1 Creating an ECS Group

Function

This API is used to create an ECS group.

Constraints

Only anti-affinity policies are supported.

URI

POST /v1/{project_id}/cloudservers/os-server-groups

[Table 4-145](#) describes the parameters in the URI.

Table 4-145 Parameter description

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

Request

[Table 4-146](#) describes the request parameters.

Table 4-146 Request parameters

Parameter	Mandatory	Type	Description
server_group	Yes	Object	Specifies the ECS group information. For details, see Table 4-147 .

Table 4-147 server_group parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Specifies the ECS group name. The value contains 1 to 255 characters.
policies	Yes	Array of strings	Specifies the policies associated with the ECS group. Options: <ul style="list-style-type: none">• anti-affinity: ECSs in this group must be deployed on different hosts.

Response

[Table 4-148](#) describes the response parameters.

Table 4-148 Response parameters

Parameter	Type	Description
server_group	Object	Specifies the ECS group information. For details, see Table 4-149 .

Table 4-149 server_group parameters

Parameter	Type	Description
id	String	Specifies the ECS group UUID.
name	String	Specifies the ECS group name.
policies	Array of strings	Specifies the policies associated with the ECS group. Options: <ul style="list-style-type: none">• anti-affinity: ECSs in this group must be deployed on different hosts.
members	Array of strings	Specifies the IDs of the ECSs in an ECS group.
metadata	Object	Specifies the ECS group metadata.

Example Request

```
POST https://{endpoint}/v1/{project_id}/cloudservers/os-server-groups
{
  "server_group": {
    "name": "test",
    "policies": ["anti-affinity"]
  }
}
```

Example Response

```
{
  "server_group": {
    "id": "5bbcc3c4-1da2-4437-a48a-66f15b1b13f9",
    "name": "test",
    "policies": [
      "anti-affinity"
    ],
    "members": [],
    "metadata": {}
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.11.2 Deleting an ECS Group

Function

This API is used to delete an ECS group.

URI

DELETE /v1/{project_id}/cloudservers/os-server-groups/{server_group_id}

[Table 4-150](#) describes the parameters in the URI.

Table 4-150 Parameter description

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

Request Parameters

None

Response Parameters

None

Example Request

```
DELETE https://{endpoint}/v1/{project_id}/cloudservers/os-server-groups/{server_group_id}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.11.3 Adding an ECS to an ECS Group

Function

This API is used to add an ECS to an ECS group. The system automatically deploys the newly added ECS to a host that is different from the ones accommodating other ECSs in the ECS group.

Constraints

- Only KVM ECSs can be added.
- Only the anti-affinity policy is supported. ECSs in the same ECS group are deployed on different hosts, improving service reliability.

URI

POST /v1/{project_id}/cloudservers/os-server-groups/{server_group_id}/action

[Table 4-151](#) describes the parameters in the URI.

Table 4-151 Parameter description

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

Request

[Table 4-152](#) describes the request parameters.

Table 4-152 Request parameters

Parameter	Mandatory	Type	Description
add_member	Yes	Object	Specifies the information of the ECS to be added to an ECS group. For details, see Table 4-153 .

Table 4-153 add_member parameters

Parameter	Mandatory	Type	Description
instance_uuid	Yes	String	Specifies the ECS UUID.

Response

None

Example Request

```
POST https://{endpoint}/v1/{project_id}/cloudservers/os-server-groups/{server_group_id}/action
{
  "add_member": {
    "instance_uuid": "34dac9a0-c4a7-457b-bab2-e2c696e0e401"
  }
}
```

Example Response

Status code 200, indicating that the operation is successful

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.11.4 Removing an ECS from an ECS Group

Function

This API is used to remove an ECS from an ECS group. After being removed, the anti-affinity policy will not take effect on this ECS and other ECSs in the same ECS group.

Constraints

Only the anti-affinity policy is supported. ECSs in the same ECS group are deployed on different hosts, improving service reliability.

URI

POST /v1/{project_id}/cloudservers/os-server-groups/{server_group_id}/action

[Table 4-154](#) describes the parameters in the URI.

Table 4-154 Parameter description

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

Request

[Table 4-155](#) describes the request parameters.

Table 4-155 Request parameters

Parameter	Mandatory	Type	Description
remove_member	Yes	Object	Specifies the information of the ECS to be removed from an ECS group.

Table 4-156 remove_member parameters

Parameter	Mandatory	Type	Description
instance_uuid	Yes	String	Specifies the ECS UUID.

Response

None

Example Request

```
POST https://{endpoint}/v1/{project_id}/cloudservers/os-server-groups/{server_group_id}/action
{
  "remove_member": {
```

```
    "instance_uuid": "34dac9a0-c4a7-457b-bab2-e2c696e0e401"  
  }  
}
```

Example Response

Status code 200, indicating that the operation is successful

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.11.5 Querying ECS Groups

Function

This API is used to query ECS groups.

URI

GET /v1/{project_id}/cloudservers/os-server-groups?limit={limit}&marker={marker}

[Table 4-157](#) describes the parameters in the URI.

Table 4-157 Path parameters

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

Table 4-158 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the upper limit on the number of returned server groups. The maximum value is 1000.
marker	No	String	Specifies the marker that points to the ECS group. The query starts from the next piece of data indexed by this parameter. Parameters marker and limit must be used together.

Request

None

Response

[Table 4-159](#) describes the response parameters.

Table 4-159 Response parameters

Parameter	Type	Description
server_groups	Array of objects	Specifies ECS groups. For details, see Table 4-160 .
page_info	Object	If the pagination function is enabled, the UUID of the last ECS group on the current page is returned. For details, see Table 4-161 .

Table 4-160 server_groups parameter information

Parameter	Type	Description
id	String	Specifies the ECS group UUID.
name	String	Specifies the ECS group name.
members	Array of strings	Specifies the ECSs contained in an ECS group.
metadata	Object	Specifies the ECS group metadata.
policies	Array of strings	Specifies the policies associated with the ECS group. Options: <ul style="list-style-type: none">• anti-affinity: ECSs in this group must be deployed on different hosts.

Table 4-161 page_info field description

Parameter	Type	Description
next_marker	String	Specifies an ECS group UUID.

Example Request

```
GET https://{endpoint}/v1/{project_id}/cloudservers/os-server-groups
```

Example Response

```
{
```

```
"server_groups": [
  {
    "members": [],
    "metadata": {},
    "id": "318b44a7-f7a6-4c0b-8107-e8bd618b28dd",
    "policies": [
      "anti-affinity"
    ],
    "name": "SvrGrp-b9d6"
  },
  {
    "members": [],
    "metadata": {},
    "id": "b8f4cfc4-9a59-498c-9b52-643ee6515cd0",
    "policies": [
      "anti-affinity"
    ],
    "name": "SvrGrp-10a1"
  }
]
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

4.11.6 Querying Details About an ECS Group

Function

This API is used to query details about an ECS group.

URI

GET /v1/{project_id}/cloudservers/os-server-groups/{server_group_id}

[Table 4-162](#) describes the parameters in the URI.

Table 4-162 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the ID, see Obtaining a Project ID .
server_group_id	Yes	Specifies an ECS group UUID.

Request

None

Response

[Table 4-163](#) describes the response parameters.

Table 4-163 Response parameters

Parameter	Type	Description
server_group	Object	Specifies the ECS group information. For details, see Table 4-164 .

Table 4-164 server_group parameters

Parameter	Type	Description
id	String	Specifies an ECS group UUID.
name	String	Specifies the ECS group name.
policies	Array of strings	Specifies the policies associated with the ECS group.
members	Array of strings	Specifies the ECS contained in an ECS group.
metadata	Object	Specifies the ECS group metadata.

Example Request

```
GET https://{endpoint}/v1/{project_id}/cloudservers/os-server-groups/{server_group_id}
```

Example Response

```
{
  "server_group": {
    "id": "5bbcc3c4-1da2-4437-a48a-66f15b1b13f9",
    "name": "test",
    "policies": ["anti-affinity"],
    "members": [],
    "metadata": {}
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

5 OpenStack Nova APIs

5.1 API Version Query

5.1.1 Querying All API Versions

Function

This API is used to query all available Nova versions.

To support function extension, Nova APIs can be distinguished by version. There are two types of versions:

- Major version: Independent URL
- Microversion: Used by the HTTP request header X-OpenStack-Nova-API-Version. Since microversion 2.27, the new microversion header OpenStack-API-Version has been supported.

URI

GET /

Request

None

Response

The following table describes the response parameters.

Table 5-1 Response parameters

Parameter	Type	Description
versions	Object	Specifies the API versions. For details, see Table 5-2 .

Table 5-2 versions field description

Parameter	Type	Description
id	string	Specifies the version ID.
links	Object	Specifies shortcut links for versions. For details, see Table 5-3 .
min_version	string	<ul style="list-style-type: none">Specifies the microversion. If the APIs of this version support microversions, set this parameter to the supported minimum microversion.If the microversion is not supported, leave this parameter blank.
status	string	Specifies the API version status. Possible values are as follows: <ul style="list-style-type: none">CURRENT: This is the preferred API version.SUPPORTED: This is the old API version that is still supported.DEPRECATED: This is the deprecated API version that will be removed.

Parameter	Type	Description
version	string	<ul style="list-style-type: none">• Specifies the microversion. If the APIs of this version support microversions, set this parameter to the supported maximum microversion.• If the microversion is not supported, leave this parameter blank.
updated	string	The value of this parameter varies by API version. If the API version is 2.0, the value is 2011-01-21T11:33:21Z . If the API version is 2.1, the value is 2013-07-23T11:33:21Z .

Table 5-3 links field description

Parameter	Type	Description
href	string	Specifies the links of the corresponding resources.

Parameter	Type	Description
rel	string	<ul style="list-style-type: none">• self: A self link contains a versioned link to the resource. Use these links when the link is followed immediately.• bookmark: A bookmark link provides a permanent link to a resource that is appropriate for long term storage.• alternate: An alternate link can contain an alternate representation of the resource. For example, an OpenStack Compute image might have an alternate representation in the OpenStack Image service.

Example Request

```
GET https://{endpoint}/
```

Example Response

```
{
  "versions": [{
    "links": [{
      "rel": "self",
      "href": "https://ecs.service.domain.com:443/v2/"
    }],
    "id": "v2.0",
    "updated": "2001-09-21T12:33:21Z",
    "status": "SUPPORTED"
  }]
}
```

Returned Values

See [Returned Values for General Requests](#).

5.1.2 Querying a Specified API Version

Function Description

This API is used to query the information of a specified version.

To support function extension, Nova APIs can be distinguished by version. There are two types of versions:

- Major version: Independent URL
- Microversion: Used by the HTTP request header X-OpenStack-Nova-API-Version. Since version 2.27, the new microversion header OpenStack-API-Version has been supported.

 **NOTE**

If the OpenStack-API-Version request header is used, the version is in the format of "compute microversion".

For example, if **key** is set to **OpenStack-API-Version**, set **value** to **compute 2.27**.

URI

GET /{api_version}

[Table 5-4](#) describes the parameters in the URI.

Table 5-4 Parameter description

Parameter	Mandatory	Description
api_version	Yes	Specifies an API version, such as V2.

Request

None

Response

The following table describes the response parameters.

Table 5-5 Response parameters

Parameter	Type	Description
versions	Object	Specifies the versions. For details, see Table 5-6 .

Table 5-6 versions field description

Parameter	Type	Description
id	string	Specifies the version ID.

Parameter	Type	Description
links	Object	Specifies the links to resources. For more information, see the OpenStack Documentation . For details, see Table 5-7 .
media-types	Object	Specifies the media types. For details, see Table 5-8 .
min_version	string	<ul style="list-style-type: none">• Specifies the microversion. If the APIs of this version support microversions, set this parameter to the supported minimum microversion.• If the microversion is not supported, leave this parameter blank.
status	string	Specifies the API version status. Possible values are as follows: <ul style="list-style-type: none">• CURRENT: This is the preferred API version.• SUPPORTED: This is the old API version that is still supported.• DEPRECATED: This is the deprecated API version that will be removed.
updated	string	The value of this parameter varies by API version. If the API version is 2.0, the value is 2011-01-21T11:33:21Z . If the API version is 2.1, the value is 2013-07-23T11:33:21Z .

Parameter	Type	Description
version	string	<ul style="list-style-type: none">• Specifies the microversion. If the APIs of this version support microversions, set this parameter to the supported maximum microversion.• If the microversion is not supported, leave this parameter blank.

Table 5-7 links field description

Parameter	Type	Description
href	string	Specifies the links of the corresponding resources.
rel	string	<ul style="list-style-type: none">• self: A self link contains a versioned link to the resource. Use these links when the link is followed immediately.• bookmark: A bookmark link provides a permanent link to a resource that is appropriate for long term storage.• alternate: An alternate link can contain an alternate representation of the resource. For example, an OpenStack Compute image might have an alternate representation in the OpenStack Image service.

Table 5-8 media-types field description

Parameter	Type	Description
base	string	Specifies the basic type.
type	string	Specifies the media type.

Example Request

```
GET https://{endpoint}/v2
```

Example Response

```
{
  "version": {
    "min_version": "",
    "media-types": [{
      "type": "application/vnd.openstack.compute+json;version=2",
      "base": "application/json"
    }],
    "links": [{
      "rel": "self",
      "href": "https://ecs.service.domain.com:443/v2/"
    }],
    {
      "rel": "describedby",
      "href": "http://docs.openstack.org/",
      "type": "text/html"
    }
  ],
  "id": "v2.0",
  "updated": "1999-02-20T11:33:21Z",
  "version": "",
  "status": "SUPPORTED"
}
```

Returned Values

See [Returned Values for General Requests](#).

5.2 Lifecycle Management

5.2.1 Creating an ECS

Function

This API is used to create a pay-per-use ECS.

This API does not support automatic rollback after creating an ECS failed. If automatic rollback is required, call the API POST /v1/{project_id}/cloudservers. For details, see [Creating an ECS \(Pay-per-Use\)](#).

URI

POST /v2.1/{project_id}/servers

Table 5-9 describes the parameters in the URI.

Table 5-9 Parameter description

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

 **NOTE**

Alias of the API for creating ECSs: `/v2/{project_id}/os-volumes_boot`
This calling mode can only be used in OpenStack client.

Constraints

1. This API is native, which does not support the creation of ECSs using full-ECS images. To use full-ECS images to create ECSs, refer to [Creating an ECS \(Pay-per-Use\)](#).
2. This API is native and cannot be used to create spot price ECSs. To create a spot price ECS, refer to [Creating ECSs](#) and [Creating an ECS \(Pay-per-Use\)](#).
3. This API is native and cannot be used to create yearly/monthly ECSs. To create a yearly/monthly ECS, refer to [Creating ECSs](#).
4. During the creation of an ECS using this API, you cannot bind an EIP to the ECS. If you want to create an ECS and bind an EIP to it, refer to [Creating an ECS \(Pay-per-Use\)](#).
5. Parameter **port** in the three network parameters (**port**, **uuid**, and **fixed_ip**) has the highest priority. If parameter **fixed_ip** is set, you must specify the UUID.
6. A file injection failure will result in the ECS creation failure.
7. The following restrictions apply when you create ECSs using an image:
 - a. You cannot create an ECS on a specified host.
 - b. If a tenant backs up a disk in an ECS, the disk can be deleted only after the tenant deletes all the snapshots of the disk.
 - c. The flavors with different resource types cannot be adjusted if you adjust the specifications of an ECS created using an image.
8. Native APIs `/v2/{project_id}/servers` and `/v2.1/{project_id}/servers` provided by the cloud service platform is developed based on and compatible with the community-version native OpenStack API.

Compared with the community-version native API, this API has the following restrictions when you create an ECS using a specified image:

- Community-version native OpenStack API: creates an ECS using the local disk by default.
- Native API provided by the cloud service platform: creates an ECS using the shared storage as the system disk.

Specifically, when you use the native API to create an ECS:

- a. You can query information about the disks attached to the ECS.
 - b. The ECS system disk uses the EVS disk quota.
 - c. You cannot query ECSs created based on a specified image using the image filtering function.
9. When you create an ECS with a specified disk, ensure that the disk and the ECS are in the same AZ.
 10. The **device_name** field configured in **block_device_mapping_v2** during the ECS creation does not take effect. The system generates a device name by default.
 11. ECSs cannot be created in networks with **provider:network_type** set to **geneve**.

 **NOTE**

provider:network_type being set to **geneve** indicates the internal high-speed network for BMSs.

12. If your ECS is remotely logged in using a key, use the **key_name** parameter. If your ECS is remotely logged in using a password, use the **adminPass** parameter. Linux ECSs support **user_data** for injection.

Request

[Table 5-10](#) describes the request parameters.

Table 5-10 Request parameters

Parameter	Mandatory	Type	Description
server	Yes	Object	Specifies the ECS information. For details, see Table 5-11 .
os:scheduler_hints	No	Object	Specifies the ECS scheduling information. For details, see Table 5-15 . This parameter is not available for BMSs.

Table 5-11 server parameters

Parameter	Mandatory	Type	Description
imageRef	No	String	Specifies the ECS image ID or URL. <ul style="list-style-type: none">• Example image ID: 3b8d6fef-af77-42ab-b8b7-5a7f0f0af8f2• Example image URL: http://glance.openstack.example.com/images/3b8d6fef-af77-42ab-b8b7-5a7f0f0af8f2• If you use a specified disk as the system disk to create an ECS, this parameter is not required. If you do not use a disk to create an ECS, you must set a valid UUID. Otherwise, the API will return error code 400.
flavorRef	Yes	String	Specifies the flavor ID or URL. For example: c3.2xlarge
name	Yes	String	Specifies the ECS name. The value contains 1 to 255 characters. NOTE ECS hostnames comply with RFC952 and RFC1123 naming rules. It is recommended that you configure hostnames using digits, lowercase letters, and hyphens (-). Underscores (_) are converted into hyphens (-) by default.
adminPass	No	String	Specifies the initial login password of the administrator account for logging in to an ECS using password authentication. The Linux administrator is root .
block_device_mapping_v2	No	Array of objects	Indicates the V2 API for specifying the ECS storage device. This is an extended attribute. This is the storage resource API of the new version. You are not allowed to create ECSs in batches when the volume is specified. For details, see Table 5-12 . This parameter is not available for BMSs.
config_drive	No	String	Specifies the config_drive disk to be attached to the ECS during the ECS creation for transferring information to the ECS. This is an extended attribute. This function is not supported.

Parameter	Mandatory	Type	Description
security_groups	No	Array of objects	Specifies the security group that the ECS belongs to. This parameter is an extended attribute. The default parameter value is default . This parameter is valid when you create an ECS on a specified network. For an existing port, the requested security groups are invalid. For details, see Table 5-13 .
networks	Yes	Array of objects	Specifies information about the ECS NIC. This parameter is an extended attribute. This parameter must be specified if multiple tenant networks are used. For details, see Table 5-14 .
key_name	No	String	Specifies the name of a key pair. This parameter is an extended attribute.
user_data	No	String	Specifies the user data to be injected to the ECS during the creation. Text and text files can be injected. NOTE <ul style="list-style-type: none"> The content of user_data must be encoded with base64. The maximum size of the content to be injected (before encoding) is 32 KB. For more information about the user data to be injected, see Injecting User Data into ECSs in <i>Elastic Cloud Server User Guide</i> . Examples Before base64 encoding: <ul style="list-style-type: none"> Linux <pre>#!/bin/bash echo user_test >> /home/user.txt</pre> After base64 encoding: <ul style="list-style-type: none"> Linux <pre>lyEgL2Jpbi9iYXNoDQplY2hvIHVzZXJfdGVzd-CAmZ3Q7Jmd0OyAvaG9tZS91c2VyLnR4dA==</pre>
availability_zone	No	String	Specifies the AZ of a specified ECS. This is an extended attribute. This parameter is mandatory when you create an ECS.

Parameter	Mandatory	Type	Description
return_reservation_id	No	Boolean	<p>Specifies whether the reservation IDs of the ECSs created in a batch are returned. This is an extended attribute. You can query the ECSs created this time based on the returned reservation IDs.</p> <ul style="list-style-type: none">• true: The reservation IDs are returned.• false: The ECS information is returned. <p>NOTE When you create ECSs in a batch, this parameter is available.</p>
min_count	No	Integer	<p>Specifies the minimum number of ECSs that can be created. This is an extended attribute.</p> <p>The default value is 1.</p> <p>NOTE When you use a specified image to create ECSs, this parameter is available.</p>
max_count	No	Integer	<p>Specifies the maximum number of ECSs that can be created.</p> <p>The default value of max_count is the same as that of min_count.</p> <p>Note:</p> <ul style="list-style-type: none">• The max_count value must be greater than or equal to the min_count value.• If both min_count and max_count are specified, the number of ECSs that can be created depends on host resources. If host resources permit, you can create a maximum number of ECSs ranging from min_count to max_count values. <p>NOTE When you use a specified image to create ECSs, this parameter is available.</p>

Parameter	Mandatory	Type	Description
OS-DCF:diskConfig	No	String	<p>Specifies the disk configuration mode. The value can be AUTO or MANUAL.</p> <ul style="list-style-type: none">• MANUAL: indicates that the image space of the system disk cannot be expanded.• AUTO: indicates that the image space of the system disk can be automatically expanded to a value same as that specified in flavor. <p>This function is not supported.</p>
description	No	String	<p>Specifies the description of an ECS, which is a null string by default. This is an extended attribute.</p> <p>This parameter is supported in microversion 2.19 and later.</p> <ul style="list-style-type: none">• Can contain a maximum of 85 characters.• Cannot contain special characters, such as < and >.
auto_terminate_time	No	String	<p>This parameter is not supported now and will be available soon.</p> <p>Specifies the time when resources will be automatically released.</p> <p>The value is in the format of "yyyy-MM-ddTHH:mm:ssZ" in UTC+0 and complies with ISO8601.</p> <p>If the value of second (ss) is not 00, the system automatically sets to the current value of minute (mm).</p> <p>The minimum release time is half an hour later than the current time.</p> <p>The maximum release time is three years later than the current time.</p> <p>For example, set the value to 2020-09-25T12:05:00Z.</p>

Table 5-12 `block_device_mapping_v2` parameters

Parameter	Type	Mandatory	Description
<code>source_type</code>	String	Yes	<p>Specifies the source type of the volume device. Its value can be volume, image, snapshot, or blank.</p> <p>If you use a volume to create an ECS, set source_type to volume. If you use an image to create an ECS, set source_type to image. If you use a snapshot to create an ECS, set source_type to snapshot. If you create an empty data volume, set source_type to blank.</p> <p>NOTE If source_type is snapshot and boot_index is 0, the EVS disk of this snapshot must be the system disk.</p>
<code>destination_type</code>	String	No	<p>Specifies the target type of the disk device. Its value can only be volume.</p> <ul style="list-style-type: none">• volume: indicates the volume type.• local: indicates the local file, which has not been supported.
<code>guest_format</code>	String	No	<p>Specifies the local file system format. Its value can be swap or ext4.</p> <p>This function is not supported.</p>
<code>device_name</code>	String	No	<p>Specifies the disk device name.</p> <p>NOTE This field has been discarded. The specified device_name does not take effect. The system generates a device name by default.</p>
<code>delete_on_termination</code>	Boolean	No	<p>Specifies whether disks are deleted when an ECS is deleted. Its default value is false.</p> <ul style="list-style-type: none">• true: When an ECS is deleted, its disks are deleted.• false: When an ECS is deleted, its disks are not deleted.

Parameter	Type	Mandatory	Description
boot_index	String	No	Specifies whether it is a boot disk. 0 specifies a boot disk, and -1 specifies a non-boot disk. If this parameter is not specified, the default value is -1 . NOTE If source_type of the volume device is volume , there must be one boot_index whose value is 0 .
uuid	String	No	<ul style="list-style-type: none"> If source_type is volume, the value of this parameter is the volume UUID. If source_type is snapshot, the value of this parameter is the snapshot UUID. If source_type is image, the value of this parameter is the image UUID.
volume_size	Integer	No	Specifies the volume size. The value is an integer. This parameter is mandatory when source_type is set to image or blank , and destination_type is set to volume . Unit: GB
volume_type	String	No	Specifies the volume type. This parameter is recommended when source_type is set to image and destination_type is set to volume . For details, see Disk Types and Performance .

Table 5-13 security_groups parameters

Parameter	Mandatory	Type	Description
name	No	String	Specifies the security group name or UUID.

Table 5-14 networks parameters

Parameter	Mandatory	Type	Description
port	No	String	Specifies the network port UUID. This parameter must be set when the network UUID is not specified.
uuid	No	String	Specifies the network UUID. This parameter must be set when the network port is not specified.
fixed_ip	No	String	Specifies the fixed IP address. Parameter port in the three network parameters (port , uuid , and fixed_ip) has the highest priority. If parameter fixed_ip is set, you must specify the UUID.

Table 5-15 os:scheduler_hints parameters

Parameter	Mandatory	Type	Description
group	No	String	Specifies the anti-affinity group. The value is in UUID format. NOTE Ensure that the ECS group uses the anti-affinity policy. You are not advised to use other policies.
different_host	No	Array of strings	The function has not been supported, and this field is reserved.
same_host	No	Array of strings	The function has not been supported, and this field is reserved.
cidr	No	String	The function has not been supported, and this field is reserved.
build_near_host_ip	No	String	The function has not been supported, and this field is reserved.

Parameter	Mandatory	Type	Description
tenancy	No	String	<p>Specifies whether the ECS is created on a Dedicated Host (DeH) or in a shared pool (default).</p> <p>The value can be shared or dedicated.</p> <ul style="list-style-type: none"> • shared: indicates the shared pool. • dedicated: indicates the DeH. <p>The parameter value also takes effect for ECS query operations.</p>
dedicated_host_id	No	String	<p>Specifies the DeH ID.</p> <p>This parameter takes effect only when the value of tenancy is dedicated.</p> <p>If you do not specify this parameter, the system will automatically assign a DeH to you to deploy ECSs.</p> <p>The parameter value also takes effect for ECS query operations.</p>

Response

[Table 5-16](#) describes the response parameters.

Table 5-16 Response parameters

Parameter	Type	Description
server	Object	Specifies ECS information. For details, see Table 5-17 .

Table 5-17 server field description

Parameter	Type	Description
id	String	Specifies the ECS ID in UUID format.
links	Array of objects	Specifies the URI of the ECS. For details, see Table 5-18 .

Parameter	Type	Description
security_groups	Array of objects	Specifies the security groups to which the ECS belongs. For details, see Table 5-19 .
OS-DCF:diskConfig	String	Specifies the disk configuration mode. <ul style="list-style-type: none">• MANUAL: indicates that the image space of the system disk cannot be expanded.• AUTO: indicates that the image space of the system disk can be automatically expanded to a value same as that specified in flavor.
reservation_id	String	Specifies a filtering criteria to query the created ECSs. NOTE When you create ECSs in a batch, this parameter is available.

Table 5-18 links field description

Parameter	Type	Description
rel	String	Specifies the shortcut link marker name.
href	String	Provides the corresponding shortcut link.

Table 5-19 security_groups field description

Parameter	Type	Description
name	String	Specifies the security group name or UUID.

Example Request

Creating an ECS

```
POST https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/servers
```

Example 1: Use an image to create an ECS through the API
block_device_mapping_v2.

```
{
  "server": {
    "flavorRef": "2",
    "name": "wjvm48",
    "metadata": {
      "name": "name_xx1",
      "id": "id_xxxx1"
    },
    "block_device_mapping_v2": [{
```



```

    "destination_type": "volume",
    "uuid": "bd7e4f86-b004-4745-bea2-a55b1085f107",
    "delete_on_termination": "False",
    "boot_index": "0",
    "volume_type": "dsware",
    "volume_size": "40"
  },
  "security_groups": [{
    "name": "name_xx5_sg"
  }],
  "networks": [{
    "uuid": "fd40e6f8-942d-4b4e-a7ae-465287b02a2c",
    "port": "e730a11c-1a19-49cc-8797-cee2ad67af6f",
    "fixed_ip": "10.20.30.137"
  }],
  "key_name": "test",
  "user_data":
  "ICAgICAgDQoiQSBjbG91ZCBkb2VzIG5vdCBrbm93IHdoeSBpdCBtb3ZlcyBpbjBqdXN0IHN1Y2ggYSBkaXJlY3Rp
b24gYW5kIGF0IHN1Y2ggYSBzcGVlZC4uLk0lOGZlZWxzIGFulGltcHVsc2lvbi4uLnRoaXMgaXMgdGhllHBsYWNIH
RvIGdvlG5vdy4gQnV0IHROZSBza3kga25vd3MgdGhllHJlYXNvbnMgYW5kIHROZSBwYXR0ZXJucyBiZWVhpbmQg
YWxslGNsb3VkcycwYW5kIHlvdSB3aWxslGtub3csiHRvbywgd2hlbiB5b3UgbGlmCB5b3Vyc2VsZiBoaWdoIGVv
b3VnaCB0byBzZWUgYmV5b25kIGhvcml6b25zLiiNCg0KLVJpY2hhcmQgQmFjaA==",
    "availability_zone": "az1-dc1"
  }
}

```

Example 4: Create an ECS through the API imageRef.

```

{
  "server": {
    "flavorRef": "2",
    "name": "wjvm48",
    "metadata": {
      "name": "name_xx1",
      "id": "id_xxxx1"
    },
    "adminPass": "name_xx1",
    "imageRef": "6b344c54-d606-4e1a-a99e-a7d0250c3d14",
    "security_groups": [{
      "name": "name_xx5_sg"
    }],
    "networks": [{
      "uuid": "fd40e6f8-942d-4b4e-a7ae-465287b02a2c",
      "port": "e730a11c-1a19-49cc-8797-cee2ad67af6f",
      "fixed_ip": "10.20.30.137"
    }],
    "key_name": "test",
    "user_data":
    "ICAgICAgDQoiQSBjbG91ZCBkb2VzIG5vdCBrbm93IHdoeSBpdCBtb3ZlcyBpbjBqdXN0IHN1Y2ggYSBkaXJlY3Rp
b24gYW5kIGF0IHN1Y2ggYSBzcGVlZC4uLk0lOGZlZWxzIGFulGltcHVsc2lvbi4uLnRoaXMgaXMgdGhllHBsYWNIH
RvIGdvlG5vdy4gQnV0IHROZSBza3kga25vd3MgdGhllHJlYXNvbnMgYW5kIHROZSBwYXR0ZXJucyBiZWVhpbmQg
YWxslGNsb3VkcycwYW5kIHlvdSB3aWxslGtub3csiHRvbywgd2hlbiB5b3UgbGlmCB5b3Vyc2VsZiBoaWdoIGVv
b3VnaCB0byBzZWUgYmV5b25kIGhvcml6b25zLiiNCg0KLVJpY2hhcmQgQmFjaA==",
      "availability_zone": "az1-dc1"
    }
  }
}

```

Creating ECSs in a batch:

```

{
  "server": {
    "availability_zone": "az1.dc1",
    "name": "test",
    "imageRef": "10ff4f01-35b6-4209-8397-359cb4475fa0",
    "flavorRef": "s3.medium",
    "return_reservation_id": "true",
    "networks": [
      {
        "uuid": "51bead38-d1a3-4d08-be20-0970c24b7cab"
      }
    ]
  }
}

```

```
    ],  
    "min_count": "2",  
    "max_count": "3"  
  }  
}
```

Example response

Creating an ECS

```
{  
  "server": {  
    "security_groups": [  
      {  
        "name": "name_xx5_sg"  
      }  
    ],  
    "OS-DCF:diskConfig": "MANUAL",  
    "id": "567c1557-0eca-422c-bfce-149d6b8f1bb8",  
    "links": [  
      {  
        "href": "http://xxx/v2/dc4059e8e7994f2498b514ca04cdf44/servers/567c1557-0eca-422c-bfce-149d6b8f1bb8",  
        "rel": "self"  
      },  
      {  
        "href": "http://xxx/dc4059e8e7994f2498b514ca04cdf44/servers/567c1557-0eca-422c-bfce-149d6b8f1bb8",  
        "rel": "bookmark"  
      }  
    ],  
    "adminPass": "name_xx1"  
  }  
}
```

Creating ECSs in a batch:

```
{  
  "reservation_id": "r-3fhpjulh"  
}
```

Returned Values

See [Returned Values for General Requests](#).

5.2.2 Modifying ECS Information

Function

This API is used to modify ECS information. Only the name and description of an ECS can be modified.

URI

PUT /v2.1/{project_id}/servers/{server_id}

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

Table 5-20 Parameter description

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

Request

[Table 5-21](#) describes the request parameters.

Table 5-21 Request parameters

Parameter	Mandatory	Type	Description
server	Yes	Object	Specifies the ECS data structure. For details, see Table 5-22 .

Table 5-22 server field description

Parameter	Mandatory	Type	Description
name	No	String	Specifies the name of the modified ECS. The length is greater than 0 and less than 256
description	No	String	Describes the ECS. The value contains a maximum of 255 bytes. This parameter is supported in microversion 2.19 and later.

Response

[Table 5-23](#) describes the response parameters.

Table 5-23 Response parameters

Parameter	Type	Description
server	Object	Specifies ECS information. For details, see Table 5-24 .

Table 5-24 server field description

Parameter	Type	Description
tenant_id	String	Specifies the tenant or project ID.
image	String	Specifies the image ID.
accessIPv4	String	Reserved
addresses	Object	Specifies the attributed network information of the ECS. The structure is Map<String, Object>. For details, see Table 5-25 .
metadata	Object	Specifies the ECS metadata.
accessIPv6	String	Reserved
created	String	Specifies the time when the ECS was created. The time is in the format of "2019-05-22T03:19:19Z".
hostId	String	Specifies the host ID of the ECS.
flavor	Object	Specifies the ECS flavor. For details, see Table 5-26 .
OS-DCF:diskConfig	String	Specifies the disk configuration mode. This is an extended attribute. This field is valid for the ECS started using an image.
user_id	String	Specifies the ID of the user to which an ECS belongs.
name	String	Specifies the modified name of the ECS.
progress	Integer	Reserved
links	Array of Object	Specifies ECS shortcut links. For details, see Table 5-27 .
id	String	Specifies the unique ID of an ECS.
updated	String	Specifies the time when the ECS was updated last time. The time is in the format of "2019-05-22T03:19:19Z".
locked	Boolean	Specifies the ECS lock status, which is True when the ECS is locked and False when the ECS is unlocked. This parameter is supported in microversion 2.9 and later.
description	String	Describes the ECS. This parameter is supported in microversion 2.19 and later.

Parameter	Type	Description
tags	Array of strings	<p>Specifies ECS tags.</p> <p>This parameter is supported in microversion 2.26 and later. If the microversion is not used for query, the response does not contain the tags field.</p> <p>Tag functions have been upgraded on the cloud service platform. After the upgrade, the tag values returned by the system comply with the following rules:</p> <ul style="list-style-type: none"> • The key and value of a tag are connected using an equal sign (=), for example, key=value. • If the value is empty, only the key is returned. • The key and value of a tag are connected using an equal sign (=), for example, key=value. • If the value is empty, only the key is returned.
status	String	<p>Specifies the ECS status.</p> <p>Options: ACTIVE, BUILD, ERROR, HARD_REBOOT, MIGRATING, REBOOT, RESIZE, REVERT_RESIZE, SHELVED, SHELVED_OFFLOADED, SHUTOFF, UNKNOWN, and VERIFY_RESIZE</p> <p>For details, see ECS Statuses.</p>

Table 5-25 Data structure of the network which an ECS accesses

Parameter	Type	Description
addr	String	Specifies the IP address.
version	Integer	<p>Specifies the type of an IP address. The value of this parameter can be 4 or 6.</p> <ul style="list-style-type: none"> • 4: The type of the IP address is IPv4. • 6: The type of the IP address is IPv6.

Table 5-26 flavor field description

Parameter	Type	Description
id	String	<p>Specifies the ECS ID.</p> <p>This parameter is not supported in microversion 2.47 and later.</p>

Parameter	Type	Description
links	Array of objects	Specifies shortcut links for ECS types. For details, see Table 5-27 . This parameter is not supported in microversion 2.47 and later.
vcpus	Integer	Specifies the number of vCPUs in the ECS flavor. This parameter is supported in microversion 2.47 and later.
ram	Integer	Specifies the memory size (MB) in the ECS flavor. This parameter is supported in microversion 2.47 and later.
disk	Integer	Specifies the system disk size in the ECS flavor. Value 0 indicates that the disk size is not limited. This parameter is supported in microversion 2.47 and later.
ephemeral	Integer	Reserved This parameter is supported in microversion 2.47 and later.
swap	Integer	Reserved This parameter is supported in microversion 2.47 and later.
original_name	String	Specifies the name of the ECS flavor. This parameter is supported in microversion 2.47 and later.
extra_specs	Object	Indicates an extended flavor field. For details, see os_extra_specs (flavor) Field Description . This parameter is supported in microversion 2.47 and later.

Table 5-27 links field description

Parameter	Type	Description
rel	String	Specifies the shortcut link marker name.
href	String	Specifies the shortcut link.

Example Request

```
PUT https://{endpoint}/v2.1/{project_id}/servers/{server_id}
{
  "server": {
    "name": "new-server-test"
  }
}
```

```
}  
}
```

Example Response

```
{  
  "server": {  
    "tenant_id": "7910a6e50b80402ba028c8d96c1b31fe",  
    "image": "",  
    "accessIPv4": "",  
    "addresses": {  
      "03be5c1e-e05d-4905-a105-c3bd9b730bdc": [  
        {  
          "addr": "192.168.0.72",  
          "version": 4  
        }  
      ]  
    },  
    "metadata": {},  
    "accessIPv6": "",  
    "created": "2018-05-17T03:15:48Z",  
    "hostId": "7dc82f6b1d406200fc63e395cf4829cbffcb49de0e9c75c5773f201f",  
    "flavor": {  
      "links": [  
        {  
          "rel": "bookmark",  
          "href": "https://None/7910a6e50b80402ba028c8d96c1b31fe/flavors/c3.1U1G"  
        }  
      ],  
      "id": "c3.1U1G"  
    },  
    "OS-DCF:diskConfig": "MANUAL",  
    "user_id": "d698a78532ca430f8daec1858f2b500e",  
    "name": "new-server-test",  
    "progress": 0,  
    "links": [  
      {  
        "rel": "self",  
        "href": "https://None/v2/7910a6e50b80402ba028c8d96c1b31fe/servers/1a19ef4f-be0a-4526-bf2f-14b4464d536a"  
      },  
      {  
        "rel": "bookmark",  
        "href": "https://None/7910a6e50b80402ba028c8d96c1b31fe/servers/1a19ef4f-be0a-4526-bf2f-14b4464d536a"  
      }  
    ],  
    "id": "1a19ef4f-be0a-4526-bf2f-14b4464d536a",  
    "updated": "2018-05-21T00:36:27Z",  
    "status": "ACTIVE"  
  }  
}
```

Returned Values

See [Returned Values for General Requests](#).

5.2.3 Deleting an ECS

Function

This API is used to delete an ECS.

Constraints

When an ECS is deleted, the NIC that is attached to the ECS and specified by **port_id** through the OpenStack Nova API will be retained, and the NIC specified by **net_id** will be deleted.

URI

DELETE /v2.1/{project_id}/servers/{server_id}

[Table 5-28](#) describes the parameters in the URI.

Table 5-28 Parameter description

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

Request

None

Response

None

Example Request

```
DELETE https://{endpoint}/v2.1/{project_id}/servers/{server_id}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.2.4 Querying ECSs

Function

This API is used to query ECSs.

URI

GET /v2.1/{project_id}/servers?changes-since={changes-since}&image={image}&flavor={flavor}&name={name}&status={status}&limit={lim

it}&marker={marker}¬-tags={not-tags}&reservation_id={reservation_id}&ip={ip}

Table 5-29 describes the parameters in the URI.

Table 5-29 Path parameters

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

Table 5-30 Query parameters

Parameter	Mandatory	Type	Description
changes-since	No	String	Specifies the timestamp of the last ECS status update, which is used to filter out the ECSs with statuses updated later than the timestamp. The value is in the format of "CCYY-MM-DDThh:mm:ss+/-hh:mm" in UTC +0 and complies with ISO 8601, for example, 2018-01-17T03:03:32Z.
image	No	String	Specifies the image ID. When image is used as a filter criterion, other filter criteria and paging criteria are not supported. If both the image and other filter criteria are specified, the image filter criterion is used. If the query criteria do not contain the image filter criterion, API functions are not restricted.
flavor	No	String	Specifies the ECS type ID, which is fuzzy matched.
name	No	String	Specifies the ECS name, which is fuzzy matched.

Parameter	Mandatory	Type	Description
status	No	String	Specifies the ECS status. Options: ACTIVE, BUILD, ERROR, HARD_REBOOT, MIGRATING, REBOOT, REBUILD, RESIZE, REVERT_RESIZE, SHUTOFF, and VERIFY_RESIZE In microversion 2.37, the system will return an empty list for the status field out of the preceding options. In microversion 2.38 and later, the system will return error 400. For details, see ECS Statuses .
limit	No	Integer	Specifies the upper limit on the number of returned results. The default value on each page is 25, and the information of a maximum of 1000 ECSs is displayed on each page.
marker	No	String	Specifies the ECS ID to which the marker points. The query will start from its next ID.
tags	No	String	Queries ECSs with tags containing the specified value.
not-tags	No	String	Queries ECSs with tags not containing the specified value. The value is the tag key. NOTE Tag functions have been upgraded on the cloud service platform. If the tags added before the function upgrade are in the format of "Key.Value", query tags using "Key". For example, an existing tag is a.b . After the tag function upgrade, query the tag using "not-tags=a".
reservation_id	No	String	Specifies the ID returned when ECSs are created in a batch. This parameter is used to query ECSs created in a batch.

Parameter	Mandatory	Type	Description
sort_key	No	String	Sorts query results by ECS attribute. The default sorting order is the reverse order of created_at . Options: created_at , availability_zone , display_name , host , instance_type_id , key_name , project_id , user_id , updated_at , uuid , and vm_state
ip	No	String	Indicates the filtering result for IPv4 addresses, which are fuzzy matched.

Request

None

Response

[Table 5-31](#) describes the response parameters.

Table 5-31 Response parameters

Parameter	Type	Description
servers	Array of objects	Specifies the ECSs to be queried. For details, see Table 5-32 .
servers_links	Array of objects	Specifies the link of the next page in pagination query. For details, see Table 5-33 .

Table 5-32 servers field description

Parameter	Type	Description
name	String	Specifies the ECS name.
id	String	Specifies an ECS uniquely.
links	Array of objects	Specifies ECS shortcut links. For details, see Table 5-33 .

Table 5-33 servers_links and links field description

Parameter	Type	Description
rel	String	Specifies the shortcut link marker name.

Parameter	Type	Description
href	String	Specifies the shortcut link.

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/servers
```

Example Response

```
{
  "servers": [
    {
      "id": "616fb98f-46ca-475e-917e-2563e5a8cd19",
      "links": [
        {
          "href": "http://openstack.example.com/v2/openstack/servers/616fb98f-46ca-475e-917e-2563e5a8cd19",
          "rel": "self"
        },
        {
          "href": "http://openstack.example.com/openstack/servers/616fb98f-46ca-475e-917e-2563e5a8cd19",
          "rel": "bookmark"
        }
      ],
      "name": "new-server-test"
    }
  ]
}
```

Returned Values

See [Returned Values for General Requests](#).

5.2.5 Querying Details About ECSs

Function

This API is used to query details about ECSs.

URI

```
GET /v2.1/{project_id}/servers/detail?changes-since={changes-since}&image={image}&flavor={flavor}&name={name}&status={status}&limit={limit}&marker={marker}&not-tags={not-tags}&reservation_id={reservation_id}&ip={ip}
```

[Table 5-34](#) describes the parameters in the URI.

Table 5-34 Path parameters

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

Table 5-35 Query parameters

Parameter	Mandatory	Type	Description
changes-since	No	String	Specifies the timestamp of the last ECS status update, which is used to filter out the ECSs with statuses updated later than the timestamp. The format must comply with ISO 8601 in the format of CCYY-MM-DDThh:mm:ss+/-hh:mm, for example, 2018-01-17T03:03:32Z.
image	No	String	Specifies the image ID. When image is used as a filter criterion, other filter criteria and paging criteria are not supported. If both the image and other filter criteria are specified, the image filter criterion is used. If the query criteria do not contain the image filter criterion, API functions are not restricted.
flavor	No	String	Specifies the ECS flavor ID, which is fuzzy matched.
name	No	String	Specifies the ECS name, which is fuzzy matched.
status	No	String	Specifies the ECS status. Options: ACTIVE, BUILD, ERROR, HARD_REBOOT, MIGRATING, REBOOT, REBUILD, RESIZE, REVERT_RESIZE, SHUTOFF, and VERIFY_RESIZE In microversion 2.37, the system will return an empty list for the status field out of the preceding options. In microversion 2.38 and later, the system will return error 400. For details, see ECS Statuses .

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the upper limit on the number of returned results. Each page contains 25 ECSs by default, and a maximum of 1000 ECSs are returned. For large volumes of data, you are advised to set the value to 100 .
marker	No	String	Specifies the ECS ID to which the marker points. The query will start from its next ID.
tags	No	String	Queries ECSs with tags containing the specified value.
not-tags	No	String	Queries ECSs with tags not containing the specified value. The value is the tag key. NOTE Tag functions have been upgraded on the cloud service platform. If the tags added before the function upgrade are in the format of "Key.Value", query tags using "Key". For example, an existing tag is a.b . After the tag function upgrade, query the tag using "not-tags=a".
reservation_id	No	String	Specifies the ID returned when ECSs are created in a batch. This parameter is used to query ECSs created in a batch.
sort_key	No	String	Sorts query results by ECS attribute. The default sorting order is the reverse order of created_at . The value can be created_at , auto_disk_config , availability_zone , display_description , display_name , host , host_name , image_ref , instance_type_id , kernel_id , key_name , launch_index , launched_at , locked_by , node , power_state , project_id , ramdisk_id , reservation_id , root_device_name , task_state , terminated_at , user_id , updated_at , uuid , or vm_state .
ip	No	String	Indicates the filtering result for IPv4 addresses, which are fuzzy matched.

Request

None

Response

[Table 5-36](#) describes the response parameters.

Table 5-36 Response parameters

Parameter	Type	Description
servers	Array of objects	Specifies the ECSs to be queried. For details, see Table 5-37 .
servers_links	Array of objects	Specifies the link of the next page in pagination query. For details, see Table 5-39 .

Table 5-37 servers field description

Parameter	Type	Description
name	String	Specifies the ECS name.
id	String	Specifies an ECS uniquely.
status	String	Specifies the ECS status. Options: ACTIVE, BUILD, DELETED, ERROR, HARD_REBOOT, MIGRATING, PAUSED, REBOOT, REBUILD, RESIZE, REVERT_RESIZE, SHUTOFF, SHELVED, SHELVED_OFFLOADED, SOFT_DELETED, SUSPENDED, and VERIFY_RESIZE For details, see ECS Statuses .
created	String	Specifies the time when the ECS was created. The time is in the format of "2019-05-22T07:48:53Z".
updated	String	Specifies the last time when the ECS was updated, such as started, stopped, or restarted. The time is in the format of "2019-05-22T07:48:53Z".
flavor	Object	Specifies the ECS flavor. For details, see Table 5-38 .
image	Object	Specifies the ECS image information. For an ECS created using an image, the image ID and link are returned. For details, see Table 5-44 .

Parameter	Type	Description
tenant_id	String	Specifies the ID of the tenant to which the ECS belongs. The parameter value is the same as the project ID specified by project_id .
key_name	String	Specifies the SSH key name.
user_id	String	Specifies the ID of the user to which an ECS belongs.
metadata	Object	Specifies the ECS metadata.
hostId	String	Specifies the host ID of the ECS.
addresses	Object	Specifies the network addresses of an ECS. The structure is Map<String, Object>. <ul style="list-style-type: none">• The key indicates the network name, for example, demo_net.• The value indicates the network attribute specified in Table 5-40.
security_groups	Array of objects	Specifies the security groups to which the ECS belongs. For details, see Table 5-42 .
links	Array of objects	Specifies ECS shortcut links. For details, see Table 5-39 .
os:scheduler_hints	Object	Specifies the ECS scheduling information. For details, see Table 5-45 . This parameter is only available for DeHs.
OS-DCF:diskConfig	String	Specifies the disk configuration mode. This is an extended attribute. This field is valid for the ECS started using an image. Options: <ul style="list-style-type: none">• AUTO: This API uses a single partition to build an ECS with the target disk size. The API automatically adjusts the file system to adapt to the entire partition.• MANUAL: This API uses the partitioning scheme in the source image and the file system to build the ECS. If the target disk size is large, the API does not partition the remaining disk space.
OS-EXT-AZ:availability_zone	String	Specifies the AZ ID. This is an extended attribute.
OS-EXT-SRV-ATTR:host	String	Specifies the name of the host on which the ECS is deployed. This is an extended attribute.

Parameter	Type	Description
OS-EXT-SRV-ATTR:hypervisor_hostname	String	Specifies the hostname of the hypervisor. This is an extended attribute.
OS-EXT-SRV-ATTR:instance_name	String	Specifies the ECS ID. This is an extended attribute.
OS-EXT-STS:power_state	Integer	Specifies the ECS power status. This is an extended attribute. Options: 0 , 1 , 2 , 3 , and 4 <ul style="list-style-type: none">• 0: pending• 1: running• 2: paused• 3: shutdown• 4: crashed
OS-EXT-STS:task_state	String	Specifies the ECS task status. This is an extended attribute. For details about options, see ECS Statuses .
OS-EXT-STS:vm_state	String	Specifies the ECS status. This is an extended attribute. Options: ACTIVE, BUILDING, STOPPED, RESIZED, PAUSED, SUSPENDED, RESCUED, ERROR, DELETED, SOFT_DELETED, SHELVED, and SHELVED_OFFLOADED For details, see ECS Statuses .
OS-SRV-USG:launched_at	String	Specifies the time when the ECS was started. This is an extended attribute. The time is in the format of "2019-05-22T07:48:19.000000".
OS-SRV-USG:terminated_at	String	Specifies the time when the ECS was deleted. This is an extended attribute. The time is in the format of "2019-05-22T07:48:19.000000".
os-extended-volumes:volumes_attached	Array of objects	Specifies information about the EVS disks attached to the ECS. For details, see Table 5-41 .
fault	Object	Describes ECS faults. This parameter is optional. It is returned when an error occurs on an ECS. For details, see Table 5-43 .

Parameter	Type	Description
description	String	Describes the ECS. This parameter is supported in microversion 2.19 and later.
host_status	String	Specifies the nova-compute status. <ul style="list-style-type: none">• UP: The nova-compute status is normal.• UNKNOWN: The nova-compute status is unknown.• DOWN: the nova-compute status is abnormal.• MAINTENANCE: The nova-compute is in maintenance state.• Empty string: There is no host information on the ECS. This parameter is supported in microversion 2.16 and later.
OS-EXT-SRV-ATTR:hostname	String	Specifies the name of the host accommodating the ECS. This parameter is supported in microversion 2.3 and later.
OS-EXT-SRV-ATTR:reservation_id	String	Specifies the reserved ECS ID if multiple ECSs are created in a batch. This parameter is supported in microversion 2.3 and later.
OS-EXT-SRV-ATTR:launch_index	Integer	Specifies the sequence in which ECSs created in a batch start. This parameter is supported in microversion 2.3 and later.
OS-EXT-SRV-ATTR:kernel_id	String	Specifies the UUID of the kernel image if an AMI image is used. In other scenarios, leave this parameter blank. This parameter is supported in microversion 2.3 and later.
OS-EXT-SRV-ATTR:ramdisk_id	String	Specifies the UUID of the Ramdisk image if an AMI image is used. In other scenarios, leave this parameter blank. This parameter is supported in microversion 2.3 and later.
OS-EXT-SRV-ATTR:root_device_name	String	Specifies the device name of the ECS system disk. This parameter is supported in microversion 2.3 and later.

Parameter	Type	Description
OS-EXT-SRV-ATTR:user_data	String	Specifies the user data specified during ECS creation. This parameter is supported in microversion 2.3 and later.
tags	Array of strings	Specifies ECS tags. This parameter is supported in microversion 2.26 and later. If the microversion is not used for query, the response does not contain the tags field. Tag functions have been upgraded on the cloud service platform. After the upgrade, the tag values returned by the system comply with the following rules: <ul style="list-style-type: none"> The key and value of a tag are connected using an equal sign (=), for example, key=value. If the value is empty, only the key is returned.
locked	Boolean	Specifies the ECS lock status, which is True when the ECS is locked and False when the ECS is unlocked. This parameter is supported in microversion 2.9 and later.
accessIPv4	String	Reserved
accessIPv6	String	Reserved
config_drive	String	Reserved
progress	Integer	Reserved

Table 5-38 flavor field description

Parameter	Type	Description
id	String	Specifies the ECS ID. This parameter is not supported in microversion 2.47 and later.
links	Array of objects	Specifies shortcut links for ECS types. For details, see Table 5-39 . This parameter is not supported in microversion 2.47 and later.
vcpus	Integer	Specifies the number of vCPUs in the ECS flavor. This parameter is supported in microversion 2.47 and later.

Parameter	Type	Description
ram	Integer	Specifies the memory size (MB) in the ECS flavor. This parameter is supported in microversion 2.47 and later.
disk	Integer	Specifies the system disk size in the ECS flavor. Value 0 indicates that the disk size is not limited. This parameter is supported in microversion 2.47 and later.
ephemeral	Integer	Reserved This parameter is supported in microversion 2.47 and later.
swap	Integer	Reserved This parameter is supported in microversion 2.47 and later.
original_name	String	Specifies the name of the ECS flavor. This parameter is supported in microversion 2.47 and later.
extra_specs	Object	Extended flavor field For details, see Data Structure for Query Details About Specifications . This parameter is supported in microversion 2.47 and later.

Table 5-39 servers_links and links field description

Parameter	Type	Description
rel	String	Specifies the shortcut link marker name.
href	String	Specifies the shortcut link.

Table 5-40 Data structure of the network which an ECS accesses

Parameter	Type	Description
addr	String	Specifies the IP address.
version	Integer	Specifies the type of an IP address. The value of this parameter can be 4 or 6 . <ul style="list-style-type: none">• 4: The type of the IP address is IPv4.• 6: The type of the IP address is IPv6.

Parameter	Type	Description
OS-EXT-IPS-MAC:mac_address	String	Specifies the MAC address. This is an extended attribute.
OS-EXT-IPS:type	String	Specifies the IP address assignment mode. This is an extended attribute.

Table 5-41 os-extended-volumes:volumes_attached field description

Parameter	Type	Description
id	String	Specifies the EVS disk ID.
delete_on_termination	Boolean	Specifies whether to delete additional disks when deleting the ECS. By default, this parameter is set to False . This parameter is supported in microversion 2.3 and later.

Table 5-42 security_groups field description

Parameter	Type	Description
name	String	Specifies the security group name or UUID.

Table 5-43 fault field description

Parameter	Type	Description
code	Integer	Specifies the error code.
created	String	Specifies the time when an error occurred.
message	String	Describes an error.
details	String	Specifies details about an error. This parameter is optional and is returned only when it is not empty.

Table 5-44 image field description

Parameter	Type	Description
id	String	Specifies the image ID.

Parameter	Type	Description
links	Array of objects	Specifies shortcut links for ECS images. For details, see Table 5-39 .

Table 5-45 os:scheduler_hints parameters

Parameter	Mandatory	Type	Description
tenancy	No	Array of strings	Creates ECSs on a dedicated or shared host. The value of this parameter can be dedicated or shared .
dedicated_host_id	No	Array of strings	Specifies the DeH ID. This parameter takes effect only when tenancy is set to dedicated .

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/servers/detail
```

Example Response

```
{
  "servers": [
    {
      "addresses": {
        "68269e6e-4a27-441b-8029-35373ad50bd9": [
          {
            "addr": "192.168.0.3",
            "version": 4
          }
        ]
      },
      "created": "2012-09-07T16:56:37Z",
      "flavor": {
        "id": "1",
        "links": [
          {
            "href": "http://openstack.example.com/openstack/flavors/1",
            "rel": "bookmark"
          }
        ]
      },
      "hostId": "16d193736a5cfdb60c697ca27ad071d6126fa13baeb670fc9d10645e",
      "id": "05184ba3-00ba-4fbc-b7a2-03b62b884931",
      "image": "",
      "links": [
        {
          "href": "http://openstack.example.com/v2/openstack/servers/05184ba3-00ba-4fbc-b7a2-03b62b884931",
          "rel": "self"
        },
        {
          "href": "http://openstack.example.com/openstack/servers/05184ba3-00ba-4fbc-
```

```
b7a2-03b62b884931",
  "rel": "bookmark"
}
],
"metadata": {},
"name": "new-server-test",
"progress": 0,
"status": "ACTIVE",
"tenant_id": "openstack",
"updated": "2012-09-07T16:56:37Z",
"user_id": "fake"
}
]
```

Returned Values

See [Returned Values for General Requests](#).

5.2.6 Querying Details About an ECS

Function

This API is used to query details about an ECS by ECS ID.

URI

GET /v2.1/{project_id}/servers/{server_id}

[Table 5-46](#) describes the parameters in the URI.

Table 5-46 Parameter description

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

Request

None

Response

[Table 5-47](#) describes the response parameters.

Table 5-47 Response parameters

Parameter	Type	Description
server	Object	Specifies ECS information. For details, see Table 5-48 .

Table 5-48 server field description

Parameter	Type	Description
name	String	Specifies the ECS name.
id	String	Specifies an ECS uniquely.
status	String	Specifies the ECS status. Options: ACTIVE, BUILD, DELETED, ERROR, HARD_REBOOT, MIGRATING, PAUSED, REBOOT, REBUILD, RESIZE, REVERT_RESIZE, SHUTOFF, SHELVED, SHELVED_OFFLOADED, SOFT_DELETED, SUSPENDED, and VERIFY_RESIZE For details, see ECS Statuses .
created	String	Specifies the time when the ECS was created. The time is in the format of "2019-05-22T07:48:19Z".
updated	String	Specifies the last time when the ECS was updated, such as started, stopped, or restarted. The time is in the format of "2019-05-22T07:48:19Z".
flavor	Object	Specifies the ECS flavor. For details, see Table 5-49 .
image	Object	Specifies the ECS image information. For an ECS created using an image, the image ID and link are returned. For details, see Table 5-50 .
tenant_id	String	Specifies the ID of the tenant to which the ECS belongs. The parameter value is the same as the project ID specified by project_id .
key_name	String	Specifies the SSH key name.
user_id	String	Specifies the ID of the user to which an ECS belongs.
metadata	Object	Specifies the ECS metadata.
hostId	String	Specifies the host ID of the ECS.

Parameter	Type	Description
addresses	Object	Specifies the network addresses of an ECS. The structure is Map<String, Object>. <ul style="list-style-type: none">• The key indicates the network name, for example, demo_net.• The value indicates the network attribute specified in Table 5-52.
security_group_s	Array of objects	Specifies the security groups to which the ECS belongs. For details, see Table 5-54 .
links	Array of objects	Specifies ECS shortcut links. For details, see Table 5-51 .
tags	Array of strings	Specifies ECS tags. This parameter is supported in microversion 2.26 and later. If the microversion is not used for query, the response does not contain the tags field. Tag functions have been upgraded on the cloud service platform. After the upgrade, the tag values returned by the system comply with the following rules: <ul style="list-style-type: none">• The key and value of a tag are connected using an equal sign (=), for example, key=value.• If the value is empty, only the key is returned.
os:scheduler_hints	Object	Specifies the ECS scheduling information. For details, see Table 5-56 . This parameter is not available for BMSs. and is only available in DeH scenarios.
OS-DCF:diskConfig	String	Specifies the disk configuration mode. This is an extended attribute. This field is valid for the ECS started using an image. Options: <ul style="list-style-type: none">• AUTO: This API uses a single partition to build an ECS with the target disk size. The API automatically adjusts the file system to adapt to the entire partition.• MANUAL: This API uses the partitioning scheme in the source image and the file system to build the ECS. If the target disk size is large, the API does not partition the remaining disk space.
OS-EXT-AZ:availability_zone	String	Specifies the AZ ID. This is an extended attribute.

Parameter	Type	Description
OS-EXT-SRV-ATTR:host	String	Specifies the name of the host on which the ECS is deployed. This is an extended attribute.
OS-EXT-SRV-ATTR:hypervisor_hostname	String	Specifies the hostname of the hypervisor. This is an extended attribute.
OS-EXT-SRV-ATTR:instance_name	String	Specifies the ECS ID. This is an extended attribute.
OS-EXT-STS:power_state	Integer	Specifies the ECS power status. This is an extended attribute. Options: 0, 1, 2, 3, and 4 <ul style="list-style-type: none">● 0: pending● 1: running● 2: paused● 3: shutdown● 4: crashed
OS-EXT-STS:task_state	String	Specifies the ECS task status. This is an extended attribute. For details about options, see ECS Statuses .
OS-EXT-STS:vm_state	String	Specifies the ECS status. This is an extended attribute. Options: ACTIVE, BUILDING, STOPPED, RESIZED, PAUSED, SUSPENDED, RESCUED, ERROR, DELETED, SOFT_DELETED, SHELVED, and SHELVED_OFFLOADED For details, see ECS Statuses .
OS-SRV-USG:launched_at	String	Specifies the time when the ECS was started. This is an extended attribute. The time is in the format of "2019-05-22T07:48:19.000000".
OS-SRV-USG:terminated_at	String	Specifies the time when the ECS was deleted. This is an extended attribute. The time is in the format of "2019-05-22T07:48:19.000000".
os-extended-volumes:volumes_attached	Array of objects	Specifies information about the EVS disks attached to the ECS. For details, see Table 5-53 .
fault	Object	Describes ECS faults. This parameter is optional. It is returned when an error occurs on an ECS. For details, see Table 5-55 .

Parameter	Type	Description
description	String	Describes the ECS. This parameter is supported in microversion 2.19 and later.
host_status	String	Specifies the nova-compute status. <ul style="list-style-type: none">• UP: The nova-compute status is normal.• UNKNOWN: The nova-compute status is unknown.• DOWN: the nova-compute status is abnormal.• MAINTENANCE: The nova-compute is in maintenance state.• Null: There is no host information on the ECS. This parameter is supported in microversion 2.16 and later.
OS-EXT-SRV-ATTR:hostname	String	Specifies the name of the host accommodating the ECS. This parameter is supported in microversion 2.3 and later.
OS-EXT-SRV-ATTR:reservation_id	String	Specifies the reserved ECS ID if multiple ECSs are created in a batch. This parameter is supported in microversion 2.3 and later.
OS-EXT-SRV-ATTR:launch_index	Integer	Specifies the sequence in which ECSs created in a batch start. This parameter is supported in microversion 2.3 and later.
OS-EXT-SRV-ATTR:kernel_id	String	Specifies the UUID of the kernel image if an AMI image is used. In other scenarios, leave this parameter blank. This parameter is supported in microversion 2.3 and later.
OS-EXT-SRV-ATTR:ramdisk_id	String	Specifies the UUID of the Ramdisk image if an AMI image is used. In other scenarios, leave this parameter blank. This parameter is supported in microversion 2.3 and later.
OS-EXT-SRV-ATTR:root_device_name	String	Specifies the device name of the ECS system disk. This parameter is supported in microversion 2.3 and later.

Parameter	Type	Description
OS-EXT-SRV-ATTR:user_data	String	Specifies the user data specified during ECS creation. This parameter is supported in microversion 2.3 and later.
locked	Boolean	Specifies the ECS lock status, which is True when the ECS is locked and False when the ECS is unlocked. This parameter is supported in microversion 2.9 and later.
accessIPv4	String	Reserved
accessIPv6	String	Reserved
config_drive	String	Reserved
progress	Integer	Reserved

Table 5-49 flavor field description

Parameter	Type	Description
id	String	Specifies the ECS ID. This parameter is not supported in microversion 2.47 and later.
links	Array of objects	Specifies shortcut links for ECS types. For details, see Table 5-51 . This parameter is not supported in microversion 2.47 and later.
vcpus	Integer	Specifies the number of vCPUs in the ECS flavor. This parameter is supported in microversion 2.47 and later.
ram	Integer	Specifies the memory size (MB) in the ECS flavor. This parameter is supported in microversion 2.47 and later.
disk	Integer	Specifies the system disk size in the ECS flavor. Value 0 indicates that the disk size is not limited. This parameter is supported in microversion 2.47 and later.
ephemeral	Integer	Reserved This parameter is supported in microversion 2.47 and later.

Parameter	Type	Description
swap	Integer	Reserved This parameter is supported in microversion 2.47 and later.
original_name	String	Specifies the name of the ECS flavor. This parameter is supported in microversion 2.47 and later.
extra_specs	Object	Indicates an extended flavor field. For details, see os_extra_specs (flavor) Field Description . This parameter is supported in microversion 2.47 and later.

Table 5-50 image field description

Parameter	Type	Description
id	String	Specifies the image ID.
links	Array of objects	Specifies shortcut links for ECS images. For details, see Table 5-51 .

Table 5-51 links field description

Parameter	Type	Description
rel	String	Specifies the shortcut link marker name.
href	String	Provides the corresponding shortcut link.

Table 5-52 Data structure of the network which an ECS accesses

Parameter	Type	Description
addr	String	Specifies the IP address.
version	Integer	Specifies the type of an IP address. The value of this parameter can be 4 or 6 . <ul style="list-style-type: none">• 4: The type of the IP address is IPv4.• 6: The type of the IP address is IPv6.
OS-EXT-IPS-MAC:mac_address	String	Specifies the MAC address. This is an extended attribute.

Parameter	Type	Description
OS-EXT-IPS:type	String	Specifies the IP address assignment mode. This is an extended attribute.

Table 5-53 os-extended-volumes:volumes_attached field description

Parameter	Type	Description
id	String	Specifies the EVS disk ID.
delete_on_termination	Boolean	Specifies whether to delete additional disks when deleting the ECS. By default, this parameter is set to False . This parameter is supported in microversion 2.3 and later.

Table 5-54 security_groups field description

Parameter	Type	Description
name	String	Specifies the security group name or UUID.

Table 5-55 fault field description

Parameter	Type	Description
code	Integer	Specifies the error code.
created	String	Specifies the time when an error occurred.
message	String	Describes an error.
details	String	Specifies details about an error. This parameter is optional and is returned only when it is not empty.

Table 5-56 os:scheduler_hints parameters

Parameter	Mandatory	Type	Description
tenancy	No	Array of strings	Creates ECSs on a dedicated or shared host. The value of this parameter can be dedicated or shared .

Parameter	Mandatory	Type	Description
dedicated_host_id	No	Array of strings	Specifies the DeH ID. This parameter takes effect only when the value of tenancy is dedicated .

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/servers/{server_id}
```

Example Response

```
{
  "server": {
    "addresses": {
      "68269e6e-4a27-441b-8029-35373ad50bd9": [
        {
          "addr": "192.168.0.3",
          "version": 4,
          "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:1b:35:78",
          "OS-EXT-IPS:type": "fixed"
        }
      ]
    },
    "created": "2012-08-20T21:11:09Z",
    "flavor": {
      "id": "1",
      "links": [
        {
          "href": "http://openstack.example.com/openstack/flavors/1",
          "rel": "bookmark"
        }
      ]
    },
    "hostId": "65201c14a29663e06d0748e561207d998b343e1d164bfa0aafa9c45d",
    "id": "893c7791-f1df-4c3d-8383-3caae9656c62",
    "image": "",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/servers/893c7791-f1df-4c3d-8383-3caae9656c62",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/servers/893c7791-f1df-4c3d-8383-3caae9656c62",
        "rel": "bookmark"
      }
    ],
    "metadata": {},
    "name": "new-server-test",
    "progress": 0,
    "status": "ACTIVE",
    "tenant_id": "openstack",
    "updated": "2012-08-20T21:11:09Z",
    "user_id": "fake"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.3 Status Management

5.3.1 Starting an ECS

Function

This API is used to start a single ECS.

URI

POST /v2.1/{project_id}/servers/{server_id}/action

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

Table 5-57 Parameter description

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

Request

[Table 5-58](#) describes the request parameters.

Table 5-58 Request parameters

Parameter	Mandatory	Type	Description
os-start	Yes	Null	Specifies the operation to start the ECS. The data structure is empty.

Response

None

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/action
{
  "os-start": {}
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.3.2 Restarting an ECS

Function

This API is used to restart a single ECS.

URI

POST /v2.1/{project_id}/servers/{server_id}/action

[Table 5-59](#) describes the parameters in the URI.

Table 5-59 Parameter description

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

Request

[Table 5-60](#) describes the request parameters.

Table 5-60 Request parameters

Parameter	Mandatory	Type	Description
reboot	Yes	Object	Specifies the operation to restart the ECS. For details, see Table 5-61 .

Table 5-61 reboot field description

Parameter	Mandatory	Type	Description
type	Yes	String	Specifies the type of the restart operation. <ul style="list-style-type: none">• SOFT: soft restart• HARD: forcible restart (hard restart)

Response

None

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/action
{
  "reboot": {
    "type": "SOFT"
  }
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.3.3 Stopping an ECS

Function

This API is used to stop a single ECS.

URI

POST /v2.1/{project_id}/servers/{server_id}/action

[Table 5-62](#) describes the parameters in the URI.

Table 5-62 Parameter description

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

Request

[Table 5-63](#) describes the request parameters.

Table 5-63 Request parameters

Parameter	Mandatory	Type	Description
os-stop	Yes	Object	Specifies the operation to stop the ECS. For details, see Table 5-64 .

Table 5-64 os-stop field description

Parameter	Mandatory	Type	Description
type	No	String	Specifies an ECS stop type. The default value is SOFT . <ul style="list-style-type: none">• SOFT: normal ECS stop• HARD: forcible ECS stop

Response

None

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/action
{
  "os-stop": {}
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.3.4 Locking an ECS

Function

This API is used to lock an ECS.

You are only allowed to lock your own ECSs. After ECSs are locked, you will not be able to perform management operations on them, including life cycle management, status management, NIC management, disk management, and password management.

URI

POST /v2.1/{project_id}/servers/{server_id}/action

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

Table 5-65 Parameter description

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

Request

[Table 5-66](#) describes the request parameters.

Table 5-66 Request parameters

Parameter	Type	Mandatory	Description
lock	Null	Yes	Locks an ECS.

Response

None

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/action
{
  "lock": null
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.3.5 Unlocking an ECS

Function

This API is used to unlock an ECS.

After an ECS is unlocked, common users are allowed to manage the ECS.

URI

POST /v2.1/{project_id}/servers/{server_id}/action

[Table 5-67](#) describes the parameters in the URI.

Table 5-67 Parameter description

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

Request

[Table 5-68](#) describes the request parameters.

Table 5-68 Request parameters

Parameter	Mandatory	Type	Description
unlock	Yes	Null	Unlocks an ECS.

Response

None

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/action
{
  "unlock": null
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.3.6 Creating an Image Using an ECS

Function

This API is used to create an image using an ECS. After the creation, you can use this image to create ECSs.

Images created using an ECS are stored on storage nodes as snapshots.

NOTE

This API is a native OpenStack API that is not applicable to the images on cloud service platform.

- To create a system disk image or data disk image, use the IMS API (**POST /v2/cloudimages/action**). For details, see "Creating an Image" in *Image Management Service API Reference*.
- To create a full-ECS image, use the IMS API (**POST /v1/cloudimages/wholeimages/action**). For details, see "Creating a Full-ECS Image" in *Image Management Service API Reference*.

Constraints

1. An ECS in the error state cannot be used to create an image.
2. If an image created using an ECS is used to create a new ECS, the new ECS must be located in the same AZ as the original ECS.
3. After an image created using an ECS is deleted, the associated snapshots will not be automatically deleted (this function is implemented by native OpenStack). You must manually delete such snapshots.
4. The image created using an ECS cannot be used to create data disks.
5. The images created using the API described in this section (URI: POST /v2/{project_id}/servers/{server_id}/action or POST /v2.1/{project_id}/servers/{server_id}/action) cannot be exported to OBS buckets. If such images must be exported, use the IMS API (**POST /v2/cloudimages/action**). For details, see "Creating an Image" in *Image Management Service API Reference*.

URI

POST /v2.1/{project_id}/servers/{server_id}/action

Table 5-69 describes the parameters in the URI.

Table 5-69 Parameter description

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

Request

Table 5-70 describes the request parameters.

Table 5-70 Request parameters

Parameter	Mandatory	Type	Description
createImage	Yes	Object	Specifies the image created using ECS. For details, see Table 5-71 .

Table 5-71 createImage field description

Parameter	Mandatory	Type	Description
name	Yes	String	Specifies the image name with a length greater than 0 bytes and less than 243 bytes.
metadata	No	Object	Specifies the image attribute with a length greater than 0 bytes and less than 255 bytes.

Response

Parameter	Mandatory	Type	Description
Location	Yes	String	Specifies the local URL of the image, which is returned in the request header. This parameter is not supported in microversion 2.44 and later.
image_id	Yes	String	Specifies the image UUID. This parameter is supported in microversion 2.45 and later.

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/action
{
  "createImage": {
    "name": "new-image-name",
    "metadata": {
      "ImageType": "Gold",
      "ImageVersion": "2.0"
    }
  }
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.3.7 Modifying the Specifications of an ECS

Function

This API is used to modify the specifications of an ECS.

For a running ECS, the system will automatically stop the ECS, copy the ECS data to the target node, which can be the source node, and then restart the ECS.

This API supports automatic rollback if the underlying resources are insufficient.

This API must be used with the API for verifying ECS specifications modification (POST /v2.1/{project_id}/servers/{server_id}/action) or the API for rolling back ECS specifications modification (POST /v2.1/{project_id}/servers/{server_id}/action) if an ECS is detected to be in **VERIFY_RESIZE** state and its **OS-EXT-STS:vm_state** is **RESIZED**.

To view application examples about ECS specifications modification, see [Modifying ECS Specifications](#).

URI

POST /v2.1/{project_id}/servers/{server_id}/action

[Table 5-72](#) describes the parameters in the URI.

Table 5-72 Parameter description

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

Request

[Table 5-73](#) describes the request parameters.

Table 5-73 Request parameters

Parameter	Mandatory	Type	Description
resize	Yes	Object	For details about how to modify ECS specifications, see Table 5-74 .

Table 5-74 resize field description

Parameter	Mandatory	Type	Description
flavorRef	Yes	String	Specifies the new flavor ID or URI.

Response

None

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/action
{
  "resize" : {
    "flavorRef" : "s3.medium.2"
  }
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.3.8 Confirming ECS Specifications Modification

Function

This API is used to confirm the specifications modification of an ECS.

Constraints

Before calling this API, ensure that the ECS status (which can be queried using the API for querying details about the ECS) meets the following requirements:

OS-EXT-STS:vm_state=resized

OS-EXT-STS:task_state=""

status=VERIFY_RESIZE

URI

POST /v2.1/{project_id}/servers/{server_id}/action

[Table 5-75](#) describes the parameters in the URI.

Table 5-75 Parameter description

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

Request

[Table 5-76](#) describes the request parameters.

Table 5-76 Request parameters

Parameter	Mandatory	Type	Description
confirmResize	Yes	Null	Confirms the modification to ECS specifications.

Response

None

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/action
{
  "confirmResize" : null
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.3.9 Rolling Back ECS Specifications Modification

Function

This API is used to roll back ECS specifications modification.

Constraints

After the rollback, the data modified during migration will be lost.

Before calling this API, ensure that the ECS status (which can be queried using the API for querying details about the ECS) meets the following requirements:

OS-EXT-STS:vm_state=resized

OS-EXT-STS:task_state=""

status=VERIFY_RESIZE

URI

POST /v2.1/{project_id}/servers/{server_id}/action

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

Table 5-77 Parameter description

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

Request

[Table 5-78](#) describes the request parameters.

Table 5-78 Request parameters

Parameter	Mandatory	Type	Description
revertResize	Yes	Null	Confirms the rollback of the ECS specification modification.

Response

None

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/action
{
  "revertResize" : null
}
```


Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.3.10 Adding an ECS to the Monitoring List

Function

This API is used to add an ECS to the monitoring list.

Ceilometer periodically collects monitoring data on the ECSs added to the monitoring list and reports the data to Cloud Eye. The data includes the platform version, CPU, memory, NICs, disks, and hardware version. For example, the plug-in of an SAP ECS periodically obtains monitoring data from Cloud Eye and reports the data to SAP in reports.

URI

POST /v1.0/servers/{server_id}/action

[Table 5-79](#) describes the parameters in the URI.

Table 5-79 Parameter description

Parameter	Mandatory	Description
server_id	Yes	Specifies the ECS ID.

Request

[Table 5-80](#) describes the request parameters.

Table 5-80 Request parameters

Parameter	Mandatory	Type	Description
monitorMetrics	Yes	Null	Enables monitoring on the ECS.

Response

None

Example Request

```
POST https://{endpoint}/v1.0/servers/{server_id}/action
```

```
{  
  "monitorMetrics" : null  
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

5.4 Network Management

5.4.1 Querying Networks

Function

This API is used to query the networks available to a tenant.

Constraints

You can query only the network ID and label (network name). Other fields are all null.

URI

GET /v2.1/{project_id}/os-networks

[Table 5-81](#) describes the parameters in the URI.

Table 5-81 Parameter description

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

Request

None

Response

Table 5-82 Parameter description

Parameter	Mandatory	Type	Description
networks	Yes	Array of objects	Specifies the network where the ECS accesses. For details, see Table 5-83 .

Table 5-83 Response parameters

Parameter	Mandatory	Type	Description
id	Yes	String	Specifies the network ID in UUID format.
label	Yes	String	Specifies the network name.
broadcast	Yes	String	The value can only be null.
cidr	Yes	String	The value can only be null.
cidr_v6	Yes	String	The value can only be null.
dns1	Yes	String	The value can only be null.
dns2	Yes	String	The value can only be null.
gateway	Yes	String	The value can only be null.
gateway_v6	Yes	String	The value can only be null.
netmask	Yes	String	The value can only be null.
netmask_v6	Yes	String	The value can only be null.
bridge	No	String	The value is fixed to be null and is in UUID format.

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/os-networks
```

Example Response

```
{
  "networks": [
    {
      "id": "04468f37-500a-4a80-88da-af823e7a1d6c",
      "cidr_v6": null,
      "gateway": null,
      "label": "network_demo1",
      "broadcast": null,

```

```
    "netmask": null,
    "cidr": null,
    "dns2": null,
    "gateway_v6": null,
    "netmask_v6": null,
    "dns1": null
  },
  {
    "id": "1fcff959-21d0-4ba8-976a-974cb564c977",
    "cidr_v6": null,
    "gateway": null,
    "label": "network_demo2",
    "broadcast": null,
    "netmask": null,
    "cidr": null,
    "dns2": null,
    "gateway_v6": null,
    "netmask_v6": null,
    "dns1": null
  }
]
```

Returned Values

See [Returned Values for General Requests](#).

5.4.2 Querying the Networks of a Specified ECS

Function

This API is used to query the networks of an ECS.

Constraints

None

URI

GET /v2.1/{project_id}/servers/{server_id}/ips

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

Table 5-84 Parameter description

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

Request

None

Response

[Table 5-85](#) describes the response parameters.

Table 5-85 Response parameters

Parameter	Mandatory	Type	Description
addresses	Yes	Object	Specifies the network address of the ECS. For details, see Table 5-86 .

Table 5-86 addresses parameter structure description

Parameter	Mandatory	Type	Description
Name of the network where the ECS accesses	Yes	Array of objects	Specifies the network where the ECS accesses. For details about the network parameter, see Table 5-87 .

Table 5-87 ECS network parameter structure description

Attribute	Type	CRUD	Default Value	Constraint	Remarks
version	Integer	R	N/A	4 or 6	Specifies the IP address version. The value of this parameter can be 4 or 6 .
addr	String	R	N/A	IP address format	Specifies the IP address.

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/servers/{server_id}/ips
```

Example Response

```
{
  "addresses": {
    "Name of the network where the ECS accesses": [
      {
        "version": 4,
        "addr": "10.176.42.16"
      },
      {
        "version": 6,
        "addr": "::babe:10.176.42.16"
      }
    ]
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.4.3 Querying the Specified Network of an ECS

Function

This API is used to query the specified network of an ECS.

Constraints

None

URI

GET /v2.1/{project_id}/servers/{server_id}/ips/{networkName}

[Table 5-88](#) describes the parameters in the URI.

Table 5-88 Path parameters

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

Table 5-89 Request parameters

Parameter	Mandatory	Type	Description
server_id	Yes	String	Specifies the ECS ID.
networkName	Yes	String	Specifies the ECS network name.

Request

None

Response

[Table 5-90](#) describes the response parameters.

Table 5-90 Response parameters

Parameter	Type	Description
Name of the network where the ECS accesses	List(Dict)	Specifies the network where the ECS accesses. For details about the network, see Table 5-91 .

Table 5-91 ECS network parameter structure description

Attribute	Type	CRUD	Default Value	Constraint	Remarks
version	Integer	R	N/A	4 or 6	Specifies the IP address version. The value of this parameter can be 4 or 6 .
addr	String	R	N/A	IP address format	Specifies the IP address.

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/servers/{server_id}/ips/{networkName}
```

Example Response

```
{
  "Name of the network where the ECS accesses": [
    {
      "version": 4,
      "addr": "10.0.0.4"
    },
    {
      "version": 4,
      "addr": "192.150.73.132"
    }
  ]
}
```

Returned Values

See [Returned Values for General Requests](#).

5.5 Security Group Management

5.5.1 Adding a Security Group

Function

This API is used to add an ECS to a security group.

You are suggested to add an ECS to a maximum of five security groups.

URI

POST /v2.1/{project_id}/servers/{server_id}/action

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

Table 5-92 Parameter description

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

Request

[Table 5-93](#) describes the request parameters.

Table 5-93 Request parameter

Parameter	Mandatory	Type	Description
addSecurityGroup	Yes	Object	Specifies the security group where the ECS is added. For details, see Table 5-94 .

Table 5-94 addSecurityGroup parameter description

Parameter	Mandatory	Type	Description
name	Yes	String	Specifies the UUID or name of the security group to which the ECS is added. The configuration takes effect for the NICs on the ECS.

Response

None

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/action
{
  "addSecurityGroup": {
    "name": "sg-test"
  }
}
```


Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.5.2 Deleting a Security Group

Function

This API is used to delete a security group for an ECS.

URI

POST /v2.1/{project_id}/servers/{server_id}/action

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

Table 5-95 Parameter description

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

Request

[Table 5-96](#) describes the request parameters.

Table 5-96 Request parameter

Parameter	Mandatory	Type	Description
removeSecurityGroup	Yes	Object	Specifies the security group to be deleted for an ECS. For details, see Table 5-97 .

Table 5-97 removeSecurityGroup parameter description

Parameter	Mandatory	Type	Description
name	Yes	String	Specifies the UUID or name of the security group from which the ECS is removed. The configuration takes effect for the NICs on the ECS.

Response

None

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/action
{
  "removeSecurityGroup": {
    "name": "sg-test"
  }
}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.5.3 Querying Security Groups for a Specified ECS

Function

This API is used to query security groups for a specified ECS.

URI

GET /v2.1/{project_id}/servers/{server_id}/os-security-groups

[Table 5-98](#) describes the parameters in the URI.

Table 5-98 Parameter description

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

Request

None

Response

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

Table 5-99 Response parameters

Parameter	Mandatory	Type	Description
security_groups	Yes	Array of objects	Specifies security groups. For details, see Table 5-100 .

Table 5-100 security_group objects

Parameter	Mandatory	Type	Description
description	Yes	String	Specifies information about a security group. It must contain 0 to 255 characters.
id	Yes	String	Specifies the security group ID in UUID format.
name	Yes	String	Specifies the security group name. It must contain 0 to 255 characters.
rules	Yes	Array of objects	Specifies security group rules. For details, see Table 5-101 .
tenant_id	Yes	String	Specifies the tenant or project ID.

Table 5-101 security_group_rule objects

Parameter	Mandatory	Type	Description
parent_group_id	Yes	String	Specifies the associated security group ID in UUID format.
ip_protocol	Yes	String	Specifies the protocol type or the IP protocol number. The value can be icmp , tcp , udp , or the IP protocol number.

Parameter	Mandatory	Type	Description
from_port	Yes	Integer	Specifies the start port number. The value ranges from 1 to 65,535 and cannot be greater than to_port . When ip_protocol is icmp , this parameter specifies a port type with a length from 0 to 255 characters.
to_port	Yes	Integer	Specifies the stop port number. The value ranges from 1 to 65,535 and cannot be less than from_port . When ip_protocol is icmp , it specifies the code. The value ranges from 0 to 255. If both from_port and to_port are -1 , any ICMP packet can be transmitted.
ip_range	Yes	Object	Specifies the peer IP segment in CIDR format. For details, see Table 5-102 . The value of ip_range or group must be empty.
group	Yes	Object	Specifies the name of the peer security group and the ID of the tenant in the peer security group. For details, see Table 5-103 . The value of ip_range or group must be empty.
id	Yes	String	Specifies the security group rule ID in UUID format.

Table 5-102 ip_range objects

Parameter	Mandatory	Type	Description
cidr	No	String	Specifies the peer IP segment in CIDR format.

Table 5-103 group objects

Parameter	Mandator y	Type	Description
tenant_id	No	String	Specifies the ID of the tenant of the peer security group.
name	No	String	Specifies the name of the peer security group.

Example Request

```
GET https://{endpoint}/v2.1/e73621affb8f44e1bc01898747ca09d4/servers/65fae4c2-3a09-46c6-af12-3b04f1fdb1e/os-security-groups
```

Example Response

```
{
  "security_groups": [
    {
      "rules": [
        {
          "from_port": null,
          "group": {
            "tenant_id": "bb1118612ba64af3a6ea63a1bdcaa5ae",
            "name": "default"
          },
          "ip_protocol": null,
          "to_port": null,
          "parent_group_id": "bc4ac1d1-dc77-4b7d-a97d-af86eb0dc450",
          "ip_range": {},
          "id": "bb3cc988-e06a-49f6-b668-600e8bf193ee"
        },
        {
          "from_port": null,
          "group": {
            "tenant_id": "bb1118612ba64af3a6ea63a1bdcaa5ae",
            "name": "default"
          },
          "ip_protocol": null,
          "to_port": null,
          "parent_group_id": "bc4ac1d1-dc77-4b7d-a97d-af86eb0dc450",
          "ip_range": {},
          "id": "f9371051-d7e1-4be4-8748-77b1e0913730"
        }
      ],
      "tenant_id": "bb1118612ba64af3a6ea63a1bdcaa5ae",
      "description": "default",
      "id": "bc4ac1d1-dc77-4b7d-a97d-af86eb0dc450",
      "name": "default"
    },
    {
      "rules": [
        {
          "from_port": 200,
          "group": {},
          "ip_protocol": "tcp",
          "to_port": 400,
          "parent_group_id": "b3e4b615-a40f-4e1c-92af-2e0d382141d5",
          "ip_range": {
            "cidr": "0.0.0.0/0"
          }
        }
      ],

```

```
    "id": "3330120d-bbd1-4a73-bda9-0196a84d5670"
  },
  {
    "from_port": 201,
    "group": {},
    "ip_protocol": "tcp",
    "to_port": 400,
    "parent_group_id": "b3e4b615-a40f-4e1c-92af-2e0d382141d5",
    "ip_range": {
      "cidr": "0.0.0.0/0"
    },
    "id": "b550c9a6-970a-462d-984e-265e88020818"
  }
],
"tenant_id": "bb1118612ba64af3a6ea63a1bdcaa5ae",
"description": "desc-sg",
"id": "b3e4b615-a40f-4e1c-92af-2e0d382141d5",
"name": "test-sg"
}
]
```

Returned Values

See [Returned Values for General Requests](#).

5.6 Flavor Management

5.6.1 Querying ECS Flavors

Function

This API is used to query available ECS flavors. After receiving the request, Nova uses nova-api to view the flavors from the database.

URI

GET /v2.1/{project_id}/flavors?
minDisk={minDisk}&minRam={minRam}&sort_key={sort_key}&sort_dir={sort_dir}

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

Table 5-104 Path parameters

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

NOTE

Pagination query is supported. For details, see [Querying Data in Pages](#).

Parameters in the following table can be used as URI parameters to filter query results. Usage: `/v2/{project_id}/flavors?minDisk={minDisk}&minRam={minRam}`

[Table 5-105](#) describes the query parameters.

Table 5-105 Query parameters

Parameter	Mandatory	Type	Description
minDisk	No	Integer	Specifies the minimum disk specification in the unit of GB. Only the ECSs with the disk specification greater than or equal to the minimum specification can be queried.
minRam	No	Integer	Specifies the minimum RAM in the unit of MB. Only the ECSs with the RAM specification greater than or equal to the minimum specification can be queried.
sort_key	No	String	Indicates a sorting field, the default value of which is flavorid . The value of this parameter can also be name , memory_mb , vcpus , root_gb , or flavorid .
sort_dir	No	String	Specifies the ascending (asc) or descending (desc) sorting. The default value is asc .

Request

None

Response

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

Table 5-106 Response parameters

Parameter	Type	Description
flavors	Array of objects	Specifies ECS flavors. For details, see Table 5-107 .
flavors_links	Array of objects	Specifies data links for querying the next pages in pagination query. For details, see Table 5-108 .

Table 5-107 flavors field description

Parameter	Type	Description
id	String	Specifies the flavor ID.
links	Array of objects	Specifies the shortcut link of the ECS flavor. For details, see Table 5-108 .
name	String	Specifies the flavor name.

Table 5-108 links field description

Parameter	Type	Description
rel	String	Specifies the shortcut link marker name.
href	String	Specifies the shortcut link.

Example Request

```
GET https://{endpoint}/v2.1/743b4c0428d94531b9f2add666642e6b/flavors
```

Example Response

```
{
  "flavors": [
    {
      "id": "c3.medium",
      "links": [
        {
          "href": "https://compute.region.xxx.com/v2.1/743b4c0428d94531b9f2add666642e6b/flavors/c3.medium",
          "rel": "self"
        },
        {
          "href": "https://compute.region.xxx.com/743b4c0428d94531b9f2add666642e6b/flavors/c3.medium",
          "rel": "bookmark"
        }
      ],
      "name": "c3.medium"
    },
    {
      "id": "c3.xlarge",
      "links": [
        {
          "href": "https://compute.region.xxx.com/v2.1/743b4c0428d94531b9f2add666642e6b/flavors/c3.xlarge",
          "rel": "self"
        },
        {
          "href": "https://compute.region.x.com/743b4c0428d94531b9f2add666642e6b/flavors/c3.xlarge",
          "rel": "bookmark"
        }
      ],
      "name": "c3.xlarge"
    }
  ]
}
```



```
]
}
```

Returned Values

See [Returned Values for General Requests](#).

5.6.2 Querying Details About ECS Flavors

Function

This API is used to query details about ECS flavors.

URI

GET /v2.1/{project_id}/flavors/detail?
minDisk={minDisk}&minRam={minRam}&sort_key={sort_key}&sort_dir={sort_dir}

[Table 5-109](#) describes the parameters in the URI.

Table 5-109 Path parameters

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

NOTE

Pagination query is supported. For details, see [Querying Data in Pages](#).

Table 5-110 Query parameters

Parameter	Mandatory	Type	Description
minDisk	No	String	Specifies the minimum disk specification in the unit of GB. Only the ECSs with the disk specification greater than or equal to the minimum specification can be queried.
minRam	No	String	Specifies the minimum RAM in the unit of MB. Only the ECSs with the RAM specification greater than or equal to the minimum specification can be queried.

Parameter	Mandatory	Type	Description
sort_key	No	String	Indicates a sorting field, the default value of which is flavorid . The value of this parameter can also be name , memory_mb , vcpus , root_gb , or flavorid .
sort_dir	No	String	Specifies the ascending (asc) or descending (desc) sorting. Options: asc and desc

Request

None

Response

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

Table 5-111 Response parameters

Parameter	Type	Description
flavors	Array of objects	Specifies ECS flavors. For details, see Table 5-112 .
flavors_links	Array of objects	Specifies data links for querying the next pages in pagination query. For details, see Table 5-113 .

Table 5-112 flavors field description

Parameter	Type	Description
id	String	Specifies the ID of the ECS flavor.
name	String	Specifies the name of the ECS flavor.
vcpus	Integer	Specifies the number of vCPUs in the ECS flavor.
ram	Integer	Specifies the memory size (MB) in the ECS flavor.
disk	Integer	Specifies the system disk size in the ECS flavor. This parameter has not been used. Its default value is 0 .
swap	String	Specifies the swap partition size required by the ECS flavor. This parameter has not been used. Its default value is "".

Parameter	Type	Description
OS-FLV-EXT-DATA:ephemeral	Integer	Specifies the temporary disk size. This is an extended attribute. This parameter has not been used. Its default value is 0 .
OS-FLV-DISABLED:disabled	Boolean	Specifies whether the ECS flavor has been disabled. This is an extended attribute. This parameter has not been used. Its default value is false .
rxtx_factor	Float	Specifies the ratio of the available network bandwidth to the network hardware bandwidth of the ECS. This parameter has not been used. Its default value is 1.0 .
os-flavor-access:is_public	Boolean	Specifies whether a flavor is available to all tenants. This is an extended attribute. <ul style="list-style-type: none">• true: indicates that a flavor is available to all tenants.• false: indicates that a flavor is available only to certain tenants. Default value: true
links	Array of objects	Specifies shortcut links for ECS flavors. For details, see Table 5-113 .

Table 5-113 links field description

Parameter	Type	Description
rel	String	Specifies the shortcut link marker name.
href	String	Provides the corresponding shortcut link.

Example Request

```
GET https://{endpoint}/v2.1/743b4c0428d94531b9f2add666642e6b/flavors/detail
```

Example Response

```
{
  "flavors": [
    {
      "name": "c3.2xlarge.2",
      "links": [
        {
          "href": "https://compute.region.xxx.com/v2.1/743b4c0428d94531b9f2add666642e6b/flavors/c3.2xlarge.2",
          "rel": "self"
        }
      ]
    }
  ]
}
```

```
    {
      "href": "https://compute.region.xxx.com/743b4c0428d94531b9f2add666642e6b/flavors/
c3.2xlarge.2",
      "rel": "bookmark"
    }
  ],
  "ram": 16384,
  "OS-FLV-DISABLED:disabled": false,
  "vcpus": 8,
  "swap": "",
  "os-flavor-access:is_public": true,
  "rxtx_factor": 1,
  "OS-FLV-EXT-DATA:ephemeral": 0,
  "disk": 0,
  "id": "c3.2xlarge.2"
},
{
  "name": "c3.2xlarge.4",
  "links": [
    {
      "href": "https://compute.region.xxx.com/v2.1/743b4c0428d94531b9f2add666642e6b/flavors/
c3.2xlarge.4",
      "rel": "self"
    },
    {
      "href": "https://compute.region.xxx.com/743b4c0428d94531b9f2add666642e6b/flavors/
c3.2xlarge.4",
      "rel": "bookmark"
    }
  ],
  "ram": 32768,
  "OS-FLV-DISABLED:disabled": false,
  "vcpus": 8,
  "swap": "",
  "os-flavor-access:is_public": true,
  "rxtx_factor": 1,
  "OS-FLV-EXT-DATA:ephemeral": 0,
  "disk": 0,
  "id": "c3.2xlarge.4"
}
]
```

Returned Values

See [Returned Values for General Requests](#).

5.6.3 Querying Details About an ECS Flavor

Function

This API is used to query the details about an ECS flavor based on the flavor ID.

URI

GET /v2.1/{project_id}/flavors/{flavor_id}

[Table 5-114](#) describes the parameters in the URI.

Table 5-114 Parameter description

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

Request

None

Response

[Table 5-115](#) describes the response parameters.

Table 5-115 Response parameters

Parameter	Type	Description
flavor	Object	Specifies the ECS flavor. For details, see Table 5-116 .

Table 5-116 flavor field description

Parameter	Type	Description
id	String	Specifies the ID of the ECS flavor.
name	String	Specifies the name of the ECS flavor.
vcpus	Integer	Specifies the number of vCPUs in the ECS flavor.
ram	Integer	Specifies the memory size (MB) in the ECS flavor.
disk	Integer	Specifies the system disk size in the ECS flavor. This parameter has not been used. Its default value is 0 .
swap	String	Specifies the swap partition size required by the ECS flavor. This parameter has not been used. Its default value is "".
OS-FLV-EXT-DATA:ephemeral	Integer	Specifies the temporary disk size. This is an extended attribute. This parameter has not been used. Its default value is 0 .

Parameter	Type	Description
OS-FLV-DISABLED:disabled	Boolean	Specifies whether the ECS flavor has been disabled. This is an extended attribute. This parameter has not been used. Its default value is false .
rxtx_factor	Float	Specifies the ratio of the available network bandwidth to the network hardware bandwidth of the ECS. This parameter has not been used. Its default value is 1.0 .
os-flavor-access:is_public	Boolean	Specifies whether a flavor is available to all tenants. This is an extended attribute. <ul style="list-style-type: none">• true: indicates that a flavor is available to all tenants.• false: indicates that a flavor is available only to certain tenants. Default value: true
links	Array of objects	Specifies shortcut links for ECS flavors. For details, see Table 5-117 .

Table 5-117 links field description

Parameter	Type	Description
rel	String	Specifies the shortcut link marker name.
href	String	Provides the corresponding shortcut link.

Example Request

```
GET https://{endpoint}/v2.1/743b4c0428d94531b9f2add666642e6b/flavors/c3.2xlarge.2
```

Example Response

```
{
  "flavor": {
    "name": "c3.2xlarge.2",
    "links": [
      {
        "href": "https://compute.region.xxx.com/v2.1/743b4c0428d94531b9f2add666642e6b/flavors/c3.2xlarge.2",
        "rel": "self"
      },
      {
        "href": "https://compute.region.xxx.com/743b4c0428d94531b9f2add666642e6b/flavors/c3.2xlarge.2",
        "rel": "bookmark"
      }
    ],
    "ram": 16384,
  }
}
```

```
"OS-FLV-DISABLED:disabled": false,
"vcpus": 8,
"swap": "",
"os-flavor-access:is_public": true,
"rxtx_factor": 1,
"OS-FLV-EXT-DATA:ephemeral": 0,
"disk": 0,
"id": "c3.2xlarge.2"
}
}
```

Returned Values

See [Returned Values for General Requests](#).

5.6.4 Querying the extra_specs Value for an ECS Flavor

Function

This API is used to query the **extra_specs** value for a specified ECS flavor.

URI

GET /v2.1/{project_id}/flavors/{flavor_id}/os-extra_specs

[Table 5-118](#) describes the parameters in the URI.

Table 5-118 Parameter description

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

Request

None

Response

[Table 5-119](#) describes the response parameters.

Table 5-119 Response parameters

Parameter	Type	Description
extra_specs	Map<String,String>	Specifies the key-value pair of an ECS flavor. For details about the returned fields, see the os_extra_specs field description in Table 4-85 .

Example Request

```
GET https://{endpoint}/v2.1/743b4c0428d94531b9f2add666642e6b/flavors/c3.2xlarge.2/os-extra_specs
```

Example Response

```
{
  "extra_specs": {
    "ecs:performancetype": "computingv3",
    "resource_type": "IOptimizedC3_2"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.7 NIC Management

5.7.1 Querying ECS NICs

Function

This API is used to query information about ECS NICs.

URI

```
GET /v2.1/{project_id}/servers/{server_id}/os-interface
```

[Table 5-120](#) describes the parameters in the URI.

Table 5-120 Parameter description

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

Request

None

Response

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

Table 5-121 Response parameters

Parameter	Type	Description
interfaceAttachments	Array of objects	Specifies ECS NICs. For details, see Table 5-122 .

Table 5-122 interfaceAttachments field description

Parameter	Type	Description
port_state	String	Specifies the NIC port status.
fixed_ips	Array of objects	Specifies private IP addresses for NICs. For details, see Table 5-123 .
net_id	String	Specifies the network ID to which the NIC port belongs.
port_id	String	Specifies the ID of the NIC port.
mac_addr	String	Specifies the MAC address of the NIC.

Table 5-123 fixed_ips field description

Parameter	Type	Description
subnet_id	String	Specifies the subnet of the NIC private IP address.
ip_address	String	Specifies the NIC private IP address.

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/servers/{server_id}/os-interface
```

Example Response

```
{
  "interfaceAttachments": [
    {
      "port_state": "ACTIVE",
      "fixed_ips": [
        {
          "subnet_id": "f8a6e8f8-c2ec-497c-9f23-da9616de54ef",
          "ip_address": "192.168.1.3"
        }
      ]
    }
  ]
}
```

```
    }  
  ],  
  "net_id": "3cb9bc59-5699-4588-a4b1-b87f96708bc6",  
  "port_id": "ce531f90-199f-48c0-816c-13e38010b442",  
  "mac_addr": "fa:16:3e:4c:2c:30"  
  }  
  ]  
}
```

Returned Values

See [Returned Values for General Requests](#).

5.7.2 Querying NICs of an ECS

Function

This API is used to query NICs of an ECS based on the NIC ID.

URI

GET /v2.1/{project_id}/servers/{server_id}/os-interface/{id}

[Table 5-124](#) describes the parameters in the URI.

Table 5-124 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the ID, see Obtaining a Project ID .
server_id	Yes	Specifies the ECS ID.
id	Yes	Specifies the port ID of the NIC.

Request

None

Response

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

Table 5-125 Response parameters

Parameter	Type	Description
interfaceAttachment	Object	Specifies ECS NICs. For details, see Table 5-126 .

Table 5-126 interfaceAttachment field description

Parameter	Type	Description
port_state	String	Specifies the NIC port status.
fixed_ips	Array of objects	Specifies IP addresses for NICs. For details, see Table 5-127 .
net_id	String	Specifies the network ID to which the NIC port belongs.
port_id	String	Specifies the ID of the NIC port.
mac_addr	String	Specifies the MAC address of the NIC.

Table 5-127 fixed_ips field description

Parameter	Type	Description
subnet_id	String	Specifies the ID of the subnet used by the NIC.
ip_address	String	Specifies the NIC IP address.

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/servers/{server_id}/os-interface/{id}
```

Example Response

```
{
  "interfaceAttachment":
  {
    "port_state": "ACTIVE",
    "fixed_ips": [
      {
        "subnet_id": "f8a6e8f8-c2ec-497c-9f23-da9616de54ef",
        "ip_address": "192.168.1.3"
      }
    ],
    "net_id": "3cb9bc59-5699-4588-a4b1-b87f96708bc6",
    "port_id": "ce531f90-199f-48c0-816c-13e38010b442",
    "mac_addr": "fa:16:3e:4c:2c:30"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.7.3 Adding a NIC to an ECS

Function

This API is used to add a NIC to an ECS.

To view application examples about ECS NIC applications, see [Attaching a NIC to an ECS](#).

URI

POST /v2.1/{project_id}/servers/{server_id}/os-interface

[Table 5-128](#) describes the parameters in the URI.

Table 5-128 Parameter description

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

Request

[Table 5-129](#) describes the request parameters.

Table 5-129 Request parameters

Parameter	Mandatory	Type	Description
interfaceAttachment	Yes	Object	Specifies the NICs to be added. For details, see Table 5-130 .

Table 5-130 interfaceAttachment field description

Parameter	Mandatory	Type	Description
port_id	No	String	Specifies the port ID. Either port_id or net_id is used each time.
net_id	No	String	Specifies the network ID. Either port_id or net_id is used each time.

Parameter	Mandatory	Type	Description
fixed_ips	No	Array of objects	Specifies a private IP address. This parameter cannot be specified when port_id is used. This parameter must be used with net_id . Only the first element in the list is valid. If two or more elements are used, an error will be reported. For details, see Table 5-131 .

Table 5-131 fixed_ips field description

Parameter	Mandatory	Type	Description
ip_address	No	String	Specifies the IP address.

Response

[Table 5-132](#) describes the response parameters.

Table 5-132 Response parameters

Parameter	Type	Description
interfaceAttachment	Object	Specifies ECS NICs. For details, see Table 5-133 .

Table 5-133 interfaceAttachment field description

Parameter	Type	Description
port_state	String	Specifies the port state.
fixed_ips	Array of objects	Specifies IP addresses for NICs. For details, see Table 5-134 .
port_id	String	Specifies the port ID.
net_id	String	Specifies the network ID.
mac_addr	String	Specifies the MAC address.

Table 5-134 fixed_ips field description

Parameter	Type	Description
subnet_id	String	Specifies the ID of the subnet used by the NIC.
ip_address	String	Specifies the NIC IP address.

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/os-interface
{
  "interfaceAttachment" : {
    "fixed_ips" : [
      {
        "ip_address" : "192.168.1.3"
      }
    ],
    "net_id" : "3cb9bc59-5699-4588-a4b1-b87f96708bc6"
  }
}
{
  "interfaceAttachment" : {
    "port_id" : "ce531f90-199f-48c0-816c-13e38010b442"
  }
}
```

Example Response

```
{
  "interfaceAttachment": {
    "port_state": "DOWN",
    "fixed_ips": [
      {
        "subnet_id": "d9cfef77-0151-4c2a-9ed5-d951ada8adf3",
        "ip_address": "10.0.1.11"
      }
    ],
    "port_id": " ce531f90-199f-48c0-816c-13e38010b442",
    "net_id": "0dc714fa-9022-4a03-bb22-9821a396bb9d",
    "mac_addr": "fa:16:3e:63:75:b2"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.7.4 Deleting a NIC from an ECS

Function

This API is used to delete a NIC from an ECS based on the port ID.

Constraints

The primary NIC of an ECS has routing rules configured and cannot be deleted.

When an ECS NIC is detached, the NIC that is attached to the ECS and specified by **port_id** through the OpenStack Nova API will be retained, and the NIC specified by **net_id** will be deleted.

URI

DELETE /v2.1/{project_id}/servers/{server_id}/os-interface/{port_id}

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

Table 5-135 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the ID, see Obtaining a Project ID .
server_id	Yes	Specifies the ECS ID.
port_id	Yes	Specifies the port ID of the NIC. NOTE When the ID is the same as the ECS primary NIC ID, the system will return error code 403.

Request

None

Response

None

Example Request

```
DELETE https://{endpoint}/v2.1/{project_id}/servers/{server_id}/os-interface/{port_id}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.8 Disk Management

5.8.1 Querying Disks Attached to an ECS

Function

This API is used to query the disks attached to an ECS.

URI

GET /v2.1/{project_id}/servers/{server_id}/os-volume_attachments

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

Table 5-136 Parameter description

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

Request

None

Response

Response parameters

[Table 5-137](#) describes the response parameters.

Table 5-137 Response parameters

Parameter	Type	Description
volumeAttachments	Array of objects	Specifies the disks attached to an ECS. For details, see Table 5-138 .

Table 5-138 volumeAttachments field description

Parameter	Type	Description
device	String	Specifies the attached directory.
id	String	Specifies the ID of the attached resource.
serverId	String	Specifies the ECS ID.
volumeId	String	Specifies the ID of the attached disk.

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/servers/{server_id}/os-volume_attachments
```

Example Response

```
{
  "volumeAttachments": [
    {
      "device": "/dev/sdd",
      "id": "a26887c6-c47b-4654-abb5-dfadf7d3f803",
      "serverId": "4d8c3732-a248-40ed-bebc-539a6ffd25c0",
      "volumeId": "a26887c6-c47b-4654-abb5-dfadf7d3f803"
    },
    {
      "device": "/dev/sdc",
      "id": "a26887c6-c47b-4654-abb5-dfadf7d3f804",
      "serverId": "4d8c3732-a248-40ed-bebc-539a6ffd25c0",
      "volumeId": "a26887c6-c47b-4654-abb5-dfadf7d3f804"
    }
  ]
}
```

Returned Values

See [Returned Values for General Requests](#).

5.8.2 Querying a Disk Attached to an ECS

Function

This API is used to query a disk attached to an ECS based on the disk ID.

URI

```
GET /v2.1/{project_id}/servers/{server_id}/os-volume_attachments/{volume_id}
```

[Table 5-139](#) describes the parameters in the URI.

Table 5-139 Parameter description

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

Request

None

Response

[Table 5-140](#) describes the response parameters.

Table 5-140 Response parameters

Parameter	Type	Description
volumeAttachment	Object	Specifies the disks attached to an ECS. For details, see Table 5-141 .

Table 5-141 volumeAttachment field description

Parameter	Type	Description
device	String	Specifies the attached directory.
id	String	Specifies the ID of the attached resource.
serverId	String	Specifies the ECS ID.
volumeId	String	Specifies the ID of the attached disk.

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/servers/{server_id}/os-volume_attachments/{volume_id}
```

Example Response

```
{
  "volumeAttachment":
  {
    "device": "/dev/sdd",
    "id": "a26887c6-c47b-4654-abb5-dfadf7d3f803",
    "serverId": "4d8c3732-a248-40ed-bebc-539a6ffd25c0",
    "volumeId": "a26887c6-c47b-4654-abb5-dfadf7d3f803"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.8.3 Attaching a Disk to an ECS

Function

This API is used to attach a disk to an ECS.

To view application examples about ECS disk attachment, see [Attaching a Disk to an ECS](#).

Constraints

1. If you attach a bootable disk to an ECS, you must specify the disk drive letter.
2. A disk created using a backup cannot be attached to an ECS as the system disk.
3. An ECS in the **SUSPENDED** or **PAUSED** state, which is specified using the **OS-EXT-STS:vm_state** parameter of the ECS, cannot have a disk attached.
4. The EVS must be in the **available** status.
5. The EVS disk and the target ECS must be located in the same AZ.
6. VBD EVS disks cannot be attached to BMSs.

URI

POST /v2.1/{project_id}/servers/{server_id}/os-volume_attachments

[Table 5-142](#) describes the parameters in the URI.

Table 5-142 Parameter description

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

Request

[Table 5-143](#) describes the request parameters.

Table 5-143 Request parameters

Parameter	Mandatory	Type	Description
volumeAttachment	Yes	Object	Specifies the volumes to be attached. For details, see Table 5-144 .

Table 5-144 volumeAttachment field description

Parameter	Mandatory	Type	Description
volumeld	Yes	String	Specifies the ID of the disk to be attached. The value is in UUID format.

Parameter	Mandatory	Type	Description
device	No	String	<p>Specifies the device name, such as /dev/sda or /dev/sdb.</p> <p>The new disk device name cannot be the same as an existing one.</p> <p>The device name must be specified based on the sequence of existing device names. Otherwise, the system automatically generates one.</p> <p>NOTE VBD disk device names can only be /dev/vdb through /dev/vdx. You are advised to attach the VBD disks in alphabetical order. Otherwise, the disk drive letters may be incorrect on the ECS.</p>

Response

[Table 5-145](#) describes the response parameters.

Table 5-145 Response parameters

Parameter	Type	Description
volumeAttachment	Object	Specifies the disks attached to an ECS. For details, see Table 5-146 .

Table 5-146 volumeAttachment field description

Parameter	Type	Description
device	String	Specifies the device name.
serverId	String	Specifies the ID of the target ECS in UUID format.
id	String	Specifies the disk ID in UUID format.
volumeId	String	Specifies the attaching ID, which is the same as the UUID.

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/os-volume_attachments
{
  "volumeAttachment": {
    "volumeId": "54667652-3029-4af8-9222-2d53066fd61c",
    "device": "/dev/sdb"
  }
}
```

Example Response

```
{
  "volumeAttachment": {
    "device": "/dev/vdb",
    "serverId": "ab258e25-e351-47c7-b6e3-0749c5d9ed6a",
    "id": "54667652-3029-4af8-9222-2d53066fd61c",
    "volumeId": "54667652-3029-4af8-9222-2d53066fd61c"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.8.4 Detaching a Disk from an ECS

Function

This API is used to detach a disk from an ECS.

Constraints

The system disk, the device name of which is **/dev/sda**, and user disks can be detached from an ECS only when the ECS is stopped. There are no requirements on UVP VMTools.

When an ECS is in the **active** state, pay attention to the following constraints:

1. Only data disks, the device name of which is not **/dev/sda**, can be detached from an ECS.
2. Make sure that UVP VMTools have been installed and enabled on the ECS. Otherwise, the uninstallation will fail.
3. For a Linux ECS, you need to log in to the ECS and run the **umount** command to disassociate the target disk from the file system. In addition, you need to ensure that no data is being written into or being read from the disk. Otherwise, the detachment will fail.
4. OSs supporting EVS disk detachment from a running ECS include two parts:
 - For the first part, see [External Image File Formats and Supported OSs](#).
 - [Table 5-147](#) lists the second part of supported OSs.

Table 5-147 OSs supporting EVS disk detachment from a running ECS

OS	Version
CentOS	7.3 64bit
	7.2 64bit
	6.8 64bit
	6.7 64bit
Ubuntu Server	16.04 64bit

OS	Version
	14.04 64bit
	14.04.4 64bit

5. The forcible online disk detach function supports only VBD disks used by KVM ECSs.
For other types of disks used by Xen ECSs, BMSs, and KVM ECSs, this API supports only online disk detachment.
6. Disks which are forcibly detached online will use the disk drives and PCI addresses. Therefore, the disk drives and PCI addresses will not be assigned again.
7. After a disk is forcibly detached, it still occupies the disk quota of the ECS.
8. The system disk cannot be detached forcibly online.
9. When a file system is attached to a disk and the disk is detached forcibly online, users need to manually detach all file systems attached to the disk.
10. If logical partitions are created on the disk which is detached forcibly online, the logical partitions will become invalid.
11. After a disk is forcibly detached, you need to restart the ECS to clear the residual.

URI

DELETE /v2.1/{project_id}/servers/{server_id}/os-volume_attachments/{volume_id}{?delete_flag}

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

Table 5-148 Parameter description

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

Usage: DELETE /v2.1/{project_id}/servers/{server_id}/os-volume_attachments/{volume_id}?delete_flag=1

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

Table 5-149 Query parameters

Parameter	Mandatory	Type	Description
delete_flag	No	Integer	Specifies whether to support forcible online disk detachment. The default value is 0 . 1 indicates that the disk can be forcibly detached online.

Request

None

Response

None

Example Request

```
DELETE https://{endpoint}/v2.1/6f9e9263116a4b68818cf1edce16bc4f/servers/ab258e25-e351-47c7-b6e3-0749c5d9ed6a/os-volume_attachments/54667652-3029-4af8-9222-2d53066fd61c
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.9 Metadata Management

5.9.1 Updating ECS Metadata

Function

This API is used to update ECS metadata.

- If the metadata does not contain the target field, the field is automatically added.
- If the metadata contains the target field, the field value is automatically updated.
- If the field in the metadata is not requested, the field value remains unchanged.

Constraints

An ECS must be in active, stopped, paused, or suspended state, which is specified by **OS-EXT-STS:vm_state**.

URI

POST /v2.1/{project_id}/servers/{server_id}/metadata

Table 5-150 describes the parameters in the URI.

Table 5-150 Parameter description

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

Request

Table 5-151 describes the request parameters.

Table 5-151 Request parameters

Parameter	Mandatory	Type	Description
metadata	Yes	Object	Specifies the user-defined metadata key-value pair. For a metadata key: It contains a maximum of 255 Unicode characters and cannot be left blank. A key can contain uppercase letters (A-Z), lowercase letters (a-z), digits (0-9), hyphens (-), underscores (_), colons (:), and periods (.). For a metadata value: A value contains a maximum of 255 Unicode characters.

Response

Table 5-152 describes the response parameters.

Table 5-152 Response parameters

Parameter	Type	Description
metadata	Object	Specifies the user-defined metadata key-value pair.

Example Request

```
POST https://{endpoint}/v2.1/{project_id}/servers/{server_id}/metadata
{
  "metadata": {
    "key": "value"
  }
}
```

Example Response

```
{
  "metadata": {
    "key": "value"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.9.2 Configuring ECS Metadata

Function

This API is used to configure ECS metadata.

When you call this API, all the metadata of this ECS will be deleted, and the ECS uses the value configured in the request.

Constraints

An ECS must be in active, stopped, paused, or suspended state, which is specified by **OS-EXT-STS:vm_state**.

URI

```
PUT /v2.1/{project_id}/servers/{server_id}/metadata
```

[Table 5-153](#) describes the parameters in the URI.

Table 5-153 Parameter description

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

Parameter	Mandatory	Description
server_id	Yes	Specifies the ECS ID.

Request

[Table 5-154](#) describes the request parameters.

Table 5-154 Request

Parameter	Type	Mandatory	Description
metadata	Object	Yes	Specifies the user-defined metadata key-value pair. For a metadata key: A key contains a maximum of 255 Unicode characters and cannot be empty. A key can contain uppercase letters (A-Z), lowercase letters (a-z), digits (0-9), hyphens (-), underscores (_), colons (:), and periods (.). For a metadata value: A value contains a maximum of 255 Unicode characters.

Response

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

Table 5-155 Response parameters

Parameter	Type	Description
metadata	Object	Specifies the user-defined metadata key-value pair.

Example Request

```
PUT https://{endpoint}/v2.1/{project_id}/servers/{server_id}/metadata
{
  "metadata": {
    "key1": "value1",
    "key2": "value2"
  }
}
```

Example Response

```
{
  "metadata": {
    "key1": "value1",
    "key2": "value2"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.9.3 Deleting Specified ECS Metadata

Function

This API is used to delete specified ECS metadata.

Constraints

An ECS must be in active, stopped, paused, or suspended state, which is specified by **OS-EXT-STS:vm_state**.

URI

DELETE /v2.1/{project_id}/servers/{server_id}/metadata/{key}

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

Table 5-156 Parameter description

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

Request

None

Response

None

Example Request

```
DELETE https://{endpoint}/v2.1/{project_id}/servers/{server_id}/metadata/{key}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.9.4 Querying ECS Metadata

Function

This API is used to query ECS metadata.

URI

GET /v2.1/{project_id}/servers/{server_id}/metadata

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

Table 5-157 Parameter description

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

NOTE

Pagination query is not supported.

Request

None

Response

[Table 5-158](#) describes the response parameters.

Table 5-158 Response parameters

Parameter	Mandatory	Type	Description
metadata	Yes	Object	Specifies the user-defined metadata key-value pair.

Example Request

```
GET https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/servers/998af54b-5762-4041-abc1-f98a2c27b3a2/metadata
```

Example Response

```
{
  "metadata": {
    "wj": "True"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.9.5 Obtaining ECS Metadata with a Specified Key

Function

This API is used to obtain ECS metadata with a specified key.

URI

```
GET /v2.1/{project_id}/servers/{server_id}/metadata/{key}
```

[Table 5-159](#) describes the parameters in the URI.

Table 5-159 Parameter description

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

Request

None

Response

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

Table 5-160 Response parameters

Parameter	Type	Description
meta	Object	Specifies the user-defined metadata key-value pair.

Example Request

```
GET https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/servers/998af54b-5762-4041-abc1-f98a2c27b3a2/metadata/key1
```

Example Response

```
{
  "meta": {
    "key1": "value1"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.9.6 Modifying ECS Metadata with a Specified Key

Function

This API is used to modify the ECS metadata with a specified key.

- If the metadata does not contain the target field, the field is automatically added.
- If the metadata contains the target field, the field value is automatically updated.

Constraints

An ECS must be in active, stopped, paused, or suspended state, which is specified by **OS-EXT-STS:vm_state**.

URI

```
PUT /v2.1/{project_id}/servers/{server_id}/metadata/{key}
```

[Table 5-161](#) describes the parameters in the URI.

Table 5-161 Parameter description

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

Request

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

Table 5-162 Request parameters

Parameter	Mandatory	Type	Description
meta	Yes	Object	Specifies the user-defined metadata key pair. For a metadata key: It contains a maximum of 255 Unicode characters and cannot be left blank. A key can contain uppercase letters (A-Z), lowercase letters (a-z), digits (0-9), hyphens (-), underscores (_), colons (:), and periods (.). For a metadata value: It contains a maximum of 255 Unicode characters.

Response

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

Table 5-163 Response parameters

Parameter	Type	Description
meta	Object	Specifies the user-defined metadata key-value pair.

Example Request

```
PUT https://{endpoint}/v2.1/{project_id}/servers/{server_id}/metadata/{key}
{
  "meta":{
```

```
    "key": "value"  
  }  
}
```

Example Response

```
{  
  "meta": {  
    "key": "value"  
  }  
}
```

Returned Values

See [Returned Values for General Requests](#).

5.10 Tenant Quota Management

5.10.1 Querying Tenant Quota Limits

Function

This API is used to query tenant quota limits.

Tenants are only allowed to query their own quota limits.

URI

GET /v2.1/{project_id}/limits?project_id={project_id}

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

Table 5-164 Parameter description

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

Request

None

Response

[Table 5-165](#) describes the response parameters.

Table 5-165 Response parameters

Parameter	Type	Description
limits	Object	Specifies tenant limits. For details, see Table 5-166 .

Table 5-166 limits parameter information

Parameter	Type	Description
rate	List	The value is empty.
absolute	Object	Specifies tenant quota limits. For details, see Table 5-167 .

Table 5-167 absolute parameter information

Parameter	Type	Description
maxServerMeta	String	Specifies the limit of ECS metadata quantity. If the value is -1 , there is no quantity limit.
maxPersonality	String	Specifies the quantity limit of injected files. If the value is -1 , there is no quantity limit.
totalServerGroupsUsed	String	Specifies the number of used ECS groups.
maxImageMeta	String	Specifies the limit of the image metadata quantity. If the value is -1 , there is no quantity limit.
maxPersonalitySize	String	Specifies the size limit of injected files. If the value is -1 , there is no size limit.
maxTotalRAMSize	String	Specifies the total memory size limit. If the value is -1 , there is no size limit.

Parameter	Type	Description
maxTotalKeypairs	String	Specifies the limit of key pair quantity. If the value is -1 , there is no quantity limit.
maxSecurityGroupRules	String	Specifies the maximum number of security group rules. If the value is -1 , there is no quantity limit. This parameter is not supported in microversion 2.35 and later.
maxServerGroups	String	Specifies the maximum number of ECS groups. If the value is -1 , there is no quantity limit.
totalCoresUsed	String	Specifies the number of used cores.
totalRAMUsed	String	Specifies the size of used memory.
maxSecurityGroups	String	Specifies the maximum number of security groups. If the value is -1 , there is no quantity limit.
totalFloatingIpsUsed	String	Specifies the number of used floating IP addresses.
totalInstancesUsed	String	Specifies the number of used ECSs.
totalSecurityGroupsUsed	String	Specifies the number of used security groups.
maxTotalFloatingIps	String	Specifies the maximum number of floating IP addresses. If the value is -1 , there is no quantity limit.
maxTotalInstances	String	Specifies the maximum number of ECSs. If the value is -1 , there is no quantity limit.
maxTotalCores	String	Specifies the maximum number of cores. If the value is -1 , there is no quantity limit.

Parameter	Type	Description
maxServerGroupMembers	String	Specifies the maximum number of members in an ECS group. If the value is -1 , there is no quantity limit.

Example Request

```
GET https://{endpoint}/v2.1/d9ebe43510414ef590a4aa158605329e/limits
```

Example Response

```
{
  "limits": {
    "rate": [],
    "absolute": {
      "maxServerMeta": 128,
      "maxPersonality": 5,
      "totalServerGroupsUsed": 0,
      "maxImageMeta": 128,
      "maxPersonalitySize": 10240,
      "maxTotalRAMSize": 25165824,
      "maxTotalKeypairs": -1,
      "maxSecurityGroupRules": 20,
      "maxServerGroups": -1,
      "totalCoresUsed": 0,
      "totalRAMUsed": 0,
      "maxSecurityGroups": 10,
      "totalFloatingIpsUsed": 0,
      "totalInstancesUsed": 0,
      "totalSecurityGroupsUsed": 0,
      "maxTotalFloatingIps": 10,
      "maxTotalInstances": 2048,
      "maxTotalCores": 20480,
      "maxServerGroupMembers": -1
    }
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.10.2 Querying Tenant Quotas

Function

This API is used to query quotas, including ECSs, vCPUs, and memory.

This API provides the **user_id** parameter for obtaining the quota configuration of a specified user.

URI

```
GET /v2.1/{project_id}/os-quota-sets/{project_id}?user_id={user_id}
```

[Table 5-168](#) describes the parameters in the URI.

Table 5-168 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. If the specified project does not exist, the default quota in the system is returned.
user_id	No	Specifies the user ID. If the specified user does not exist, the default quota in the system is returned.

Request

None

Response

[Table 5-169](#) describes the response parameters.

Table 5-169 Response parameters

Parameter	Type	Description
quota_set	Object	Specifies the quota_set object. For details, see Table 5-170 .

Table 5-170 **quota_set** parameter description

Parameter	Type	Description
cores	Integer	Specifies the quantity quota of vCPUs.
fixed_ips	Integer	Specifies the quantity quota of fixed IP addresses. This parameter is not supported.
floating_ips	Integer	Specifies the quantity quota of floating IP addresses. This parameter is not supported.
id	String	Specifies the project UUID.
injected_file_content_bytes	Integer	Specifies the size quota (bytes) of the files to be injected.
injected_file_path_bytes	Integer	Specifies the size quota (bytes) of the path for the files to be injected.

Parameter	Type	Description
injected_files	Integer	Specifies the quantity quota of the files to be injected.
instances	Integer	Specifies the quantity quota of ECSs.
key_pairs	Integer	Specifies the quantity quota of key pairs. This parameter is not supported.
metadata_items	Integer	Specifies the metadata quantity quota.
ram	Integer	Specifies the memory quota (MB).
security_group_rules	Integer	Specifies the quota of security group rules. This parameter is not supported.
security_groups	Integer	Specifies the quantity quota of security groups. This parameter is not supported.
server_groups	Integer	Specifies the quantity quota of ECS groups.
server_group_members	Integer	Specifies the size quota of ECS groups.

Example Request

```
GET https://{endpoint}/v2.1/d9ebe43510414ef590a4aa158605329e/os-quota-sets/  
d9ebe43510414ef590a4aa158605329e
```

Example Response

```
{  
  "quota_set": {  
    "cores": 20,  
    "fixed_ips": 40,  
    "floating_ips": 10,  
    "id": "d9ebe43510414ef590a4aa158605329e",  
    "injected_file_content_bytes": 10240,  
    "injected_file_path_bytes": 255,  
    "injected_files": 5,  
    "instances": 20,  
    "key_pairs": 100,  
    "metadata_items": 128,  
    "ram": 51200,  
    "security_group_rules": 20,  
    "security_groups": 50,  
    "server_group_members": 10,  
    "server_groups": 10  
  }  
}
```

Returned Values

See [Returned Values for General Requests](#).

5.10.3 Querying Default Quotas

Function

This API is used to query default quotas.

URI

GET /v2.1/{project_id}/os-quota-sets/{project_id}/defaults

[Table 5-171](#) describes the parameters in the URI.

Table 5-171 Parameter description

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

Request

None

Response

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

Table 5-172 Response parameters

Parameter	Type	Description
quota_set	Object	Specifies the quota_set object. For details, see Table 5-173 .

Table 5-173 **quota_set** parameter description

Parameter	Type	Description
cores	Integer	Specifies the quantity quota of vCPUs.
fixed_ips	Integer	Specifies the quantity quota of fixed IP addresses. This parameter is not supported.

Parameter	Type	Description
floating_ips	Integer	Specifies the quantity quota of floating IP addresses. This parameter is not supported.
id	String	Specifies the project UUID.
injected_file_content_bytes	Integer	Specifies the size quota (bytes) of the files to be injected.
injected_file_path_bytes	Integer	Specifies the size quota (bytes) of the path for the files to be injected.
injected_files	Integer	Specifies the quantity quota of the files to be injected.
instances	Integer	Specifies the quantity quota of ECSs.
key_pairs	Integer	Specifies the quota of key pairs. This parameter is not supported.
metadata_items	Integer	Specifies the metadata quantity quota.
ram	Integer	Specifies the memory quota (MB).
security_group_rules	Integer	Specifies the quota of security group rules. This parameter is not supported.
security_groups	Integer	Specifies the quota of security groups. This parameter is not supported.
server_groups	Integer	Specifies the quantity quota of ECS groups.
server_group_members	Integer	Specifies the size quota of ECS groups.

Example Request

```
GET https://{endpoint}/v2.1/d9ebe43510414ef590a4aa158605329e/os-quota-sets/d9ebe43510414ef590a4aa158605329e/defaults
```

Example Response

```
{
  "quota_set": {
    "injected_file_content_bytes": 10240,
    "metadata_items": 128,
    "server_group_members": 10,
    "server_groups": 10,
    "ram": 51200,
    "floating_ips": 10,
```

```
"key_pairs": 100,  
"injected_file_path_bytes": 255,  
"instances": 10,  
"security_group_rules": 20,  
"injected_files": 5,  
"cores": 20,  
"fixed_ips": -1,  
"id": "474eff20eee84b2e87b5717cc7f34dd8",  
"security_groups": 10  
}
```

Returned Values

See [Returned Values for General Requests](#).

5.11 Key and Password Management

5.11.1 Querying SSH Key Pairs

Function

This API is used to query SSH key pairs.

URI

GET /v2.1/{project_id}/os-keypairs

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

Table 5-174 Parameter description

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

Request

None

Response

[Table 5-175](#) describes the response parameters.

Table 5-175 Response parameters

Parameter	Type	Description
keypairs	Array of objects	Specifies key pairs. For details, see Table 5-176 .

Table 5-176 keypairs field description

Parameter	Type	Description
keypair	Object	Specifies details about a key pair. For details, see Table 5-177 .

Table 5-177 keypair field description

Parameter	Type	Description
fingerprint	String	Specifies fingerprint information about the key pair.
name	String	Specifies the key pair name.
type	String	Specifies the key type, which is ssh by default. This parameter is supported in microversion 2.2 and later.
public_key	String	Specifies information about the public key.

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/os-keypairs
```

Example Response

```
{
  "keypairs": [
    {
      "keypair": {
        "fingerprint": "15:b0:f8:b3:f9:48:63:71:cf:7b:5b:38:6d:44:2d:4a",
        "name": "keypair-601a2305-4f25-41ed-89c6-2a966fc8027a",
        "type": "ssh",
        "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQGC+Eo/
RZRngaGtKfs7I62ZjslO79KkIkBmXi8F+KITD4bVQHn+kV
+4gRgkgCRbdoDqoGfpaDFs877DYX9n4z6FrAlZ4PES8TNKhatifpn9NdQYWA+IkU8CuvlEKGuFpKRi/k7JLos/
gHi2hy7QUwgtRvcefvD/vgQZOVw/mGR9Q== Generated-by-Nova\n"
      }
    }
  ]
}
```

Returned Values

See [Returned Values for General Requests](#).

5.11.2 Querying a Specified SSH Key Pair

Function

This API is used to query a specified SSH key pair based on the SSH key pair name.

URI

GET /v2.1/{project_id}/os-keypairs/{keypair_name}

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

Table 5-178 Parameter description

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

Request

None

Response

[Table 5-179](#) describes the response parameters.

Table 5-179 Response parameters

Parameter	Type	Description
keypair	Object	Specifies the SSH key pair. For details, see Table 5-180 .

Table 5-180 keypair field description

Parameter	Type	Description
public_key	String	Specifies information about the public key.
name	String	Specifies the key pair name.
fingerprint	String	Specifies fingerprint information about the key pair.
created_at	String	Specifies the time when the key pair was created.

Parameter	Type	Description
deleted	Boolean	Specifies whether a key pair has been deleted. <ul style="list-style-type: none">• true: indicates that the key has been deleted.• false: indicates that the key is not deleted.
deleted_at	String	Specifies the time when the key pair was deleted.
id	Integer	Specifies the key pair ID.
updated_at	String	Specifies the time when the key pair was updated.
user_id	String	Specifies information about the user to which the key pair belongs.
type	String	Specifies the key type, which is ssh by default. This parameter is supported in microversion 2.2 and later.

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/os-keypairs/{keypair_name}
```

Example Response

```
{
  "keypair": {
    "created_at": "2014-05-07T12:06:13.681238",
    "deleted": false,
    "deleted_at": null,
    "fingerprint": "9d:00:f4:d7:26:6e:52:06:4c:c1:d3:1d:fd:06:66:01",
    "id": 1,
    "name": "keypair-3582d8b7-e588-4aad-b7f7-f4e76f0e4314",
    "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQDYJrTVpcMwFqQy/
oMvtUSRofZdSRHEwrsX8AYkRvn2ZnCXm+b6+GZ2NQuuWj+oczlnwiGFQDsL/yeE+/
kurqcPJFKKp60mToXIMyzioFxW88fJtwEWawHKAclbHWpR1t4fQ4DS+/sIbX/Yd9btIVQ2tpQjodGDbM9Tr9/+/
3i6rcR+EoLqmbgCgAiGiVV6VbM2Zx79yUwd+GnQejHX8BLYzoOjCnt3NREsITcmWE9FVFy6TnLmahs3FkEO/
QGgWGkaohAJlsgaVvSWGgDn2AujKYwyDokK3dXyeX3m2Vmc3ejjqPa/C4nRrCOLko5nSgV/
9IXRx1ERlmsqZnE9usB Generated-by-Nova\n",
    "updated_at": null,
    "user_id": "fake"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.11.3 Creating and Importing an SSH Key Pair

Function

This API is used to create an SSH key pair or import a public key to generate a key pair.

After a private SSH key is created, download the private key to a local directory. Then, you can use this private key to log in to the ECS. To ensure ECS security, the private key can be downloaded only once. Keep it secure.

Only the user that created the key pair can view it. If the key pair is created by an IAM user, the IAM account of the user and the other users of the same account cannot view the key pair.

URI

POST /v2.1/{project_id}/os-keypairs

[Table 5-181](#) describes the parameters in the URI.

Table 5-181 Parameter description

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

Request

[Table 5-182](#) describes the request parameters.

NOTE

When creating an SSH key, you only need to configure **name**. When importing an SSH key, you must configure **public_key**.

Table 5-182 Request parameters

Parameter	Mandatory	Type	Description
keypair	Yes	Object	Specifies the created or imported SSH key pair. For details, see Table 5-183 .

Table 5-183 keypair field description

Parameter	Mandatory	Type	Description
public_key	No	String	Specifies the imported public key. It is recommended that the length of the imported public key be less than or equal to 1024 bytes. NOTE If the length of the public key to be imported exceeds 1024 bytes, importing the public key will fail.

Parameter	Mandatory	Type	Description
type	No	String	Specifies the key type. The value is ssh or x509 . This parameter is supported in microversion 2.2 and later.
name	Yes	String	Specifies the key pair name. The new key pair name cannot be the same as an existing one.
user_id	No	String	Specifies the user ID of the key. This parameter is supported in microversion 2.10 and later.

Response

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

Table 5-184 Response parameters

Parameter	Type	Description
keypair	Object	Specifies the SSH key pair. For details, see Table 5-185 .

Table 5-185 keypair field description

Parameter	Type	Description
fingerprint	String	Specifies fingerprint information about the key pair.
name	String	Specifies the key pair name.
public_key	String	Specifies information about the public key.
private_key	String	Specifies information about the private key. <ul style="list-style-type: none"> The information about the private key is contained in the response for creating an SSH key. The information about the private key is not contained in the response for importing an SSH key.
user_id	String	Specifies the ID of the user to which the key pair belongs.
type	String	Specifies the key type. The value is ssh or x509 . This parameter is supported in microversion 2.2 and later.

Example Request

Importing an SSH Key

```
POST https://{endpoint}/v2.1/{project_id}/os-keypairs
{
  "keypair": {
    "public_key": "ssh-
rsaAAAAB3NzaC1yc2EAAAADAQABAAQDWNgtXQYeBzK9LYy4lakX7lsl5j5zqR6BU2GJaEg3RK6dLS7rKFQhvy/V/1emK+GT/7P8up9VsMZ9Dx6PBOLow5p+2/wGsMlWdJpWiQ8zNnEMg+u/Ar/ZhYHAMyKEAooJxlcnPouUgxfNdj/eiXV98AabsBdUA7QD30Og8F4Bmn2lii/WD9KbQQVjb7kbB3gNIJpGTUcoX73arorqkq/ppaLRmmwMJ7bTIGl8/0MWU2Dy+eTByOaDMb2htbB+j8ZXyEu7Oooy0NaSd+PNHv3PZ9OIVO7gd1lyoTRvCMK/F346+zmZtk5EASSOx5RifnSwk3NtugVjXs9GMJfFLBRibGenerated-by-Nova\n\n",
    "type": "ssh",
    "name": "demo1",
    "user_id": "fake"
  }
}
```

Creating an SSH Key

```
POST https://{endpoint}/v2.1/{project_id}/os-keypairs
{
  "keypair": {
    "name": "demo"
  }
}
```

Example response

Importing an SSH Key

```
{
  "keypair": {
    "public_key": "ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAQDWNgtXQYeBzK9LYy4lakX7lsl5j5zqR6BU2GJaEg3RK6dLS7rKFQhvy/V/1emK+GT/7P8up9VsMZ9Dx6PBOLow5p+2/wGsMlWdJpWiQ8zNnEMg+u/Ar/ZhYHAMyKEAooJxlcnPouUgxfNdj/eiXV98AabsBdUA7QD30Og8F4Bmn2lii/WD9KbQQVjb7kbB3gNIJpGTUcoX73arorqkq/ppaLRmmwMJ7bTIGl8/0MWU2Dy+eTByOaDMb2htbB+j8ZXyEu7Oooy0NaSd+PNHv3PZ9OIVO7gd1lyoTRvCMK/F346+zmZtk5EASSOx5RifnSwk3NtugVjXs9GMJfFLBRibGenerated-by-Nova\n\n",
    "user_id": "6fc0d2cbbfab40b199874b97097e913d",
    "name": "demo1",
    "fingerprint": "fc:47:b5:c3:7d:25:32:d5:d2:0c:19:f9:62:ac:8c:5a"
  }
}
```

Creating an SSH Key

```
{
  "keypair": {
    "public_key": "ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAQDWNgtXQYeBzK9LYy4lakX7lsl5j5zqR6BU2GJaEg3RK6dLS7rKFQhvy/V/1emK+GT/7P8up9VsMZ9Dx6PBOLow5p+2/wGsMlWdJpWiQ8zNnEMg+u/Ar/ZhYHAMyKEAooJxlcnPouUgxfNdj/eiXV98AabsBdUA7QD30Og8F4Bmn2lii/WD9KbQQVjb7kbB3gNIJpGTUcoX73arorqkq/ppaLRmmwMJ7bTIGl8/0MWU2Dy+eTByOaDMb2htbB+j8ZXyEu7Oooy0NaSd+PNHv3PZ9OIVO7gd1lyoTRvCMK/F346+zmZtk5EASSOx5RifnSwk3NtugVjXs9GMJfFLBRibGenerated-by-Nova\n\n",
    "private_key": "-----BEGIN RSA PRIVATE KEY-----\nMIIEpQIBAAKCAQEAljYE8UGHgcYvS2MuCGpF+yLcJeY+c6kegVNhiWhiN0SunZUu\n6yhUIb8v1f9Xpivhk/+z/LqfVbDGFQ8ejwTi6MOaftv8BrDJcAyaVokPMzZxDIPr\nnwWk/2YWBwDMihADjicSHJz6FIMXzXY/3ol1ffAGm7AXVAO0A99D0PBeAZp9pYov1\nng/Sm0EFY2+5Gwd4DSCaRk1HKF+92q6K6pKv6aWi0ZpsDCe20yBpfP9DFINg8vknw\nncjmgzG9obWwfo/GV8hLuzqKMTDwknfjzR79z2fTIFTu4HdZcqE0bwjCvxd+Ovs5m\n\nbZORAEkjseUYn50sJNzbb0FY17PRjCXxSwUYmwIDAQABAoiBADNKQ+ywUA3YQLDA\n\nUqlZKOB09h+0/YccG13D5TrNaV0yaMz6h31u7pYV/RIOTXxQTXbuZt5AoR4Xca9l\nnC30blmmxTDDL45CGi/TOT5AgyS7t/iuM+smFkw12YVbv53fL7q9yCxpucdnjC95/\n\nnNj/+M3qxupiQ42uRVAYCU1jwF6J6LY/
```

```

9UamrmVd4bWFRtT19O7uszUHLqJOZXq\n3ItqnMyD5bSMkzMN
+RxmZVXAPkBOonGVeBBInCjvHv23REkngX38zcUSc543H3Di\n4673helqSdMnl0/
TgyfLQcNuOsfQcD02ABWIGBe0nCTqP8pTRo86nzK1+AoCUp72\nIsTeviECgYEA8yHKeo/
eZw25eDb3YTJovbgzA61n6AYQLDQv7rBGQDwKKQHdEqhR\nP0PbScaoT7wSeLtYV0vxxA6qjEEuHhZik/
t2wEILu+AH4AK88SUbUn6ZoYu+XmTA\nx26e2QRo8Ngi/KtifeOGXx1PM/H2/OjEN3XjkwJs5bB+HjpF/
wsnUCgYEA4Yxg\nWJYNrvSkmvXmDgxHwdxfUpVAcP40bvomNgYpKn9R2TjyMCSdlw8vVC6cGCFB9/Pc
\nG0pr8RN2SvbTaPo/96DkKdHz7NAWkzUSChD4Oy7ZNXw6GK3x1tGwMWeTs1hQDHhO\nnrjS
+E3bV2jC4ElvLLBxCNCbhtmqwGuj7ZhgHM8CgYEA14UGpWpOrW8/D086LpCu
\nxC46GnJmfwiRPa6dJqpfO6V9JCigvV8y1i/ifR16KWP/w8HeZ1PMtgyCjD3JcaYz\nl
+pus7JYEGxgzrPepKxN8eyDZu4nDCmnsaFfceQ02fnd2bhDhERh4oJqqRM966ax\n+k+p0MhoF/
aqXuxgDF93T9kCgYEAw7TsfLfnGijJGfs4NARP11UCmUPMcif4UztX
\nIJVj7u4e9SJ6bvGfoDly3Ra8duuUtDOzDzMaSkqa4B0f//z0uEew8uCsIRVelUx
\nZ66l1aSm8JPkTTnRmJbGDXhUXtAIVWmmy94T+AurL/IKJMFH//RdNadvPrXcuUax
\nUB5hd10CgYEA3JBuX4BriSk6Bii0kYniqFM/1tEgVeAP6DT6uePvzTFdSJ0dMQo\nnzwgWNmm43CyoKW/
rw8yIbtIQZKBFHudSNx72nSmnBKaf3QPB40xsCip90ZUTfZdn\nLJzX1t4clg1wNsN4mJDwIYM9k3rB/
8EY1fh9gUYI84X6xFAHllkv0To=\n-----END RSA PRIVATE KEY-----\n",
    "user_id": "6fc0d2cbbfab40b199874b97097e913d",
    "type": "ssh",
    "name": "demo",
    "fingerprint": "fc:47:b5:c3:7d:25:32:d5:d2:0c:19:f9:62:ac:8c:5a"
  }
}

```

Returned Values

See [Returned Values for General Requests](#).

5.11.4 Deleting an SSH Key Pair

Function

This API is used to delete a specified SSH key pair based on the SSH key pair name.

URI

DELETE /v2.1/{project_id}/os-keypairs/{keypair_name}

[Table 5-186](#) describes the parameters in the URI.

Table 5-186 Parameter description

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

Request

None

Response

None

Example Request

```
DELETE https://{endpoint}/v2.1/{project_id}/os-keypairs/{keypair_name}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.12 ECS Group Management

5.12.1 Creating an ECS Group

Function

This API is used to create an ECS group.

Constraints

Only anti-affinity groups are supported.

URI

POST /v2.1/{project_id}/os-server-groups

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

Table 5-187 Parameter description

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

Request

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

Table 5-188 Request parameters

Parameter	Mandatory	Type	Description
server_group	Yes	Object	Specifies the ECS group information. For details, see Table 5-189 .

Table 5-189 server_group field description

Parameter	Mandatory	Type	Description
name	Yes	String	Specifies the ECS group name. The value contains 1 to 255 characters.
policies	Yes	Array of strings	Specifies the policies associated with the ECS group. Options: <ul style="list-style-type: none">• anti-affinity: ECSs in this group must be deployed on different hosts. NOTE You are suggested to use the policy described in Creating an ECS Group .

Response

[Table 5-190](#) describes the response parameters.

Table 5-190 Response parameters

Parameter	Type	Description
server_group	Object	Specifies the ECS group information. For details, see Table 5-191 .

Table 5-191 server_group field description

Parameter	Type	Description
id	String	Specifies the ECS group UUID.
name	String	Specifies the ECS group name.
policies	Array of strings	Specifies the policies associated with the ECS group. Options: <ul style="list-style-type: none">• anti-affinity: ECSs in this group must be deployed on different hosts.
members	Array of strings	Specifies the ECSs contained in an ECS group.
metadata	Object	Specifies the ECS group metadata.

Parameter	Type	Description
project_id	String	Specifies the tenant ID in UUID format for the ECS group. This parameter is supported in microversion 2.13 and later.
user_id	String	Specifies the user ID in UUID format for the ECS group. This parameter is supported in microversion 2.13 and later.

Example Request

```
POST https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/os-server-groups
{
  "server_group": {
    "name": "test",
    "policies": ["anti-affinity"]
  }
}
```

Example Response

```
{
  "server_group": {
    "id": "5bbcc3c4-1da2-4437-a48a-66f15b1b13f9",
    "name": "test",
    "policies": [
      "anti-affinity"
    ],
    "members": [],
    "metadata": {}
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.12.2 Querying ECS Groups

Function

This API is used to query ECS groups.

URI

GET /v2.1/{project_id}/os-server-groups

[Table 5-192](#) describes the parameters in the URI.

Table 5-192 Parameter description

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

Parameters in the following table can be used as URI parameters to filter query results.

Usage: /v2/{project_id}/os-server-groups?

Request

None

Response

[Table 5-193](#) describes the response parameters.

Table 5-193 Response parameters

Parameter	Type	Description
server_groups	Array of objects	Specifies the ECS group information. For details, see Table 5-194 .

Table 5-194 server_groups parameter information

Parameter	Type	Description
id	String	Specifies the ECS group UUID.
name	String	Specifies the ECS group name.
members	Array of strings	Specifies the ECSs in an ECS group.
metadata	Object	Specifies the ECS group metadata.
project_id	String	Specifies the tenant ID in UUID format for the ECS group. This parameter is supported in microversion 2.13 and later.
policies	Array of strings	Specifies the policies associated with the ECS group. Options: <ul style="list-style-type: none">• anti-affinity: ECSs in this group must be deployed on different hosts.

Parameter	Type	Description
user_id	String	Specifies the user ID in UUID format for the ECS group. This parameter is supported in microversion 2.13 and later.

Example Request

```
GET https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/os-server-groups
```

Example Response

```
{
  "server_groups": [
    {
      "id": "616fb98f-46ca-475e-917e-2563e5a8cd19",
      "name": "test",
      "policies": ["anti-affinity"],
      "members": [],
      "metadata": {},
      "project_id": "9c53a566cb3443ab910cf0daebca90c4"
    }
  ]
}
```

Returned Values

See [Returned Values for General Requests](#).

5.12.3 Querying Details About an ECS Group

Function

This API is used to query details about an ECS group.

URI

```
GET /v2.1/{project_id}/os-server-groups/{server_group_id}
```

[Table 5-195](#) describes the parameters in the URI.

Table 5-195 Parameter description

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

Request

None

Response

[Table 5-196](#) describes the response parameters.

Table 5-196 Response parameters

Parameter	Type	Description
server_group	Object	Specifies the ECS group information. For details, see Table 5-197 .

Table 5-197 server_group parameters

Parameter	Type	Description
id	String	Specifies the ECS group UUID.
name	String	Specifies the ECS group name.
policies	Array of strings	Specifies the policies associated with the ECS group. <ul style="list-style-type: none">• anti-affinity: ECSs in this group must be deployed on different hosts.
members	Array of strings	Specifies the ECSs contained in the ECS group.
metadata	Object	Specifies the ECS group metadata.
project_id	String	Specifies the tenant ID in UUID format for the ECS group. This parameter is supported in microversion 2.13 and later.
user_id	String	Specifies the user ID in UUID format for the ECS group. This parameter is supported in microversion 2.13 and later.

Example Request

```
GET https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/os-server-groups/5bbcc3c4-1da2-4437-a48a-66f15b1b13f9
```

Example Response

```
{
  "server_group": {
    "id": "5bbcc3c4-1da2-4437-a48a-66f15b1b13f9",
    "name": "test",
    "policies": ["anti-affinity"],
    "members": [],
    "metadata": {},
    "project_id": "9c53a566cb3443ab910cf0daebca90c4"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

5.12.4 Deleting an ECS Group

Function

This API is used to delete an ECS group.

URI

DELETE /v2.1/{project_id}/os-server-groups/{server_group_id}

[Table 5-198](#) describes the parameters in the URI.

Table 5-198 Parameter description

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

Request

None

Response

None

Example Request

```
DELETE https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/os-server-groups/5bbcc3c4-1da2-4437-a48a-66f15b1b13f9
```

Returned Values

See [Returned Values for General Requests](#).

5.13 ECS Operation Management

5.13.1 Querying Operations on an ECS

Function

This API is used to query all historical operations on an ECS.

URI

GET /v2.1/{project_id}/servers/{server_id}/os-instance-actions

[Table 5-199](#) describes the parameters in the URI.

Table 5-199 Path parameters

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

Table 5-200 Query parameters

Parameter	Mandatory	Description
limit	No	Specifies the upper limit on the number of returned results. This parameter is supported in microversion 2.58 and later.
marker	No	Specifies the marker that points to the operation. The query starts from the next piece of data indexed by this parameter. The value is request_id . This parameter is supported in microversion 2.58 and later.
changes-since	No	Specifies a time to return the server actions happen after this time. The format complies with ISO 8601 and is <i>CCYY-MM-DDThh:mm:ss+/-hh:mm</i> . For example, set this parameter to 2018-01-17T03:03:32Z . This parameter is supported in microversion 2.58 and later.

Request

None

Response

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

Table 5-201 Response parameters

Parameter	Type	Description
instanceActions	Array of Object	Specifies operations performed on the ECS. For details, see Table 5-202 .

Table 5-202 instanceActions field description

Parameter	Mandatory	Type	Description
action	Yes	String	Specifies the action. Options: create, delete, evacuate, restore, stop, start, reboot, rebuild, revertResize, confirmResize, detach_volume, attach_volume, attach_interface, detach_interface, lock, unlock, resize, migrate, pause, unpause, rescue, unrescue, changePassword, shelve, unshelve, live-migration, live_migration_cancel, live_migration_force_complete, trigger_crash_dump, extend_volume
instance_uuid	Yes	String	Specifies the ECS ID in UUID format.
message	Yes	String	Specifies the result status of the operation.
project_id	Yes	String	Specifies the project ID.
request_id	Yes	String	Specifies the request ID.
start_time	Yes	String	Specifies the time when the action was started.
user_id	Yes	String	Specifies the user ID.

Example Request

```
GET https://{endpoint}/v2.1/89655fe61c4c4a08b9f3e7f9095441b8/servers/e723eb40-f56e-40f9-8c8c-  
caa517fe06ba/os-instance-actions
```

Example Response

```
{  
  "instanceActions": [  
    {  
      "instance_uuid": "e723eb40-f56e-40f9-8c8c-caa517fe06ba",  
      "user_id": "752be40780484291a9cc7ae50fff3e6d",  
      "start_time": "2014-12-16T10:58:14.000000",  
      "request_id": "req-ee56c2b5-d33b-4749-ae83-09281dbbb716",  
      "action": "resize",  
      "message": "Error",  
      "project_id": "89655fe61c4c4a08b9f3e7f9095441b8"  
    },  
    {  
      "instance_uuid": "e723eb40-f56e-40f9-8c8c-caa517fe06ba",  
      "user_id": "752be40780484291a9cc7ae50fff3e6d",  
      "start_time": "2014-12-16T10:57:56.000000",  
      "request_id": "req-23cfd57f-c58a-45cd-86a6-eab3e38f3753",  
      "action": "resize",  
      "message": "Error",  
      "project_id": "89655fe61c4c4a08b9f3e7f9095441b8"  
    }  
  ]  
}
```

Returned Values

See [Returned Values for General Requests](#).

5.13.2 Querying ECS Operations by Request ID

Function

This API is used to query a request of an ECS.

URI

```
GET /v2.1/{project_id}/servers/{server_id}/os-instance-actions/{request_id}
```

[Table 5-203](#) describes the parameters in the URI.

Table 5-203 Parameter description

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

Request

None

Response

[Table 5-204](#) describes the response parameters.

Table 5-204 Response parameters

Parameter	Type	Description
instanceAction	Object	Specifies an operation performed on the ECS. For details, see Table 5-205 .

Table 5-205 instanceAction field description

Parameter	Mandatory	Type	Description
action	Yes	String	Specifies the action name.
instance_uuid	Yes	String	Specifies the ECS ID in UUID format.
message	Yes	String	Specifies the result status of the action.
project_id	Yes	String	Specifies the project ID.
request_id	Yes	String	Specifies the request ID.
start_time	Yes	String	Specifies the time when the action was started.
user_id	Yes	String	Specifies the user ID.
events	Yes	Array of objects	Describes events. For details, see Table 5-206 .

Table 5-206 events field description

Parameter	Mandatory	Type	Description
event	Yes	String	Specifies the action name.
result	Yes	String	Specifies the execution result.
traceback	Yes	String	Specifies the error message.
start_time	Yes	String	Specifies the time when the event was started.

Parameter	Mandatory	Type	Description
finish_time	Yes	String	Specifies the time when the event was completed.

Example Request

```
GET https://{endpoint}/v2.1/89655fe61c4c4a08b9f3e7f9095441b8/servers/e723eb40-f56e-40f9-8c8c-  
caa517fe06ba/os-instance-actions/req-5a429946-c9cc-45cc-b5bd-68864209e5c
```

Example Response

```
{  
  "instanceAction": {  
    "instance_uuid": "e723eb40-f56e-40f9-8c8c-caa517fe06ba",  
    "user_id": "752be40780484291a9cc7ae50fff3e6d",  
    "start_time": "2014-12-11T02:17:49.000000",  
    "request_id": "req-5a429946-c9cc-45cc-b5bd-68864209e5cc",  
    "action": "create",  
    "message": null,  
    "project_id": "89655fe61c4c4a08b9f3e7f9095441b8",  
    "events": [  
      {  
        "finish_time": "2014-12-11T02:17:58.000000",  
        "start_time": "2014-12-11T02:17:50.000000",  
        "traceback": null,  
        "event": "compute_build_and_run_instance",  
        "result": "Success"  
      }  
    ]  
  }  
}
```

Returned Values

See [Returned Values for General Requests](#).

5.14 ECS Console Management

5.14.1 Obtaining ECS Management Console Logs

Function

This API is used to obtain ECS management console logs.

URI

POST /v2.1/{project_id}/servers/{server_id}/action

[Table 5-207](#) describes the parameters in the URI.

Table 5-207 Parameter description

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

Constraints

This API will be discarded since a version later than microversion 2.5. When using this API, set the microversion to 2.5 or earlier.

Request

[Table 5-208](#) describes the request parameters.

Table 5-208 Request parameters

Parameter	Mandatory	Type	Description
os-getConsoleOutput	Yes	Object	Obtains ECS management console logs. For details, see Table 5-209 .

Table 5-209 os-getConsoleOutput parameter description

Parameter	Mandatory	Type	Description
length	Yes	Integer	Specifies the number of request log rows. The value is greater than or equal to -1, which indicates that the output is not limited.

Response

[Table 5-210](#) describes the response parameter.

Table 5-210 Response parameter

Parameter	Type	Description
output	String	ECS console log results

Example Request

```
POST https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/servers/47e9be4e-a7b9-471f-92d9-ffc83814e07a/action
{
  "os-getConsoleOutput" : {
    "length" : "50"
  }
}
```

Example Response

```
{
  "output": "FAKE CONSOLEOUTPUT\nANOTHER\nLAST LINE"
}
```

Returned Values

See [Returned Values for General Requests](#).

5.14.2 Obtaining a VNC-based Remote Login Address (Microversion 2.6 or Later)

Function

This API is used to obtain the address for remotely logging in to an ECS using VNC.

URI

POST /v2.1/{project_id}/servers/{server_id}/remote-consoles

[Table 5-211](#) describes the parameters in the URI.

Table 5-211 Parameter description

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

Constraints

- When using this API, ensure that the microversion is 2.6 or later.
Add a microversion using the HTTP request header X-OpenStack-Nova-API-Version or OpenStack-API-Version.
For example, X-OpenStack-Nova-API-Version: 2.6 or OpenStack-API-Version: compute 2.6
- An obtained login address is valid for 10 minutes. Obtain a new one after expiration.

Request

Table 5-212 Request parameters

Parameter	Mandatory	Type	Description
remote_console	Yes	Object	Obtains the address for remotely logging in to an ECS using VNC. For details, see Table 5-213 .

Table 5-213 remote_console parameters

Parameter	Mandatory	Type	Description
type	Yes	String	Specifies a remote login mode. Set it to novnc .
protocol	Yes	String	Specifies a remote login protocol. Set it to vnc .

Response

[Table 5-214](#) describes the response parameters.

Table 5-214 Response parameters

Parameter	Type	Description
remote_console	Object	Obtains the address for remotely logging in to an ECS. For details, see Table 5-215 .

Table 5-215 remote_console parameters

Parameter	Type	Description
type	String	Specifies a remote login mode.
protocol	String	Specifies a remote login protocol.
url	String	Specifies a remote login URL. The URL is valid for 10 minutes. Obtain a new one after expiration.

Example Request

```
POST https://{endpoint}/v2.1/13c67a214ced4afb88d911ae4bd5721a/servers/47bc79ae-
df61-4ade-9197-283a74e5d70e/remote-consoles
{
  "remote_console": {
    "type": "novnc",
    "protocol": "vnc"
  }
}
```

Example Response

```
{
  "remote_console": {
    "url": "https://nova-novncproxy.az21.dc1.domainname.com:8002/vnc.auto.html?
token=80fa7c8d-37fe-451e-8b08-bfb9fb6a4df&lang=EN",
    "type": "novnc",
    "protocol": "vnc"
  }
}
```

Returned Values

See [Returned Values for General Requests](#).

Error Codes

See [Error Codes](#).

5.15 AZ

5.15.1 Querying AZs

Function

This API is used to query AZs.

URI

GET /v2.1/{project_id}/os-availability-zone

[Table 5-216](#) describes the parameters in the URI.

Table 5-216 Parameter description

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

Response

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

Table 5-217 Response parameters

Parameter	Type	Description
availabilityZoneInfo	Array of objects	Specifies the AZ information. For details, see Table 5-218 .

Table 5-218 AvailabilityZoneInfo parameter information

Parameter	Type	Description
zoneState	Object	Specifies the AZ status. For details, see Table 5-219 .
hosts	List	The parameter is set to null .
zoneName	String	Specifies the AZ name.

Table 5-219 zoneState parameter information

Parameter	Type	Description
available	Boolean	Specifies the AZ status.

Example Request

```
GET https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/os-availability-zone
```

Example Response

```
{
  "availabilityZoneInfo": [{
    "zoneState": {
      "available": true
    },
    "hosts": null,
    "zoneName": "eu-west-101a" //Replace the value with the actual AZ name.
  },
  {
    "zoneState": {
      "available": true
    },
    "hosts": null,
    "zoneName": "eu-west-101b" //Replace the value with the actual AZ name.
  }
}]
}
```

Returned Values

See [Returned Values for General Requests](#).

5.16 Tag Management

5.16.1 Querying Tags of an ECS

This API is used to query all tags of an ECS.

You are required to use the HTTP header **X-OpenStack-Nova-API-Version: 2.26** to specify the microversion on the client.

URI

GET /v2.1/{project_id}/servers/{server_id}/tags

[Table 5-220](#) describes the parameters in the URI.

Table 5-220 Parameter description

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

Request

None

Response

[Table 5-221](#) describes the response parameters.

Table 5-221 Response parameters

Parameter	Type	Description
tags	Array of strings	Specifies ECS tags.

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/servers/{server_id}/tags
```

Example Response

Example response

```
{  
  "tags": ["baz=xyy", "foo", "qux"]  
}
```

Returned Values

See [Returned Values for General Requests](#).

5.16.2 Adding Tags to an ECS

This API is used to add tags to an ECS.

You are required to use the HTTP header **X-OpenStack-Nova-API-Version: 2.26** to specify the microversion on the client.

URI

PUT /v2.1/{project_id}/servers/{server_id}/tags

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

Table 5-222 Parameter description

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

Request

[Table 5-223](#) describes the request parameters.

Table 5-223 Request parameters

Parameter	Mandatory	Type	Description
tags	Yes	Array of strings	Specifies ECS tags. A maximum of 50 tags can be configured, and each tag can contain up to 80 characters.

Response

Table 5-224 Response parameters

Parameter	Mandatory	Type	Description
tags	Yes	Array of strings	Specifies ECS tags.

Table 5-225 Reserved tag parameters

Tag Name	Description
__type_bare_metal	Specifies that the server is a BMS.
__type_virtual	Specifies that the server is an ECS.

Example Request

```
PUT https://{endpoint}/v2.1/{project_id}/servers/{server_id}/tags
{
  "tags": ["baz", "foo", "qux"]
}
```

Example Response

```
{
  "tags": ["baz", "foo", "qux"]
}
```

Returned Values

See [Returned Values for General Requests](#).

5.16.3 Deleting Tags from an ECS

This API is used to delete all tags of an ECS.

You are required to use the HTTP header **X-OpenStack-Nova-API-Version: 2.26** to specify the microversion on the client.

URI

```
DELETE /v2.1/{project_id}/servers/{server_id}/tags
```

[Table 5-226](#) describes the parameters in the URI.

Table 5-226 Parameter description

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

Request

None

Response

None

Example Request

```
DELETE https://{endpoint}/v2.1/{project_id}/servers/{server_id}/tags
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.16.4 Adding a Tag to an ECS

This API is used to add a tag to an ECS.

You are required to use the HTTP header **X-OpenStack-Nova-API-Version: 2.26** to specify the microversion on the client.

Constraints

- The tag contains a maximum of 80 characters.
- A maximum of 50 tags can be added to an ECS.
- An empty tag cannot be created.

URI

```
PUT /v2.1/{project_id}/servers/{server_id}/tags/{tag}
```

[Table 5-227](#) describes the parameters in the URI.

Table 5-227 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the ID, see Obtaining a Project ID .
server_id	Yes	Specifies the ECS ID.
tag	Yes	Specifies the key of the tag to be added. NOTE Tag functions have been upgraded on the cloud service platform. If the tags added before the function upgrade are in the format of "Key.Value", query tags using "Key". For example, an existing tag is "a.b". The tag can be queried in the format of "tag=a.b" before and in the format of "tag=a" now according to the new tag rules.

Request

None

Response

Table 5-228 Response parameters

Parameter	Type	Description
message	String	Example: " \n\n\n"
code	String	Example: "201 Created"
title	String	Example: "Created"

Example Request

```
PUT https://{endpoint}/v2.1/{project_id}/servers/{server_id}/tags/{tag}
```

Example Response

By default, the response is in HTML format.

```
<html>
<head>
  <title>201 Created</title>
</head>
<body>
  <h1>201 Created</h1>
  <br /><br />
```

```
</body>
</html>
```

JSON format

```
{
  "message": "<br /><br />\n\n\n",
  "code": "201 Created",
  "title": "Created"
}
```

Returned Values

See [Returned Values for General Requests](#).

5.16.5 Querying a Specified Tag for an ECS

This API is used to query whether an ECS has a specified tag.

You are required to use the HTTP header **X-OpenStack-Nova-API-Version: 2.26** to specify the microversion on the client.

URI

GET /v2.1/{project_id}/servers/{server_id}/tags/{tag}

[Table 5-229](#) describes the parameters in the URI.

Table 5-229 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the ID, see Obtaining a Project ID .
server_id	Yes	Specifies the ECS ID.
tag	Yes	Specifies the key of the tag to be queried. If no key is specified, all tags of the ECS will be displayed. NOTE Tag functions have been upgraded on the cloud service platform. If the tags added before the function upgrade are in the format of "Key.Value", query tags using "Key". For example, an existing tag is "a.b". The tag can be queried in the format of "tag=a.b" before and in the format of "tag=a" now according to the new tag rules.

Request

None

Response

None

Example Request

```
GET https://{endpoint}/v2.1/{project_id}/servers/{server_id}/tags/{tag}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.16.6 Deleting a Specified Tag from an ECS

This API is used to delete a specified tag from an ECS.

You are required to use the HTTP header **X-OpenStack-Nova-API-Version: 2.26** to specify the microversion on the client.

Constraints

- The tag contains a maximum of 80 characters.
- If a tag contains non-URL-safe characters, perform URL encoding.

URI

```
DELETE /v2.1/{project_id}/servers/{server_id}/tags/{tag}
```

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

Table 5-230 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Specifies the project ID. For details about how to obtain the ID, see Obtaining a Project ID .
server_id	Yes	Specifies the ECS ID.
tag	Yes	Specifies the key of the tag to be deleted. If no key is specified, all tags of the ECS will be deleted. NOTE Tag functions have been upgraded on the cloud service platform. If the tags added before the function upgrade are in the format of "Key.Value", delete tags using "Key". For example, an existing tag is a.b . After the tag function upgrade, delete the tag using "a".

Request

None

Response

None

Example Request

```
DELETE https://{endpoint}/v2.1/{project_id}/servers/{server_id}/tags/{tag}
```

Example Response

None

Returned Values

See [Returned Values for General Requests](#).

5.17 Historical Versions

V2 is the historical version of native OpenStack APIs. V2.1 is recommended.

NOTE

To switch an OpenStack API from V2.1 to V2, change **2.1** in the native API URI to **2**. The history version V2 does not support microversion functions.

6 Application Examples

6.1 Obtaining a Token and Checking the Validity Period of the Token

Scenarios

The validity period of a token is 24 hours. After obtaining a token, store it to prevent frequent API calling. The original token will remain valid until it expires regardless of whether a new token has been obtained. Ensure that the token is valid when you use it. Using a token that will soon expire may cause API calling failures.

This section describes how to obtain a token and check its validity period to resolve the API calling failures caused by token expiration.

If the token is about to expire (cannot complete an API call or a set of API calls), you need to obtain a new token to prevent the call from being interrupted due to token expiration.

Helpful Links

- [Obtaining a User Token Through Password Authentication](#)
- [Verifying a Token](#)

Obtaining a Token

You need to obtain a token for authentication before calling an API. The **X-Auth-Token** value in the request header is the token value.

The following is an example to show how to obtain the token of the EU-Dublin region.

- Request URI: POST <https://iam.eu-west-101.myhuaweicloud.com/v3/auth/tokens>
- Request header: Content-Type=application/json
- Request message body:

```
{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],
      "password": {
        "user": {
          "name": "Enter a username",
          "password": "Enter the password for login.",
          "domain": {
            "name": "Enter the account name."
          }
        }
      }
    },
    "scope": {
      "project": {
        "name": "Enter a region name. In this example, the region is .eu-west-101"
      }
    }
  }
}
```

- To view the obtained token, click the response header. The value of **x-subject-token** is the obtained token. Keep the token secure because it will be used in the request header for creating ECSs.

General:

Request URL: <https://iam.eu-west-101.myhuaweicloud.com/v3/auth/tokens>
Request Method: POST
Status Code: 201

Response Headers:

cache-control: no-cache, no-store, must-revalidate
connection: keep-alive
content-length: 18401
content-type: application/json; charset=UTF-8
date: Thu, 27 May 2021 01:24:49 GMT
expires: Thu, 01 Jan 1970 00:00:00 GMT
pragma: no-cache
server: api-gateway
strict-transport-security: max-age=31536000; includeSubdomains;
via: proxy A
x-content-type-options: nosniff
x-download-options: noopen
x-frame-options: SAMEORIGIN
x-iam-trace-id: token_eu-west-101_null_9bbec3983f3c7a5c146e709251760467
x-request-id: d7796611318416bc8ffb2948a47fede8
x-subject-token: MIISMAYJKoZlhcNAQ...7xMUw==
x-xss-protection: 1; mode=block;

- The **expires_at** value in the response body is the token expiration time.

```
{
  "token": {
    "expires_at": "2021-05-28T01:24:49.905000Z",
    ...
  }
}
```

Checking the Token Validity Period

When making an API call, the system checks whether the validity period of the token is long enough. If your application has cached the token, it is recommended that the token be refreshed every 12 hours to ensure that it has a long enough validity period.

You can query the expiration time of a token by referring to [Verifying a Token](#).

The following is an example to show how to verify the token of the EU-Dublin region.

- Request URI: GET `https://iam.eu-west-101.myhuaweicloud.com/v3/auth/tokens`
- Request header:
 - Content-Type=application/json;charset=utf8
 - X-Auth-Token: A token with **Security Administrator** permissions is required if the administrator is requesting to verify the token of an IAM user.

The user token (no special permission requirements) of an IAM user is required if the user is requesting to verify their own token.

This example uses the IAM user and therefore the X-Auth-Token is the same as the token to be verified
 - X-Subject-Token: Token to be verified.
- The **expires_at** value in the response body is the token expiration time.

If the token is about to expire (cannot complete an API call or a set of API calls), you need to obtain a new token to prevent the call from being interrupted due to token expiration.

```
{
  "token": {
    "expires_at": "2021-05-28T01:24:49.905000Z",
    ...
  }
}
```

6.2 Common Scenarios of Using APIs

Scenarios

This section describes common scenarios of using APIs.

Table 6-1 Common scenarios of using APIs

Scenarios	Description
Purchasing ECSs Billed in Yearly/ Monthly Mode	Configure settings for purchasing yearly/monthly ECSs.
Querying Available Public Images	Type question marks (?) and ampersands (&) at the end of the URI to define multiple search criteria.
Renewing Yearly/ Monthly ECSs	Renew the subscription to yearly/monthly ECSs and specify the resource ID, renewal mode, renewal time, and payment method.
Querying Whether Flavors Can Be Purchased or Sold Out	Check whether specified ECS flavors are available in an AZ by viewing cond:operation:status and cond:operation:az in the response.

Scenarios	Description
Payment Method	Choose the payment mode by setting the extendparam.isAutoPay parameter when creating a yearly/monthly ECS (chargingMode is prePaid).
Querying Available Quotas of Resources	Call an API by referring to Querying Tenant Quotas . View maxTotalInstances to check the maximum number of ECSs that can be created and view totalInstancesUsed to check the number of ECSs that are being used.

Purchasing ECSs Billed in Yearly/Monthly Mode

You can refer to [Creating ECSs](#) to purchase yearly/monthly ECSs. Different from calling the API for creating pay-per-use ECSs, you only need to set **extendparam.chargingMode** to **prePaid** and set the purchase period in the request body. For details about **extendparam**, see [extendparam Field Description for Creating ECSs](#).

The following is an example to show how to purchase a yearly/monthly ECS in the eu-west-101 region with the usage duration for one month, and automatic payment and auto-renewal enabled.

```
{
  "server": {
    "name": "newservers",
    "availability_zone": "eu-west-101a",
    "flavorRef": "s3.small.1",
    "imageRef": "8da46d6d-6079-4e31-ad6d-a7167efff892",
    "root_volume": {
      "volumetype": "SATA"
    },
    "vpcid": "7e1a7e70-3f3e-4581-955e-26a4848d8f31",
    "nics": [
      {
        "subnet_id": "04548cde-4067-48b0-9323-5c7b67ac13fc"
      }
    ],
    "data_volumes": [
      {
        "volumetype": "SSD",
        "size": 50
      }
    ],
    "publicip": {
      "id": "publicip_123",
      "eip": {
        "iptype": "5_bgp",
        "bandwidth": {
          "size": 10,
          "sharetype": "PER"
        }
      }
    }
  },
  "extendparam": {
    "chargingMode": "prePaid",
    "periodType": "month",
    "periodNum": 1,
    "isAutoRenew": "true",
    "isAutoPay": "true",
  }
}
```

```
    "regionID": "eu-west-101"  
  }  
}
```

After a yearly/monthly ECS is created, an order ID **order_id** is returned.

```
{  
  "job_id": "ff808082739334d80173943ec9b42130",  
  "order_id": "CS2007281506xxxxx",  
  "serverIds": [  
    "fe0528f0-5b1c-4c8c-9adf-e5d5047b8c17"  
  ]  
}
```

In the preceding request body, the value of **extendparam.isAutoPay** is **true**, indicating automatic payment is enabled. If this parameter is left blank or set to **false**, you need to manually pay for the order (you can use coupons if any).

POST <https://bss.myhuaweicloud.com/v2/orders/customer-orders/pay>

```
{  
  "order_id": "CS20052715001E4CR"  
}
```

Querying Available Public Images

Query images using search criteria by referring to [Querying Images](#). You can type a question mark (?) and an ampersand (&) at the end of the URI to define multiple search criteria.

The following is an example to show how to query the public image list.

```
GET /v2/cloudimages?__imagetype=gold&visibility=public&protected=true
```

When calling the IMS API, you need to replace the endpoint information of the IMS service.

When querying the image list, use pagination query to return all images. You can specify **marker** and **limit** to query images by page.

marker indicates the image from which the query starts and the value is the image ID. **limit** specifies the number of images to be queried. The value is an integer and is **500** by default.

```
GET /v2/cloudimages?__imagetype=gold&visibility=public&protected=true&marker=af92bb51-ec9d-4b02-912f-da0b3f0f7635&limit=5
```

To query other types of images:

- Public images
GET /v2/cloudimages?__imagetype=gold&visibility=public&protected=true
- Private images
GET /v2/cloudimages?owner={project_id}
- Available shared images
GET /v2/cloudimages?
member_status=accepted&visibility=shared&__imagetype=shared
- Rejected shared images
GET /v2/cloudimages?
member_status=rejected&visibility=shared&__imagetype=shared

- Unaccepted shared images
GET /v2/cloudimages?
member_status=pending&visibility=shared&__imagetype=shared
- Public images supported by a BMS flavor
GET /v2/cloudimages?
__imagetype=gold&__support_xxx=true&virtual_env_type=Ironic

If the image type is not specified, you can determine the image type from the `__imagetype` field in the response.

Renewing Yearly/Monthly ECSs

If your yearly/monthly ECSs are about to expire, you can renew them.

The following is an example to show how to renew a yearly/monthly ECS for a month, set the billing mode to pay-per-use after the renewal period expires, and enable the automatic payment.

```
POST https://bss.myhuaweicloud.com/v2/orders/subscriptions/resources/renew
```

```
{
  "resource_ids": [
    "96308d5efd7841b9a4dac673d84d0e14"
  ],
  "period_type": 2,
  "period_num": 1,
  "expire_policy": 1,
  "is_auto_pay": 1
}
```

After the renewal is successful, an order ID is returned.

```
{
  "order_ids": [
    "CS190401192xxxxxx"
  ]
}
```

In the preceding request body, the value of `isAutoPay` is `1`, indicating automatic payment is enabled. If this parameter is left blank or set to `0`, you need to manually pay for the order (you can use coupons if any). The following is an example payment using a coupon.

```
POST https://bss.myhuaweicloud.com/v2/orders/customer-orders/pay
```

```
{
  "coupon_infos": [
    {
      "id": "CP2005270256xxxxxx",
      "type": 301
    }
  ],
  "order_id": "CS190401192xxxxxx"
}
```

Querying Whether Flavors Can Be Purchased or Sold Out

You can check whether specific ECS flavors are sufficient in an AZ by referring to [Querying Details About Flavors and Extended Flavor Information](#), and check the `cond:operation:status` and `cond:operation:az` values in the response to determine the AZ and flavor availability.

The following is an example to show how to query flavors in AZ1 of the EU-Dublin region.

```
GET https://ecs.eu-west-101.myhuaweicloud.com/v1/05041fea8a8025662f4ac00927982f3e/cloudservers/flavors?availability_zone=eu-west-101a
```

Response message

```
{
  "id": "c3.3xlarge.2",
  "name": "c3.3xlarge.2",
  ...
  "os_extra_specs": {
    "cond:spot_block:operation:az": "eu-west-101a(sellout),eu-west-101b(normal),eu-west-101c(normal)",
    "cond:operation:az": "eu-west-101a(normal),eu-west-101b(sellout)"
    ...
    "cond:operation:status": "abandon",
    "cond:spot_block:operation:interrupt_policy": "eu-west-101a(immediate),eu-west-101b(immediate),eu-west-101c(immediate)",
    "resource_type": "IOptimizedC3_2"
  }
}
```

In the response, view **cond:operation:status** and **cond:operation:az** to check whether flavors are available.

View **cond:operation:az** first. If an AZ is not configured in **cond:operation:az**, the **cond:operation:status** value is used by default.

In the EU-Dublin region in this example, c3.3xlarge.2 has been commercially used in AZ 1 and has been sold out in AZ 2. **cond:operation:az** has not been configured in AZ3 and therefore the **cond:operation:status** value is used, that is, c3.3xlarge.2 has been brought offline in AZ3.

Payment Method

When you are creating a yearly/monthly ECS (**chargingMode** is **prePaid**), you can choose the payment mode by setting the **extendparam.isAutoPay** parameter.

If this parameter is set to **true**, the order is automatically paid after being created.

If this parameter is set to **false**, you need to manually pay for the order (you can use coupons if any).

The following is an example payment using a coupon.

```
POST https://bss.myhuaweicloud.com/v2/orders/customer-orders/pay
```

```
{
  "coupon_infos": [
    {
      "id": "CP2005270256xxxxxx",
      "type": 301
    }
  ],
  "order_id": "CS190401192xxxxxx"
}
```

Querying Available Quotas of Resources

You can query the resource quotas, including the used quotas, of the current account by referring to [Querying Tenant Quotas](#).

```
GET https://ecs.cn-east-2.myhuaweicloud.com/v1/05041fea8a8025662f4ac00927982f3e/cloudservers/limits
```

In the following response message, the **maxTotalInstances** value is the maximum number of ECSs that can be created, and the **totalInstancesUsed** value is the number of ECSs that are being used.

```
{
  "-absolute": {
    "maxServerMeta": 128,
    "maxPersonality": 5,
    "maxImageMeta": 128,
    "maxPersonalitySize": 10240,
    "maxSecurityGroupRules": 20,
    "maxTotalKeypairs": 1000,
    "totalRAMUsed": 22528,
    "totalInstancesUsed": 4,
    "maxSecurityGroups": 10,
    "totalFloatingIpsUsed": 0,
    "maxTotalCores": 8000,
    "totalSecurityGroupsUsed": 1,
    "maxTotalFloatingIps": 10,
    "maxTotalInstances": 1000,
    "totalCoresUsed": 11,
    "maxTotalRAMSize": 16384000,
    "maxServerGroups": 32,
    "maxServerGroupMembers": 16,
    "totalServerGroupsUsed": 0,
    "maxTotalSpotInstances": 20,
    "maxTotalSpotCores": 320,
    "maxTotalSpotRAMSize": 655360,
    "totalSpotInstancesUsed": 0,
    "totalSpotCoresUsed": 0,
    "totalSpotRAMUsed": 0,
    "maxFaultDomainMembers": 200,
    "limit_by_flavor": []
  }
}
```

6.3 Creating an ECS

Scenarios

This section describes how to create an ECS by calling APIs. For details, see [Calling APIs](#).

An ECS can be created using a disk or image. This section uses an image as an example to describe how to create an ECS.

Constraints

The ECS created using this API is in pay-per-use billing mode.

Involved APIs

Creating an ECS involves viewing flavors and AZs as well as creating EVS disks. The following APIs are required:

- [Querying AZs](#): Determine the AZ where the ECS to be created is located.
- [Querying Details About ECS Flavors](#): Determine the flavor of the ECS to be created.
- [Querying Image Details](#): Determine the image based on which the ECS is to be created.

- [Querying Networks](#): Determine the network configuration of the ECS.
- [Creating and Importing an SSH Key Pair](#): Set the login mode to **Key pair**.
- [Creating an ECS](#): Create an ECS authenticated using a key pair.
- [Querying Details About an ECS](#): Verify that the ECS has been created.

Procedure

Step 1 Determine the AZ where the ECS is located.

1. View AZs.

– API

URI format: GET /v2.1/{project_id}/os-availability-zone

For details, see [Querying AZs](#).

– Example request

GET: https://{endpoint}/v2.1/74610f3a5ad941998e91f076297ecf27/os-availability-zone

Obtain {endpoint} from the administrator.

– Example response

```
{
  "availabilityZoneInfo": [
    {
      "hosts": null,
      "zoneState": {
        "available": true
      },
      "zoneName": "zone_01"
    },
    {
      "hosts": null,
      "zoneState": {
        "available": true
      },
      "zoneName": "zone_01"
    }
  ]
}
```

2. Select an AZ based on site requirements and record the AZ (**zoneName**).

Step 2 Determine the ECS flavor.

1. View ECS flavors.

– API

URI format: GET /v2.1/{project_id}/flavors/detail{?minDisk,minRam,is_public,sort_key,sort_dir}

The fields following the question mark (?) are optional, which are used for querying ECS flavors. For details, see [Querying Details About ECS Flavors](#).

– Example request

GET: https://{endpoint}/v2.1/74610f3a5ad941998e91f076297ecf27/flavors/detail

Obtain {endpoint} from the administrator.

– Example response

```
{
  "flavors": [
```

```
{
  "name": "c1.2xlarge",
  "links": [
    {
      "href": "https://xxx/v2.1/74610f3a5ad941998e91f076297ecf27/flavors/c1.2xlarge",
      "rel": "self"
    },
    {
      "href": "https://xxx/74610f3a5ad941998e91f076297ecf27/flavors/c1.2xlarge",
      "rel": "bookmark"
    }
  ],
  "ram": 8192,
  "OS-FLV-DISABLED:disabled": false,
  "vcpus": 8,
  "swap": "",
  "os-flavor-access:is_public": true,
  "rxtx_factor": 1,
  "OS-FLV-EXT-DATA:ephemeral": 0,
  "disk": 0,
  "id": "c1.2xlarge"
}
]
```

2. Select a flavor based on site requirements and record the flavor ID.

Step 3 Determine the image.

1. View images.

- API

URI format: GET /v2.1/{project_id}/images/detail

For details, see [Querying Image Details \(Discarded\)](#).

- Example request

GET: https://{endpoint}/v2.1/74610f3a5ad941998e91f076297ecf27/images/detail

Obtain {endpoint} from the administrator.

- Example response

```
{
  "images": [
    {
      "OS-EXT-IMG-SIZE:size": 0,
      "metadata": {
        "__os_type": "Linux",
        "hw_vif_multiqueue_enabled": "true",
        "__imagetype": "gold",
        "__quick_start": "true",
        "virtual_env_type": "FusionCompute",
        "__support_xen": "true",
        "__support_kvm": "true",
        "__image_source_type": "uds",
        "__platform": "EulerOS",
        "__os_version": "EulerOS 2.2 64bit",
        "__os_bit": "64",
        "__isregistered": "false"
      },
      "created": "2018-05-14T06:13:50Z",
      "minRam": 0,
      "name": "DBS-MySQL-Image_2.1.3.3",
      "progress": 100,
      "links": [
        {
          "rel": "self",
          "href": "https://None/v2.1/74610f3a5ad941998e91f076297ecf27/images/11e8f727-d439-4ed1-b3b8-33f46c0379c4"
        }
      ]
    }
  ]
}
```

```
    },
    {
      "rel": "bookmark",
      "href": "https://None/74610f3a5ad941998e91f076297ecf27/images/11e8f727-d439-4ed1-
b3b8-33f46c0379c4"
    },
    {
      "rel": "alternate",
      "href": "https://None/images/11e8f727-d439-4ed1-b3b8-33f46c0379c4",
      "type": "application/vnd.openstack.image"
    }
  ],
  "id": "11e8f727-d439-4ed1-b3b8-33f46c0379c4",
  "updated": "2018-05-14T06:13:52Z",
  "minDisk": 40,
  "status": "ACTIVE"
}
]
```

2. Select an image based on site requirements and record the image ID.

Step 4 Determine the network configuration.

1. View networks.

- API

URI format: GET /v2.1/{project_id}/os-networks

For details, see [Querying Networks](#).

- Example request

GET: https://{endpoint}/v2.1/74610f3a5ad941998e91f076297ecf27/os-networks

Obtain {endpoint} from the administrator.

- Example response

```
{
  "networks": [
    {
      "id": "07a9557d-4256-48ae-847c-415a9c8f7ff6",
      "label": "b_tt3_td1b",
      "broadcast": null,
      "cidr": null,
      "dns1": null,
      "dns2": null,
      "gateway": null,
      "netmask": null,
      "cidr_v6": null,
      "gateway_v6": null,
      "netmask_v6": null
    }
  ]
}
```

2. Select a network based on site requirements and record the network ID.

Step 5 Set the login mode to **Key pair**.

1. Create a key pair.

- API

URI format: POST /v2.1/{project_id}/os-keypairs

For details, see [Creating and Importing an SSH Key Pair](#).

- Example request

POST: https://{endpoint}/v2.1/74610f3a5ad941998e91f076297ecf27/os-keypairs

Obtain *{endpoint}* from the administrator.

Body:

```
{
  "keypair": {
    "type": "ssh",
    "name": "demo1",
    "user_id": "fake"
  }
}
```

– Example response

```
{
  "keypair": {
    "public_key": "ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAQCrR5Gcwlh5ih7JOvzIUuQxS5qzWWPMYHeDXkDKSQ9W
5pumOV05SiO3WCswnaQ5xMdOl31mNiHtwlwq9dJi7X6jBB2shTD
+00G5WuwkBbFU4CLvt1B44u0NUiaTJ35NAvW2/4XvpXm9OwiQ3B5ge6ZY7Esi38Unh
+pkbhPkYxNBCK8yoOlojQhWs75abdxZBi811/8RwLcNiFiocA2RGxtRjBdpEScj+1TU
+OcfZdQnr0AFbO11z7yxflygwwvzVTgUuJNbmBkHStQqRbklfMLHY4RBPQgb7RN/YaXKTQXS84k
+D9xLDNo7Wj4fwOJTOz/s/PvblOqjRht9D6Y4IKd Generated-by-Nova\n",
    "private_key": "-----BEGIN RSA PRIVATE KEY-----
\nMIIeOglBAAKCAQEAAQ0eRnMJYeYoeyTr8yFLkMUuas1ljzGB3g15AykkPVuabpJld
\nOUoijt1grMJ2kOcTHtpd9ZjYh7cJcKvXSYu1+oyQQdrlUw/tNBuVrsJAWxVOAi77d
\nQeOLtDVIImkyd+TQL1tv+F76V5vTsIkNweYHumWOxLit/FJ4fqZG4T5GMTQQivMqD\nnpal0IVrO
+Wm3cWQYvNdf/EcC3DYhYqHANKrSbUYwXaEnl/tU1PjnH2XUJ69ABWz\ntdc
+8sXyMoMMM1U4FLiTWzGyh0rUKkW5JXzJR2OEqT0IG+0Tf2Glyk0EI0/OJpG/\ncZQzaO1o
+H8DiUzs/7Pz72yDqo0R7fQ+mOCCnQIDAQABAolBAA6/c9dGmK2mae4z\nyQ5KrOFdvc1TNhej
+sZx+CwyzEJUSvSuHcvQCXFBaz8FY92hhvPKcX66jINXZ
+4/\nCmWAQ5YyhC Riow0Y91HvsS0bywoknX3q6kxBFodmyyCWFkgd5iMTADb1Lx0a2Y77\njLS4DL5
gyiGmxUN2Ng24wWEAjE8ZnuI0lrtr5IZKp+s5IAi/rb5AG/mL7EzicE8c\nmGP+QAa
+nzwhAwNHfWVID230xen/Zcol1d77hxeARNqJUxoR25gwJd6Ebg2y9pDW
\nVu6cbbzgdGUCfQYIMEoAamAkCswOsDpVDBXwQnt2A537n6Wq2bgYIKusHr9thtXp\n/
5ubQLUCgYEA4zYuBG2vtLHnvce26P8o2j1xcJS9K0ozkah9JfL3hgFN0sAqLz7\n/
Fm1ja4kzHJS3d0UqP3AMDxY3HklqCn4Be7lqeAAe2AfaqOZpt9MDNv4VwKe9sPb
\nViW1qjL3FxiZLc/YWTRNSlpwRjqJJGhA+UQt8rOia1k/zXmrEs7bXLCgYEAwPsu
\nK3j5QoAiziYVMYf5iCzWwAM9Ljpf9gw23lefTdlzhhfFtjplVRSyxRGU0UZ84GMI\nnTd5zmclF/
1KUfhqmeiQzz6NIPEYEReahjpQ/sOH/Gk5Rwr3QwYPrwAu5x+kk/SRI\nnKPkqw7APTR0sMQBcUq
+ZYwGYLGPmdd1zUdLfb0sCgYBkuz11jydtxb3G/obSD2WO\nmM9VaylcmzRPFzNwGRH/
gOR0mhTluKp0wyJjSd34oeqpH/2r2ivddrOysxoqa8jg
\n4IQDZyLvj7MaKjQxriep89+y9Or9TMFo1xB46x2G8EN8/xHuA9YGnZSPFtWv72m
\nhRqV0hv82amWsA0vHnRUSwKBgDsKHxvrTMbNkNhykMXCH5iyWiBF5yZa1ZJMlgf
\nknsqfdeVPwF6E55QKAN2uuTlwzG/3ljPxahR1hvmUJQN9JSBiUKbtW6GPCRvbr\nf/
jLi1lu99COZdluVKeybqn8Z/aSNP24DR9FM8kxzZ1IMPaTBmhFypp6BclhclBt
\nxTG1AoGAfcrkVbV1SOy7fECUtMpUECcw0yU4GWj3sR2RbII63C500RVYQlUpUaRR
\nANbASHTVR4myOKtGSxEUhAQHlxFDwsDL7W3gzAqTFbEDp1xAAUyT/
nkOAhQjEm4\nORFDDETeXLQG1KMUj+8AdnhfYp3JTdtft6rmPpZEBUFICAUMAvb0=\n-----END
RSA PRIVATE KEY-----\n",
    "user_id": "f79791beca3c48159ac2553fff22e166",
    "name": "demo1",
    "fingerprint": "57:a7:a2:ed:5f:aa:e7:54:62:2e:bb:e7:92:22:cb:40"
  }
}
```

2. Import the key pair.

– API

URI format: POST */v2.1/{project_id}/os-keypairs*

For details, see [Creating and Importing an SSH Key Pair](#).

– Example request

POST: *https://{endpoint}/v2.1/74610f3a5ad941998e91f076297ecf27/os-keypairs*

Obtain *{endpoint}* from the administrator.

Body:

```
{
  "keypair": {
```

```
"public_key": "ssh-rsa
AAAAAB3NzaC1yc2EAAAADAQABAAQDQY8wMTdBYiJg62o6eShoOISkx3CZ3cE6PHisDblfK3Y0B
g7EHV7iV9c74pqsrIhK0xuGUuO1NxDQWbkwLTPN4F9Iy5CIYohLuMlpln6LDtfrPpdhEh3xl8MM6
1gyfpKzeKkwwEpSFj27Rgh6zCyJgBpkA2A0HTP737UlitahL4faCWDIS
+Vj6mbcfkWiMhuMCzTZgSKAZ4PfoG4B5HJhR52C6A4XLIQFT9heh9gnlSlG
+uTogTKUbcJKuN7M6AraJpul6eHhV9YI4433sDmuiBF/njvreVPWwAHLAkgT9I8q1T/
cfEFiwzXpdGbkK5O8NC7K+qNbbdKihlahONT Generated-by-Nova\n",
  "type": "ssh",
  "name": "demo2",
  "user_id": "fake"
}
}
```

– Example response

```
{
  "keypair": {
    "public_key": "ssh-rsa
AAAAAB3NzaC1yc2EAAAADAQABAAQDQY8wMTdBYiJg62o6eShoOISkx3CZ3cE6PHisDblfK3Y0B
g7EHV7iV9c74pqsrIhK0xuGUuO1NxDQWbkwLTPN4F9Iy5CIYohLuMlpln6LDtfrPpdhEh3xl8MM6
1gyfpKzeKkwwEpSFj27Rgh6zCyJgBpkA2A0HTP737UlitahL4faCWDIS
+Vj6mbcfkWiMhuMCzTZgSKAZ4PfoG4B5HJhR52C6A4XLIQFT9heh9gnlSlG
+uTogTKUbcJKuN7M6AraJpul6eHhV9YI4433sDmuiBF/njvreVPWwAHLAkgT9I8q1T/
cfEFiwzXpdGbkK5O8NC7K+qNbbdKihlahONT Generated-by-Nova\n",
    "user_id": "f79791beca3c48159ac2553fff22e166",
    "name": "demo2",
    "fingerprint": "dd:44:45:d9:f6:4f:c0:24:2d:81:aa:c4:4b:83:c2"
  }
}
```

- Record the name in the response body, for example, **demo2**.

Step 6 Create an ECS authenticated using the key pair.

- API

URI format: POST /v2.1/{project_id}/servers

For details about API constraints and request parameters, see [Creating an ECS](#).

NOTE

In this example, the ECS is created using a specified image.

- In **block_device_mapping_v2**, set **source_type** to **image**, **uuid** to the image ID, **destination_type** to **volume**, and **boot_index** to **0**.
 - The **volume_size** must be greater than or equal to the minimum value specified in the image metadata.
- Example request

POST: <https://endpoint/v2.1/74610f3a5ad941998e91f076297ecf27/servers>

Obtain *endpoint* from the administrator.

Body:

```
{
  "server": {
    "flavorRef": "c1.large",
    "name": "ztestvm1",
    "block_device_mapping_v2": [{
      "source_type": "image",
      "destination_type": "volume",
      "volume_type": "SSD",
      "volume_size": "40",
      "delete_on_termination": "true",
      "uuid": "11e8f727-d439-4ed1-b3b8-33f46c0379c4",
      "boot_index": "0"
    }],
    "networks": [{
      "uuid": "fb68519f-a7c0-476e-98d4-2e4cf6de6def"
    }
  ]
}
```

```
    },  
    "key_name": "demo2",  
    "availability_zone": "az_test_01"  
  }  
}
```

- Example response

```
{  
  "server": {  
    "security_groups": [  
      {  
        "name": "default"  
      }  
    ],  
    "OS-DCF:diskConfig": "MANUAL",  
    "links": [  
      {  
        "rel": "self",  
        "href": "https://None/v2.1/74610f3a5ad941998e91f076297ecf27/servers/6d311127-bce1-48db-bf0f-cac9f8f7f077"  
      },  
      {  
        "rel": "bookmark",  
        "href": "https://None/74610f3a5ad941998e91f076297ecf27/servers/6d311127-bce1-48db-bf0f-cac9f8f7f077"  
      }  
    ],  
    "id": "6d311127-bce1-48db-bf0f-cac9f8f7f077",  
    "adminPass": "WcC4QoVZPXpV"  
  }  
}
```

Step 7 Verify the ECS creation.

- API

URI format: GET /v2.1/{project_id}/servers/{server_id}

For details, see [Querying Details About an ECS](#).

- Example request

GET: https://{endpoint}/v2.1/74610f3a5ad941998e91f076297ecf27/servers/0c71c0da-8852-4c56-a1d1-3a9b9bcb6da6

where,

0c71c0da-8852-4c56-a1d1-3a9b9bcb6da6 is the UUID of the created ECS.

Obtain *{endpoint}* from the administrator.

- Example response

```
{  
  "server": {  
    "tenant_id": "74610f3a5ad941998e91f076297ecf27",  
    "addresses": {  
      "2a6f4aa6-d93e-45f5-a8cb-b030dbf8cd68": [  
        {  
          "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:88:01:1b",  
          "OS-EXT-IPS:type": "fixed",  
          "addr": "192.168.2.192",  
          "version": 4  
        }  
      ]  
    },  
    "metadata": {},  
    "OS-EXT-STs:task_state": null,  
    "OS-DCF:diskConfig": "MANUAL",  
    "OS-EXT-AZ:availability_zone": "az_test_01",  
    "links": [  
      {  
        "rel": "self",  
        "href": "https://None/v2.1/74610f3a5ad941998e91f076297ecf27/servers/0c71c0da-8852-4c56-a1d1-3a9b9bcb6da6"  
      }  
    ]  
  }  
}
```

```
    "href": "https://None/v2.1/74610f3a5ad941998e91f076297ecf27/servers/0c71c0da-8852-4c56-
a1d1-3a9b9bcb6da6"
  },
  {
    "rel": "bookmark",
    "href": "https://None/74610f3a5ad941998e91f076297ecf27/servers/0c71c0da-8852-4c56-
a1d1-3a9b9bcb6da6"
  }
],
"OS-EXT-STS:power_state": 1,
"id": "0c71c0da-8852-4c56-a1d1-3a9b9bcb6da6",
"os-extended-volumes:volumes_attached": [
  {
    "id": "b551445a-e749-4d53-932a-638a455cb6c3"
  }
],
"OS-EXT-SRV-ATTR:host": "pod1_test_01",
"image": {
  "links": [
    {
      "rel": "bookmark",
      "href": "https://None/74610f3a5ad941998e91f076297ecf27/images/11e8f727-d439-4ed1-
b3b8-33f46c0379c4"
    }
  ],
  "id": "11e8f727-d439-4ed1-b3b8-33f46c0379c4"
},
"OS-SRV-USG:terminated_at": null,
"accessIPv4": "",
"accessIPv6": "",
"created": "2018-05-25T01:47:11Z",
"hostId": "b2792bef98988d2df1f51bff81de5ac58a4117f4e9ec3059c1a0410",
"OS-EXT-SRV-ATTR:hypervisor_hostname": "nova001@36",
"key_name": null,
"flavor": {
  "links": [
    {
      "rel": "bookmark",
      "href": "https://None/74610f3a5ad941998e91f076297ecf27/flavors/c1.large"
    }
  ],
  "id": "c1.large"
},
"security_groups": [
  {
    "name": "default"
  }
],
"config_drive": "",
"OS-EXT-STS:vm_state": "active",
"OS-EXT-SRV-ATTR:instance_name": "instance-001883cd",
"user_id": "f79791beca3c48159ac2553fff22e166",
"name": "zttestvm1",
"progress": 0,
"OS-SRV-USG:launched_at": "2018-05-25T01:47:55.755922",
"updated": "2018-05-25T01:47:55Z",
"status": "ACTIVE"
}
}
```

----End

6.4 Querying ECSs

Scenarios

This section describes how to use the API for querying details about ECSs to obtain all ECSs of a tenant by page.

The operations described in this section include information query by page and data filtering and sorting. For details about the parameters, see [Querying Details About ECSs](#).

Involved APIs

Querying ECSs involves the following APIs:

- [Querying Details About ECSs by Specifying the Maximum Number of ECSs Displayed on One Page](#)
- [Querying Details About ECSs by Specifying the Maximum Number of ECSs Displayed on One Page and the ID of the Last Flavor on One Page](#)

Procedure

Step 1 Query details about ECSs by specifying the maximum number of ECSs displayed on one page.

- API

URI format: GET /v2.1/{project_id}/servers/detail

For details, see [Querying Details About ECSs](#).

- Example request

GET: `https://{endpoint}/v2.1/743b4c0428d945316666666666666666/servers/detail?limit=100`

Obtain *{endpoint}* from the administrator.

The **limit** value can be adjusted based on ECS data.

- Example response

```
{
  "servers": [
    .....
    {
      "tenant_id": "743b4c0428d945316666666666666666",
      "metadata": {
      },
      "addresses": {
        "140fd038-c4ae-4c32-ac07-34b525eb6b95": [
          {
            "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:e9:91:50",
            "addr": "192.168.0.178",
            "OS-EXT-IPS:type": "fixed",
            "version": 4
          }
        ]
      },
      "OS-EXT-STs:task_state": null,
      "OS-DCF:diskConfig": "MANUAL",
      "OS-EXT-AZ:availability_zone": "xxx",
      "links": [
```



```
{
  "rel": "self",
  "href": "https://ecs.xxx/v2.1/743b4c0428d945316666666666666666/servers/f215afe8-
b0c2-41cc-9191-585638166812"
},
{
  "rel": "bookmark",
  "href": "https://ecs.xxx/743b4c0428d945316666666666666666/servers/f215afe8-
b0c2-41cc-9191-585638166812"
}
],
"OS-EXT-STS:power_state": 4,
"id": "f215afe8-b0c2-41cc-9191-585638166812",
"os-extended-volumes:volumes_attached": [
  {
    "id": "546cf622-b9e5-4784-b659-6881e711f283"
  }
],
"OS-EXT-SRV-ATTR:host": "pod01.xxx",
"accessIPv4": "",
"image": {
  "links": [
    {
      "rel": "bookmark",
      "href": "https://ecs.xxx/743b4c0428d945316666666666666666/images/
5c13381a-4a54-4ea5-a3b5-e7f7069f19a4"
    }
  ],
  "id": "5c13381a-4a54-4ea5-a3b5-e7f7069f19a4"
},
"OS-SRV-USG:terminated_at": null,
"accessIPv6": "",
"created": "2019-08-09T02:35:04Z",
"hostId": "31397656d6b318d01431f60c481d8425dc58eb421d237a385ceb80ee",
"OS-EXT-SRV-ATTR:hypervisor_hostname": "nova022@36",
"flavor": {
  "links": [
    {
      "rel": "bookmark",
      "href": "https://ecs.xxx/743b4c0428d945316666666666666666/flavors/s3.large.4"
    }
  ],
  "id": "s3.large.4"
},
"key_name": null,
"security_groups": [
  {
    "name": "sg-1e22"
  }
],
"config_drive": "",
"OS-EXT-STS:vm_state": "stopped",
"user_id": "a8c20feabb5245e0bae4ef27618f932b",
"OS-EXT-SRV-ATTR:instance_name": "instance-004bf55f",
"name": "ecs-f090",
"OS-SRV-USG:launched_at": "2019-08-09T02:35:23.000000",
"updated": "2019-08-13T03:12:39Z",
"status": "SHUTOFF"
}
],
"servers_links": [
  {
    "rel": "next",
    "href": "https://ecs.xxx/v2.1/743b4c0428d945316666666666666666/servers/detail?
limit=100&marker=f215afe8-b0c2-41cc-9191-585638166812"
  }
]
}
```

Step 2 Query details about ECSs by specifying the maximum number of ECSs displayed on one page and the ID of the last flavor on one page.

- API

URI format: GET /v2.1/{project_id}/servers/detail

The used API is the same as that provided in [Step 1](#).

- Example request

GET: `https://{endpoint}/v2.1/743b4c0428d945316666666666666666/servers/detail?limit=100&marker=f215afe8-b0c2-41cc-9191-585638166812`

The URI of the next page is returned. For details, see the **href** field in **servers_links** of the returned body. If this field is unavailable, there is no more pages any more.

- Example response

```
{
  "servers": [
    .....
    {
      "tenant_id": "743b4c0428d945316666666666666666",
      "metadata": {
      },
      "addresses": {
        "140fd038-c4ae-4c32-ac07-34b525eb6b95": [
          {
            "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:a5:2b:f8",
            "addr": "192.168.0.169",
            "OS-EXT-IPS:type": "fixed",
            "version": 4
          }
        ]
      },
      "OS-EXT-STS:task_state": null,
      "OS-DCF:diskConfig": "MANUAL",
      "OS-EXT-AZ:availability_zone": "xxxx",
      "links": [
        {
          "rel": "self",
          "href": "https://xxx/v2.1/743b4c0428d945316666666666666666/servers/62348919-0188-43ec-aae6-82c1e96c49eb"
        },
        {
          "rel": "bookmark",
          "href": "https://ecs.xxx/743b4c0428d945316666666666666666/servers/62348919-0188-43ec-aae6-82c1e96c49eb"
        }
      ],
      "OS-EXT-STS:power_state": 4,
      "id": "62348919-0188-43ec-aae6-82c1e96c49eb",
      "os-extended-volumes:volumes_attached": [
        {
          "id": "f0bb068a-61c1-4dc8-8455-09857773c3ff"
        }
      ],
      "OS-EXT-SRV-ATTR:host": "pod01.xxx",
      "accessIPv4": "",
      "image": {
        "links": [
          {
            "rel": "bookmark",
            "href": "https://ecs.xxx/743b4c0428d945316666666666666666/images/3a64bd37-955e-40cd-ab9e-129db56bc05d"
          }
        ]
      },
      "id": "3a64bd37-955e-40cd-ab9e-129db56bc05d"
    }
  ],
}
```

```
"OS-SRV-USG:terminated_at": null,
"accessIPv6": "",
"created": "2019-07-27T03:06:48Z",
"hostId": "31397656d6b318d01431f60c481d8425dc58eb421d237a385ceb80ee",
"OS-EXT-SRV-ATTR:hypervisor_hostname": "nova022@36",
"flavor": {
  "links": [
    {
      "rel": "bookmark",
      "href": "https://ecs.xxx/743b4c0428d945316666666666666666/flavors/s3.medium.4"
    }
  ],
  "id": "s3.medium.4"
},
"key_name": null,
"security_groups": [
  {
    "name": "sg-1e22"
  }
],
"config_drive": "",
"OS-EXT-STS:vm_state": "stopped",
"user_id": "f7e10ccf7abc4757b483895c3e06964a",
"OS-EXT-SRV-ATTR:instance_name": "instance-004a0eea",
"name": "test-dx",
"OS-SRV-USG:launched_at": "2019-07-27T03:07:05.000000",
"updated": "2019-08-13T03:12:38Z",
"status": "SHUTOFF"
}
],
"servers_links": [
  {
    "rel": "next",
    "href": "https://ecs.xxx/v2.1/743b4c0428d945316666666666666666/servers/detail?
limit=100&marker=62348919-0188-43ec-aae6-82c1e96c49eb"
  }
]
}
```

Step 3 Collect query results.

Repeat step [Step 1](#) until the returned query result is empty or the returned body does not contain the **servers_links** field. This indicates that all ECSs have been queried.

The collected ECSs are the desired query results.

----End

6.5 Modifying ECS Specifications

Scenarios

When ECS specifications fail to meet service requirements, they can be modified, for example, by upgrading the vCPUs and memory. Certain ECSs also support changing ECS types during specifications modification.

Constraints

- You can modify the ECS specifications only when the ECS is stopped.
- The EVS disk capacity of the ECS cannot be reduced during the specifications modification.

- When modifying the specifications of an ECS, you are not allowed to select sold-out vCPU and memory resources.
- ECS specifications (vCPU or memory) degrade deteriorates the ECS performance.
- Certain ECSs do not support specifications modification. To query the target flavors to which a specified ECS flavor can be changed, use API [Querying the Target ECS Flavors to Which a Flavor Can Be Changed](#).

Involved APIs

Modifying ECS specifications involves the following APIs:

- [Modifying the Specifications of an ECS](#)
- [Confirming ECS Specifications Modification](#)
- [Rolling Back ECS Specifications Modification](#)

Procedure

Step 1 Modify ECS specifications.

- API
URI format: POST /v2.1/{tenant_id}/servers/{server_id}/action
For details, see [Modifying the Specifications of an ECS](#).
- Example request

```
{
  "resize": {
    "flavorRef": "s6.medium.2"
  }
}
```
- Example response
N/A

Step 2 Confirm the specifications modification.

The ECS must be in **resized** state, **OS-EXT-STS:vm_state** being set to **resized**.

- API
URI format: POST /v2.1/{tenant_id}/servers/{server_id}/action
For details, see [Confirming ECS Specifications Modification](#).
- Example request

```
{
  "confirmResize": null
}
```
- Example response
N/A

Step 3 (Optional) Roll back the specifications modification.

Notes:

The ECS must be in **resized** state, **OS-EXT-STS:vm_state** being set to **resized**.

The data modified during specifications modification will be lost after the rollback.

- API
URI format: POST /v2.1/{tenant_id}/servers/{server_id}/action
For details, see [Rolling Back ECS Specifications Modification](#).
 - Example request

```
{
  "revertResize": null
}
```
 - Example response
N/A
- End

6.6 Attaching a Disk to an ECS

Scenarios

If the existing disks of an ECS fail to meet service requirements, for example, due to insufficient disk space or poor disk performance, you can attach more available disks to the ECS, or call the EVS disk creation API to create disks and attach them to the ECS. To attach an EVS disk to an ECS, you need to call the desired API.

A data disk can be attached by setting the **data_volumes** parameter during ECS creation or after the ECS is created. This section describes how to attach a disk to a created ECS.

Involved APIs

Attaching a disk involves the following APIs:

- [Creating EVS Disks](#)
- [Attaching a Disk to an ECS](#)
- [Querying Disk Attachment of an ECS](#)

Procedure

Step 1 Create an EVS disk.

1. Create an EVS disk.
 - API
URI format: POST /v2/{tenant_id}/volumes
For details, see [Creating EVS Disks](#).
 - Example request
POST: `https://{endpoint}/v2/74610f3a5ad941998e91f076297ecf27/volumes`
Obtain `{endpoint}` from the administrator.
Body:

```
{
  "volume": {
    "name": "openapi_vol02",
```

```
"availability_zone": "az_test_01",
"description": "create for api test",
"volume_type": "SSD",
"size": 40
}
}
```

– Example response

```
{
  "volume": {
    "status": "creating",
    "user_id": "f79791beca3c48159ac2553fff22e166",
    "attachments": [],
    "links": [
      {
        "href": "https://xxx/v2/74610f3a5ad941998e91f076297ecf27/volumes/51f45e08-1d4f-44c6-a4a9-84a488e0e8d3",
        "rel": "self"
      },
      {
        "href": "https://xxx/74610f3a5ad941998e91f076297ecf27/volumes/51f45e08-1d4f-44c6-a4a9-84a488e0e8d3",
        "rel": "bookmark"
      }
    ],
    "availability_zone": "az_test_01",
    "bootable": "false",
    "encrypted": false,
    "created_at": "2018-05-16T11:19:33.992984",
    "description": "create for api test",
    "updated_at": null,
    "volume_type": "SSD",
    "name": "openapi_vol02",
    "replication_status": "disabled",
    "consistencygroup_id": null,
    "source_vol_id": null,
    "snapshot_id": null,
    "shareable": false,
    "multiattach": false,
    "metadata": {
      "__system__volume_name": "openapi_vol02"
    },
    "id": "51f45e08-1d4f-44c6-a4a9-84a488e0e8d3",
    "size": 40
  }
}
```

2. Record the **volume** ID in the response.

Step 2 Attach the disk to the ECS.

- API

URI format: POST /v2.1/{tenant_id}/servers/{server_id}/os-volume_attachments

For details, see [Attaching a Disk to an ECS](#).

- Example request

`https://{endpoint}/v2.1/74610f3a5ad941998e91f076297ecf27/servers/9f4d9281-95e7-4915-a126-1ee597101e2e/os-volume_attachments`

Obtain `{endpoint}` from the administrator.

Body:

```
{
  "volumeAttachment": {
    "volumeId": "51f45e08-1d4f-44c6-a4a9-84a488e0e8d3",
    "device": "/dev/sdb"
  }
}
```

- Example response

```
{
  "volumeAttachment": {
    "id": "51f45e08-1d4f-44c6-a4a9-84a488e0e8d3",
    "volumeId": "51f45e08-1d4f-44c6-a4a9-84a488e0e8d3",
    "serverId": "9f4d9281-95e7-4915-a126-1ee597101e2e",
    "device": "/dev/sdb"
  }
}
```

Step 3 Verify the disk attachment.

- API

URI format: GET /v2.1/{tenant_id}/servers/{server_id}/os-volume_attachments

For details, see [Querying Disks Attached to an ECS](#).

- Example request

`https://{endpoint}/v2.1/74610f3a5ad941998e91f076297ecf27/servers/9f4d9281-95e7-4915-a126-1ee597101e2e/os-volume_attachments`

Obtain *{endpoint}* from the administrator.

- Example response

```
{
  "volumeAttachments": [
    {
      "volumeId": "4fc0b4cc-9d6c-431c-be70-3dfeec2ff6e0",
      "id": "4fc0b4cc-9d6c-431c-be70-3dfeec2ff6e0",
      "device": "/dev/sda",
      "serverId": "9f4d9281-95e7-4915-a126-1ee597101e2e"
    },
    {
      "volumeId": "51f45e08-1d4f-44c6-a4a9-84a488e0e8d3",
      "id": "51f45e08-1d4f-44c6-a4a9-84a488e0e8d3",
      "device": "/dev/sdb",
      "serverId": "9f4d9281-95e7-4915-a126-1ee597101e2e"
    }
  ]
}
```

----End

6.7 Attaching a NIC to an ECS

Scenarios

If an ECS requires multiple NICs, you can call the API for creating NICs and attach them to the ECS.

A NIC can be attached by setting the **nics** parameter during ECS creation or after the ECS is created. This section describes how to attach a NIC to a created ECS.

Involved APIs

Attaching a NIC involves the following APIs:

- [Creating a Network](#)
- [Creating a Subnet](#)
- [Creating a Port](#)

- [Adding a NIC to an ECS](#)
- [Query NICs of an ECS](#)

Procedure

Step 1 Create a NIC.

1. Create a network.
 - API
URI format: POST /v1/{project_id}/vpcs
For details, see [Creating a VPC](#).
 - Example request
POST https://{Endpoint}/v1/{project_id}/vpcs
Obtain *{endpoint}* from the administrator.

Body:

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

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

2. Record the **vpc** ID in the response.
3. Create a subnet.
  - API  
URI format: POST /v2.0/subnets  
For details, see [Creating a Subnet](#).
  - Example request  
POST: https://{endpoint}/v2.0/subnets  
Obtain *{endpoint}* from the administrator.

Body:

```
{
 "subnet": {
 "name": "testsubnet",
 "enable_dhcp": true,
 "network_id": "c4a3019d-1ac0-4cfb-a838-2342eb992e6b",
 "tenant_id": "74610f3a5ad941998e91f076297ecf27",
 "dns_nameservers": [
 "8.8.8.8",
 "8.8.8.7"
],
 "allocation_pools": [
 {

```



```
 "start": "10.0.10.2",
 "end": "10.0.10.254"
 }
],
 "host_routes": [],
 "ip_version": 4,
 "gateway_ip": "10.0.10.1",
 "cidr": "10.0.10.0/24"
}
}
```

– Example response

```
{
 "subnet": {
 "name": "testsubnet",
 "cidr": "10.0.10.0/24",
 "id": "877b5567-e8c6-4a0d-aabf-0f13da225fe5",
 "enable_dhcp": true,
 "network_id": "c4a3019d-1ac0-4cfb-a838-2342eb992e6b",
 "tenant_id": "74610f3a5ad941998e91f076297ecf27",
 "dns_nameservers": [
 "8.8.8.8",
 "8.8.8.7"
],
 "allocation_pools": [
 {
 "start": "10.0.10.2",
 "end": "10.0.10.254"
 }
],
 "host_routes": [],
 "ip_version": 4,
 "gateway_ip": "10.0.10.1"
 }
}
```

4. Record the **subnet** ID in the response.

5. Create a port.

– API

URI format: POST /v2.0/ports

For details, see [Creating a Port](#).

– Example request

POST: <https://{endpoint}/v2.0/ports>

Obtain *{endpoint}* from the administrator.

Body:

```
{
 "port": {
 "admin_state_up": true,
 "fixed_ips": [
 {
 "subnet_id": "877b5567-e8c6-4a0d-aabf-0f13da225fe5"
 }
],
 "name": "test",
 "network_id": "c4a3019d-1ac0-4cfb-a838-2342eb992e6b",
 "tenant_id": "74610f3a5ad941998e91f076297ecf27"
 }
}
```

– Example response

```
{
 "port": {
 "id": "7bf1c36f-e7f8-478a-be3d-674b486abbc4",
 "name": "test",
 }
}
```

```
"status": "DOWN",
"admin_state_up": true,
"fixed_ips": [
 {
 "subnet_id": "877b5567-e8c6-4a0d-aabf-0f13da225fe5",
 "ip_address": "10.0.10.233"
 }
],
"mac_address": "fa:16:3e:db:91:f6",
"network_id": "c4a3019d-1ac0-4cfb-a838-2342eb992e6b",
"tenant_id": "74610f3a5ad941998e91f076297ecf27",
"device_id": "",
"device_owner": "",
"security_groups": [
 "93031677-2895-4b83-855a-637e309aa9e6"
],
"extra_dhcp_opts": [],
"allowed_address_pairs": [],
"binding:vnic_type": "normal",
"binding:vif_details": {},
"binding:profile": {}
}
```

6. Record the **port** ID in the response.

### Step 2 Attach the NIC to the ECS.

- API

URI format: POST /v2.1/{tenant\_id}/servers/{server\_id}/os-interface

For details, see [Adding a NIC to an ECS](#).

- Example request

POST: <https://{endpoint}/v2.1/74610f3a5ad941998e91f076297ecf27/servers/9f4d9281-95e7-4915-a126-1ee597101e2e/os-interface>

Obtain *{endpoint}* from the administrator.

Body:

```
{
 "interfaceAttachment": {
 "port_id": "7bf1c36f-e7f8-478a-be3d-674b486abbc4"
 }
}
```

- Example response

```
{
 "interfaceAttachment": {
 "port_state": "ACTIVE",
 "fixed_ips": [
 {
 "subnet_id": "877b5567-e8c6-4a0d-aabf-0f13da225fe5",
 "ip_address": "10.0.10.233"
 }
],
 "port_id": "7bf1c36f-e7f8-478a-be3d-674b486abbc4",
 "net_id": "c4a3019d-1ac0-4cfb-a838-2342eb992e6b",
 "mac_addr": "fa:16:3e:db:91:f6"
 }
}
```

### Step 3 Verify the NIC attachment.

- API

URI format: GET /v2.1/{tenant\_id}/servers/{server\_id}/os-interface

For details, see [Querying ECS NICs](#).

- Example request

GET: `https://{endpoint}/v2.1/74610f3a5ad941998e91f076297ecf27/servers/9f4d9281-95e7-4915-a126-1ee597101e2e/os-interface`

Obtain `{endpoint}` from the administrator.

- Example response

```
{
 "interfaceAttachments": [
 {
 "port_state": "ACTIVE",
 "fixed_ips": [
 {
 "subnet_id": "46712fe4-25bd-4eae-874b-a528abfb76be",
 "ip_address": "192.168.0.50"
 }
],
 "port_id": "dd706739-b696-40be-a9f4-477ce478cb18",
 "net_id": "17251a8f-a671-4d7c-85d9-af5415962994",
 "mac_addr": "fa:16:3e:a5:e0:3c"
 },
 {
 "port_state": "ACTIVE",
 "fixed_ips": [
 {
 "subnet_id": "877b5567-e8c6-4a0d-aabf-0f13da225fe5",
 "ip_address": "10.0.10.233"
 }
],
 "port_id": "7bf1c36f-e7f8-478a-be3d-674b486abbc4",
 "net_id": "c4a3019d-1ac0-4cfb-a838-2342eb992e6b",
 "mac_addr": "fa:16:3e:db:91:f6"
 }
]
}
```

----End

## 6.8 Querying the EIP Associated with an ECS

### Scenarios

This section describes how to use ECS APIs and EIP APIs to query details about the EIP associated with an ECS.

### Involved APIs

Querying the EIP associated with an ECS involves the following APIs:

- [Step 1](#)
- [Step 2](#)

### Procedure

**Step 1** Query details about an ECS.

- API  
URI format: `GET /v1/{project_id}/cloudservers/{server_id}`  
For details, see [Querying Details About an ECS](#).





```
"bandwidth_size": 5,
"profile": {},
"enterprise_project_id": "0",
"ip_version": 4
 }
}
```

----End

# 7 Data Structure

---

## 7.1 Data Structure for Creating ECSs

### Notes

ECS APIs can be of V1 or V1.1. V1 APIs can only be used to create pay-per-use ECSs, while V1.1 APIs can be used to create both pay-per-use and yearly/monthly ECSs.

For the fields described in this section, use V1.1 APIs for yearly/monthly ECSs.

### Contents

- [publicip Field Description](#)
- [security\\_groups Field Description](#)
- [eip Field Description](#)
- [bandwidth Field Description](#)
- [ipv6\\_bandwidth Field Description](#)
- [extendparam Field Description for Assigning EIPs](#)
- [extendparam Field Description for Creating Disks](#)
- [extendparam Field Description for Creating ECSs](#)
- [metadata Field Description for Creating Disks](#)
- [metadata Field Description for Creating ECSs](#)
- [os:scheduler\\_hints Field Description](#)
- [server\\_tags Field Description](#)

### publicip Field Description

This field is used by the following APIs:

- Creating ECSs /v1/{project\_id}/cloudservers
- Creating ECSs: /v1.1/{project\_id}/cloudservers

**Table 7-1 publicip** field description

| Parameter             | Mandator<br>y | Type    | Description                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------|---------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                    | No            | String  | Specifies the ID of the existing EIP assigned to the ECS to be created. The value is in UUID format.<br>Only EIPs in <b>DOWN</b> state can be assigned.                                                                                                                                                                                                                                 |
| eip                   | No            | Object  | Specifies an EIP that will be automatically assigned to an ECS.<br>For details, see <a href="#">Table 7-3</a> .                                                                                                                                                                                                                                                                         |
| delete_on_termination | No            | Boolean | Specifies whether the EIP is released when the ECS where the EIP is bound is deleted. <ul style="list-style-type: none"><li>• <b>true</b>: The EIP is released when the ECS is deleted.</li><li>• <b>false</b>: The EIP is not released when the ECS is deleted.</li></ul> The default value is <b>false</b> .<br><b>NOTE</b><br>This parameter is available only for pay-per-use EIPs. |

 **NOTE**

Either **id** or **eip** in the **publicip** field can be configured.

## security\_groups Field Description

This field is used by the following APIs:

- Creating ECSs /v1/{project\_id}/cloudservers
- Creating ECSs: /v1.1/{project\_id}/cloudservers



**Table 7-2 security\_groups** field description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                            |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | No        | String | Specifies the ID of the security group to which an ECS is to be added. The configuration will take effect on the NICs of the ECS. You need to specify the ID of an existing security group in UUID format. Otherwise, the default security group will be used at the underlying layer. |

## eip Field Description

This field is used by the following APIs:

- Creating ECSs /v1/{project\_id}/cloudservers
- Creating ECSs: /v1.1/{project\_id}/cloudservers

**Table 7-3 eip** field description

| Parameter | Mandatory | Type   | Description                                                                                                             |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------|
| iptype    | Yes       | String | Specifies the EIP type.<br>For details, see the <b>publicip</b> field description in <a href="#">Assigning an EIP</a> . |
| bandwidth | Yes       | Object | Specifies the bandwidth of an EIP.<br>For details, see <a href="#">bandwidth Field Description</a> .                    |

## bandwidth Field Description

This field is used by the following APIs:

- Creating ECSs /v1/{project\_id}/cloudservers
- Creating ECSs: /v1.1/{project\_id}/cloudservers

Table 7-4 bandwidth field description

| Parameter  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| size       | No        | Integer | <p>Specifies the bandwidth size.</p> <p>Specifies the bandwidth (Mbit/s). The value ranges from 1 to 300.</p> <p>The specific range may vary depending on the configuration in each region. You can see the bandwidth range of each region on the management console.</p> <p>The minimum increment for bandwidth adjustment varies depending on the bandwidth range.</p> <ul style="list-style-type: none"><li>• The minimum increment is 1 Mbit/s if the allowed bandwidth ranges from 0 Mbit/s to 300 Mbit/s (with 300 Mbit/s included).</li><li>• The minimum increment is 50 Mbit/s if the allowed bandwidth ranges from 300 Mbit/s to 1000 Mbit/s (with 1000 Mbit/s included).</li><li>• The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1000 Mbit/s.</li></ul> <p><b>NOTE</b><br/>This parameter is mandatory when <b>sharetype</b> is set to <b>PER</b> and is optional when <b>sharetype</b> is set to <b>WHOLE</b> with an ID specified.</p> |
| sharetype  | Yes       | String  | <p>Specifies the bandwidth sharing type.</p> <p>Enumerated values: <b>PER</b> (indicates exclusive bandwidth) and <b>WHOLE</b> (indicates sharing)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| chargemode | No        | String  | <p>Specifies the bandwidth billing mode.</p> <ul style="list-style-type: none"><li>• If the field value is <b>traffic</b>, the ECS is billed by traffic.</li><li>• If the field value is others, creating the ECS will fail.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

## ipv6\_bandwidth Field Description

This field is used by the following APIs:

- Creating ECSs: /v1/{project\_id}/cloudservers
- Creating ECSs: /v1.1/{project\_id}/cloudservers

**Table 7-5 ipv6\_bandwidth** field description

| Parameter | Mandatory | Type   | Description                            |
|-----------|-----------|--------|----------------------------------------|
| id        | No        | String | Specifies the ID of an IPv6 bandwidth. |

## extendparam Field Description for Assigning EIPs

This field is used by the following API:

Creating ECSs /v1.1/{project\_id}/cloudservers

**Table 7-6 extendparam** field description for assigning EIPs

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| chargingMode | No        | String | Specifies the billing mode of an EIP.<br>Options: <ul style="list-style-type: none"> <li><b>prePaid</b>: indicates the yearly/monthly billing mode.</li> <li><b>postPaid</b>: indicates the pay-per-use billing mode.</li> </ul> <b>NOTE</b><br>If <b>sharetype</b> in the <b>bandwidth</b> parameter with an ID specified is set to <b>WHOLE</b> , only pay-per-use EIPs are allowed and parameter <b>prePaid</b> is unavailable. |

## extendparam Field Description for Creating Disks

This field is used by the following APIs:

- Creating ECSs /v1/{project\_id}/cloudservers
- Creating ECSs: /v1.1/{project\_id}/cloudservers

**Table 7-7 extendparam** field description for creating disks

| Parameter        | Mandatory | Type   | Description                                                                                                                |
|------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------|
| resourceSpecCode | No        | String | Specifies the code of the disk specifications, such as SATA, SAS, or SSD.<br><b>NOTE</b><br>This field has been discarded. |

| Parameter    | Mandatory | Type   | Description                                                                   |
|--------------|-----------|--------|-------------------------------------------------------------------------------|
| resourceType | No        | String | Specifies the resource type.<br><b>NOTE</b><br>This field has been discarded. |

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| snapshotId | No        | String | <p>Specifies the snapshot ID or ID of the original data disk contained in the full-ECS image.</p> <p><b>Application scenarios:</b></p> <p>This parameter is used if an ECS is created using a full-ECS image, and the image contains one or more data disks.</p> <p>If you use a full-ECS image to create an ECS, the system automatically restores the data type and data from the data disks in the image. The <b>snapshotId</b> parameter allows you to specify the disk type for the original data disk after restoration.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>You are advised to specify <b>snapshotId</b> for each original data disk.</li><li>If you are required to change a disk size, ensure that the changed disk size is greater than or equal to the size of the original data disk. Otherwise, restoring data of the original data disk will fail.</li><li>To set disk sharing, you need to specify the sharing attribute.</li><li>To set disk encryption, you need to specify the encryption attribute in the metadata field.</li></ul> <p><b>Working rules:</b></p> <p><b>snapshotId</b> uniquely identifies an original data disk contained in a full-ECS image. You can use <b>snapshotId</b> to obtain the information of the original data disk for data restoration.</p> <p><b>Obtaining snapshotId through the management console:</b></p> <p>Log in to the management console, choose <b>Elastic Volume Service &gt; Snapshot</b>. Then, use the name of the original data disk to find the snapshot ID or the original disk ID.</p> <p><b>Obtaining snapshotId through the API:</b></p> <p>If you have obtained the full-ECS image ID, obtain the Cloud Backup</p> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|-----------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>and Recovery (CBR) or Cloud Server Backup Service (CSBS) backup ID associated with the full-ECS image ID by following the instructions provided in the API for querying image details.</p> <ul style="list-style-type: none"> <li>• If CBR backup is used, use the CBR backup ID to obtain the backup. The <b>resource_id</b> or <b>snapshot_id</b> contained in the children field in the response is the desired <b>snapshotId</b>. For details, see the API for "Querying a Specified Backup" in <i>Cloud Backup and Recovery User Guide</i>.</li> <li>• If CSBS backup is used, use the CSBS backup ID to obtain the backup. The <b>source_volume_id</b> or <b>snapshot_id</b> contained in the <b>volume_backups</b> field in the response is the desired <b>snapshotId</b>. For details, see the API for "Querying a Single Backup" in <i>Cloud Server Backup Service User Guide</i>.</li> </ul> |

### extendparam Field Description for Creating ECSs

This field is used by the following APIs:

- Creating ECSs /v1/{project\_id}/cloudservers
- Creating ECSs: /v1.1/{project\_id}/cloudservers

**Table 7-8** extendparam field description for creating ECSs (for V1 APIs)

| Parameter    | Mandatory | Type    | Description                                                                                                                                                             |
|--------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| chargingMode | No        | Integer | <p>Specifies the billing mode.</p> <ul style="list-style-type: none"> <li>• <b>0</b>: indicates the pay-per-use billing mode. The default value is <b>0</b>.</li> </ul> |
| regionID     | No        | String  | <p>Specifies the ID of the region where the ECS resides.</p>                                                                                                            |

| Parameter             | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| support_auto_recovery | No        | Boolean | <p>Specifies whether automatic recovery is enabled on the ECS.</p> <ul style="list-style-type: none"> <li>• <b>true</b>: enables this function.</li> <li>• <b>false</b>: disables this function.</li> </ul> <p><b>NOTE</b><br/>This parameter is of boolean type. If a non-boolean character is imported, the parameter value is set to <b>false</b>.</p> <p>When <b>support_auto_recovery</b> is set to <b>false</b> and "<b>cond:compute</b>": <b>autorecovery</b> is unavailable in the flavor, automatic recovery is not supported.</p> <p>When <b>support_auto_recovery</b> is set to <b>false</b> and "<b>cond:compute</b>": <b>autorecovery</b> is available in the flavor, automatic recovery is supported.</p> <p>You can query whether "<b>cond:compute</b>": <b>autorecovery</b> is available in the flavor by referring to <a href="#">Querying Details About Flavors and Extended Flavor Information</a>.</p> |
| marketType            | No        | String  | <p>Specifies a spot ECS. When creating a spot ECS, set the parameter value to <b>spot</b>.</p> <p><b>NOTE</b><br/>This parameter takes effect only when <b>chargingMode</b> is set to <b>0</b> and <b>marketType</b> is set to <b>spot</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| spotPrice             | No        | String  | <p>Specifies the highest price per hour you accept for a spot ECS.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• This parameter takes effect only when <b>chargingMode</b> is set to <b>0</b> and <b>marketType</b> is set to <b>spot</b>.</li> <li>• When <b>chargingMode</b> is set to <b>0</b> and <b>marketType</b> is set to <b>spot</b>, if the <b>spotPrice</b> parameter is not specified, the pay-per-use price is used by default.</li> <li>• The <b>spotPrice</b> value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price.</li> </ul>                                                                                                                                                                                                                                                                                                     |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| diskPrior           | No        | String  | <p>Specifies whether to support the function of creating a disk and then ECS.</p> <ul style="list-style-type: none"> <li>• <b>true</b>: enables this function.</li> <li>• <b>false</b>: disables this function.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| spot_duration_hours | No        | Integer | <p>Specifies the predefined duration of the spot ECS.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• This parameter is mandatory for spot block ECSs and is valid only when <b>interruption_policy</b> is set to <b>immediate</b>.</li> <li>• The <b>spot_duration_hours</b> value must be greater than zero. Its maximum value is automatically set by the system and can be obtained from the <b>cond:spot_block:operation:longest_duration_hours</b> field of flavor parameter <b>extra_specs</b>.</li> </ul>                                                                                                                                                                                                    |
| spot_duration_count | No        | Integer | <p>Specifies the number of durations.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• This parameter is mandatory for spot block ECSs and is valid only when <b>spot_duration_hours</b> is greater than <b>0</b>.</li> <li>• If <b>spot_duration_hours</b> is set to a value smaller than <b>6</b>, <b>spot_duration_count</b> must be <b>1</b>.</li> <li>• If <b>spot_duration_hours</b> is set to <b>6</b>, <b>spot_duration_count</b> must be greater than or equal to <b>1</b>. The maximum value of <b>spot_duration_count</b> is automatically set by the system and can be obtained from the <b>cond:spot_block:operation:longest_duration_count</b> field of flavor parameter <b>extra_specs</b>.</li> </ul> |
| interruption_policy | No        | String  | <p>Specifies the spot ECS interruption policy. The parameter can only be set to <b>immediate</b> currently, meaning that the spot ECSs are released immediately.</p> <p><b>NOTE</b><br/>This parameter must be set to <b>immediate</b> for spot block ECSs.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CB_CSBS_BACKUP | No        | String | <p>Specifies a CSBS policy ID and CSBS vault ID.</p> <p>For example, a CSBS policy ID obtained on the console is fdcaa27d-5be4-4f61-afe3-09ff79162c04.</p> <p>A CSBS vault ID is 332a9408-463f-436a-9e92-78dad95d1ac4.</p> <p>The <b>CB_CSBS_BACKUP</b> value is <code>{"policy_id\": \"fdcaa27d-5be4-4f61-afe3-09ff79162c04\", \"vault_id\": \"332a9408-463f-436a-9e92-78dad95d1ac4\"}</code>.</p> |

**Table 7-9** extendparam field description for creating ECSs (for V1.1 APIs)

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| chargingMode | No        | String | <p>Specifies the billing mode.</p> <p>Options:</p> <ul style="list-style-type: none"> <li>• <b>prePaid</b>: indicates the yearly/monthly billing mode.</li> <li>• <b>postPaid</b>: indicates the pay-per-use billing mode.</li> <li>• The default value is <b>postPaid</b>.</li> </ul> <p><b>NOTE</b><br/>When <b>chargingMode</b> is set to <b>prePaid</b> (indicating that the created ECS is billed in yearly/monthly payments) and the ECS is logged in using an SSH key, <b>op_svc_userid</b> in <b>metadata</b> is mandatory.</p> |
| regionID     | No        | String | Specifies the ID of the region where the ECS resides.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| periodType   | No        | String | <p>Specifies the subscription period.</p> <p>Options:</p> <ul style="list-style-type: none"> <li>• <b>month</b>: indicates that the subscription is in the unit of month.</li> <li>• <b>year</b>: indicates that the subscription is in the unit of year.</li> </ul> <p><b>NOTE</b><br/>This parameter is valid and mandatory if <b>chargingMode</b> is set to <b>prePaid</b>.</p>                                                                                                                                                      |

| Parameter             | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| periodNum             | No        | Integer | Specifies the number of subscription periods.<br>Options: <ul style="list-style-type: none"><li>• If <b>periodType</b> is <b>month</b>, the value ranges from 1 to 9.</li><li>• If <b>periodType</b> is <b>year</b>, the value ranges from 1 to 3.</li></ul> <b>NOTE</b> <ul style="list-style-type: none"><li>• This parameter is valid and mandatory if <b>chargingMode</b> is set to <b>prePaid</b>.</li><li>• The parameter value must be a positive integer.</li></ul> |
| isAutoRenew           | No        | String  | Specifies whether auto renew is enabled. <ul style="list-style-type: none"><li>• <b>true</b>: indicates that auto renew is enabled.</li><li>• <b>false</b>: indicates that auto renew is disabled.</li></ul> <b>NOTE</b> <p>This parameter is valid when <b>chargingMode</b> is set to <b>prePaid</b>. If this parameter is not specified, auto renew is disabled by default.</p>                                                                                           |
| isAutoPay             | No        | String  | Specifies whether the order is automatically or manually paid. <ul style="list-style-type: none"><li>• <b>true</b>: The order will be automatically paid.</li><li>• <b>false</b>: The order must be manually paid.</li></ul> <b>NOTE</b> <p>This parameter is valid when <b>chargingMode</b> is set to <b>prePaid</b>. If this parameter is not specified, the order must be manually paid by default.</p>                                                                  |
| support_auto_recovery | No        | Boolean | Specifies whether to enable automatic ECS recovery. <ul style="list-style-type: none"><li>• <b>true</b>: enables this function.</li><li>• <b>false</b>: disables this function.</li></ul> <b>NOTE</b> <p>This parameter is of boolean type. If a non-boolean character is imported, the parameter value is set to <b>false</b>.</p>                                                                                                                                         |
| marketType            | No        | String  | Specifies a spot ECS. When creating a spot ECS, set the parameter value to <b>spot</b> .<br><b>NOTE</b> <p>This parameter takes effect only when <b>chargingMode</b> is set to <b>postPaid</b> and <b>marketType</b> is set to <b>spot</b>.</p>                                                                                                                                                                                                                             |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| spotPrice | No        | String | <p>Specifies the highest price per hour you accept for a spot ECS.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>This parameter takes effect only when <b>chargingMode</b> is set to <b>postPaid</b> and <b>marketType</b> is set to <b>spot</b>.</li> <li>When <b>chargingMode</b> is set to <b>postPaid</b> and <b>marketType</b> is set to <b>spot</b>, if the <b>spotPrice</b> parameter is not specified or specified to null, the pay-per-use price is used by default.</li> <li>The <b>spotPrice</b> value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price.</li> </ul> |

## metadata Field Description for Creating Disks

This field is used by the following APIs:

- Creating ECSs /v1/{project\_id}/cloudservers
- Creating ECSs: /v1.1/{project\_id}/cloudservers

**Table 7-10 metadata** field description for creating disks

| Parameter           | Mandatory | Type   | Description                                                                                                                                                                                                                                           |
|---------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| __system__encrypted | No        | String | <p>Specifies encryption in <b>metadata</b>. The value can be <b>0</b> (encryption disabled) or <b>1</b> (encryption enabled).</p> <p>If this parameter does not exist, the disk will not be encrypted by default.</p>                                 |
| __system__cmkid     | No        | String | <p>Specifies the CMK ID, which indicates encryption in <b>metadata</b>. This parameter is used with <b>__system__encrypted</b>.</p> <p><b>NOTE</b><br/>For details about how to obtain the CMK ID, see <a href="#">Querying the List of CMKs</a>.</p> |

## metadata Field Description for Creating ECSs

This field is used by the following APIs:

- Creating ECSs /v1/{project\_id}/cloudservers
- Creating ECSs: /v1.1/{project\_id}/cloudservers

**Table 7-11 metadata** reserved field description

| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                               |
|---------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| op_svc_userid | No        | String | Specifies the user ID.<br><b>NOTE</b><br>When <b>chargingMode</b> in the <b>extendparam</b> parameter is set to <b>prePaid</b> (indicating that the created ECS is billed in yearly/monthly payments) and the ECS is logged in using an SSH key, this field is mandatory. |
| agency_name   | No        | String | Specifies the IAM agency name.<br>An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for ECSs to access cloud services.                                                                              |

## os:scheduler\_hints Field Description

This field is used by the following APIs:

- Creating ECSs /v1/{project\_id}/cloudservers
- Creating ECSs: /v1.1/{project\_id}/cloudservers
- Creating ECSs (native API): /v2.1/{project\_id}/servers

**Table 7-12 os:scheduler\_hints** field description (request parameters)

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                            |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| group     | No        | String | Specifies an ECS group ID, which is in UUID format.<br>Obtain the parameter value from the console or by performing operations provided in <a href="#">Querying ECS Groups</a> .<br><b>NOTE</b><br>Ensure that the ECS group uses the anti-affinity policy. You are not advised to use other policies. |
| tenancy   | No        | String | Creates ECSs on a dedicated or shared host.<br>The value of this parameter can be <b>dedicated</b> or <b>shared</b> .                                                                                                                                                                                  |

| Parameter         | Mandatory | Type   | Description                                                                                                                    |
|-------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------|
| dedicated_host_id | No        | String | Specifies the dedicated host ID.<br><b>NOTE</b><br>A DeH ID takes effect only when <b>tenancy</b> is set to <b>dedicated</b> . |

**Table 7-13 os:scheduler\_hints** field description (response parameters)

| Parameter         | Type             | Description                                                                                                                                                                   |
|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| group             | Array of strings | Specifies an ECS group ID, which is in UUID format. Obtain the parameter value from the console or by performing operations provided in <a href="#">Querying ECS Groups</a> . |
| tenancy           | Array of strings | Creates ECSs on a dedicated or shared host. The value of this parameter can be <b>dedicated</b> or <b>shared</b> .                                                            |
| dedicated_host_id | Array of strings | Specifies the dedicated host ID.<br><b>NOTE</b><br>A DeH ID takes effect only when <b>tenancy</b> is set to <b>dedicated</b> .                                                |

## server\_tags Field Description

This field is used by the following APIs:

- Creating ECSs: /v1/{project\_id}/cloudservers
- Creating ECSs: /v1.1/{project\_id}/cloudservers

**Table 7-14 server\_tags** field description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                        |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | Specifies the tag key.<br>The key can contain a maximum of 36 Unicode characters. It cannot be left blank, or contain ASCII (0-31) or the following characters: =*<>\\, /<br>The tag key of an ECS must be unique. |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                          |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | Yes       | String | Specifies the tag value.<br>The value can contain a maximum of 43 Unicode characters and can be left blank. It cannot contain ASCII (0-31) or the following characters: =* < > \ \ / |

## 7.2 Data Structure for Querying Details About ECSs

Table 7-15 address parameters

| Parameter               | Type   | Description                                                                                                                                                                                    |
|-------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| version                 | String | Specifies the IP address version. <ul style="list-style-type: none"><li>• <b>4</b>: indicates IPv4.</li><li>• <b>6</b>: indicates IPv6.</li></ul>                                              |
| addr                    | String | Specifies the IP address.                                                                                                                                                                      |
| OS-EXT-IPS:type         | String | Specifies the IP address type. <ul style="list-style-type: none"><li>• <b>fixed</b>: indicates the private IP address.</li><li>• <b>floating</b>: indicates the floating IP address.</li></ul> |
| OS-EXT-IPS-MAC:mac_addr | String | Specifies the MAC address.                                                                                                                                                                     |
| OS-EXT-IPS:port_id      | String | Specifies the port ID corresponding to the IP address.                                                                                                                                         |

Table 7-16 flavor parameters

| Parameter | Type   | Description                                                                                                                                           |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | String | Specifies the ECS flavor ID.                                                                                                                          |
| name      | String | Specifies the ECS flavor name.                                                                                                                        |
| disk      | String | Specifies the system disk size in the ECS flavor. Value <b>0</b> indicates that the disk size is not limited.<br>The field is invalid in this system. |

| Parameter | Type   | Description                                       |
|-----------|--------|---------------------------------------------------|
| vcpus     | String | Specifies the number of vCPUs in the ECS flavor.  |
| ram       | String | Specifies the memory size (MB) in the ECS flavor. |

**Table 7-17 security\_groups** parameters

| Parameter | Type   | Description                                |
|-----------|--------|--------------------------------------------|
| name      | String | Specifies the security group name or UUID. |
| id        | String | Specifies the security group ID.           |

The following table lists parameters involved in the fault information attribute.

**Table 7-18 fault** parameters

| Parameter | Type    | Description                                                                      |
|-----------|---------|----------------------------------------------------------------------------------|
| message   | String  | Specifies the fault information.                                                 |
| code      | Integer | Specifies the error code.                                                        |
| details   | String  | Specifies the fault details.                                                     |
| created   | String  | Specifies the time when the fault occurred. The time is in ISO 8601 time format. |

**Table 7-19 os-extended-volumes:volumes\_attached** parameters

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                                                 |
|-----------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                    | String | Specifies the disk ID in UUID format.                                                                                                                                                                                                                                                                       |
| delete_on_termination | String | Specifies whether the disk is deleted with the ECS. <ul style="list-style-type: none"><li>● <b>true</b>: indicates that the disk is deleted with the ECS.</li><li>● <b>false</b>: indicates that the disk is not deleted with the ECS.</li></ul> This parameter is supported in microversion 2.3 and later. |

| Parameter | Type   | Description                                                                                                                                                               |
|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| bootIndex | String | Specifies the EVS disk boot sequence. <ul style="list-style-type: none"><li>• <b>0</b> indicates the system disk.</li><li>• Non-<b>0</b> indicates a data disk.</li></ul> |
| device    | String | Specifies the drive letter of the EVS disk, which is the device name of the EVS disk.                                                                                     |

**Table 7-20 metadata parameters**

| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                 |
|---------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| charging_mode       | String | Specifies the ECS billing mode. <ul style="list-style-type: none"><li>• <b>0</b>: pay-per-use payment (postpaid)</li><li>• <b>1</b>: yearly/monthly payment (prepaid)</li><li>• <b>2</b>: spot price billing mode</li></ul>                                                                 |
| metering.order_id   | String | Specifies the order ID for a yearly/monthly ECS.                                                                                                                                                                                                                                            |
| metering.product_id | String | Specifies the product ID for a yearly/monthly ECS.                                                                                                                                                                                                                                          |
| vpc_id              | String | Specifies the ID of the VPC where the ECS is located.                                                                                                                                                                                                                                       |
| EcmResStatus        | String | Specifies the ECS frozen status. <ul style="list-style-type: none"><li>• <b>normal</b>: The ECS is not frozen.</li><li>• <b>freeze</b>: The ECS has been frozen.</li></ul> <b>NOTE</b><br>The system automatically adds this field, which is mandatory, after an ECS is frozen or unfrozen. |
| metering.image_id   | String | Specifies the image ID of the ECS.                                                                                                                                                                                                                                                          |
| metering.imagetype  | String | Specifies the image type. The following types are supported: <ul style="list-style-type: none"><li>• Public image: The value is <b>gold</b>.</li><li>• Private image: The value is <b>private</b>.</li><li>• Shared image: The value is <b>shared</b>.</li></ul>                            |



| Parameter                 | Type   | Description                                                                                                                                                                                                                                                       |
|---------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| metering.resourcecode     | String | Specifies the resource specifications of the ECS.                                                                                                                                                                                                                 |
| metering.resourcetype     | String | Specifies the resource type of the ECS.<br>Value <b>1</b> indicates ECSs.                                                                                                                                                                                         |
| cascaded.instance_extinfo | String | Specifies the extended information about the internal ECSs.                                                                                                                                                                                                       |
| image_name                | String | Specifies the image name of the ECS.                                                                                                                                                                                                                              |
| agency_name               | String | Specifies the IAM agency name.<br>An agency is created by a tenant administrator on IAM to provide temporary credentials for ECSs to access cloud services.                                                                                                       |
| os_bit                    | String | Specifies the number of bits in the operating system: <b>32</b> or <b>64</b> .                                                                                                                                                                                    |
| os_type                   | String | Specifies the OS type. The value can be <b>Linux</b> .                                                                                                                                                                                                            |
| lockCheckEndpoint         | String | Specifies the callback URL for checking whether ECS locking is enabled. <ul style="list-style-type: none"><li>• If ECS locking is enabled, the ECS is locked.</li><li>• If ECS locking is disabled, the ECS is unlocked, and invalid locks are deleted.</li></ul> |
| lockSource                | String | Specifies the lock source. <ul style="list-style-type: none"><li>• Order lock (<b>ORDER</b>)</li></ul>                                                                                                                                                            |
| lockSourceId              | String | Specifies the ECS lock source ID.<br>If <b>lockSource</b> is set to <b>ORDER</b> , <b>lockSourceId</b> is the order ID.                                                                                                                                           |
| lockScene                 | String | Specifies the ECS lock type. <ul style="list-style-type: none"><li>• <b>TO_PERIOD_LOCK</b>: changing from pay-per-use to yearly/monthly</li></ul>                                                                                                                 |

| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| virtual_env_type | String | <ul style="list-style-type: none"><li>If an ECS is created using an iOS image, the value of this parameter is <b>Isolmage</b>.</li><li>If an ECS is created using a non-iOS image, the value of this parameter is <b>FusionCompute</b> in versions earlier than 19.5.0, and this parameter will be unavailable in versions later than 19.5.0.</li></ul> <b>NOTE</b> <ul style="list-style-type: none"><li>The <b>virtual_env_type</b> cannot be added, deleted, or modified.</li></ul> |

**Table 7-21 sys\_tags** parameters

| Parameter | Type   | Description                     |
|-----------|--------|---------------------------------|
| key       | String | Specifies the system tag key.   |
| value     | String | Specifies the system tag value. |

**Table 7-22 image** parameters

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

## 7.3 Data Structure for Query Details About Specifications

### os\_extra\_specs (flavor) Field Description

This field is used by the following APIs:

- Querying details about flavors and extended flavor information: /v1/{project\_id}/cloudservers/flavors
- Querying details about the extended ECS flavor field: /v1/{project\_id}/flavors/{flavor\_id}/os-extra\_specs

**Table 7-23** `os_extra_specs` field description (only common parameters are listed)

| Parameter                                    | Type   | Description                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>ecs:performance_type</code>            | String | Specifies the ECS flavor type: <ul style="list-style-type: none"><li>• <b>normal</b>: general computing</li><li>• <b>cpu1</b>: computing I</li><li>• <b>cpu2</b>: computing II</li><li>• <b>computingv3</b>: general computing-plus</li><li>• <b>highmem</b>: memory-optimized</li><li>• <b>saphana</b>: large-memory HANA ECS</li><li>• <b>diskintensive</b>: disk-intensive</li></ul> |
| <code>hw:numa_nodes</code>                   | String | Specifies the number of physical CPUs of the host. The ECS flavor determines whether to return the parameter value.                                                                                                                                                                                                                                                                     |
| <code>resource_type</code>                   | String | Specifies the resource type. <b>resource_type</b> is used to differentiate between the types of the physical servers accommodating ECSs.                                                                                                                                                                                                                                                |
| <code>hpet_support</code>                    | String | Specifies whether to enable the high-precision clock on the ECS. <b>true</b> indicates to enable the function, and <b>false</b> indicates to disable the function. The ECS specifications determine whether to return the parameter value.                                                                                                                                              |
| <code>instance_nic:type</code>               | String | Specifies the NIC type. The value of this parameter is consistently <b>enhanced</b> , indicating that network enhancement ECSs are to be created.                                                                                                                                                                                                                                       |
| <code>instance_nic:instance_bandwidth</code> | String | Specifies the maximum bandwidth in the unit of Mbit/s. The maximum value of this parameter is <b>10000</b> .                                                                                                                                                                                                                                                                            |
| <code>instance_nic:max_count</code>          | String | Specifies the maximum number of NICs. The maximum value of this parameter is 4.                                                                                                                                                                                                                                                                                                         |

| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| quota:local_disk | String | <p>The value of this parameter is in format of "{type}:{count}:{size}:{safeFormat}", where,</p> <ul style="list-style-type: none"> <li>● <b>type</b>: indicates the disk type, which can only be HDD.</li> <li>● <b>count</b>: indicates the number of local disks. <ul style="list-style-type: none"> <li>- For D1 ECSs, the value can be 3, 6, 12, or 24.</li> <li>- For D2 ECSs, the value can be 2, 4, 8, 12, 16, or 24.</li> <li>- For D3 ECSs, the value can be 2, 4, 8, 12, 16, 24, or 28.</li> </ul> </li> <li>● <b>size</b>: indicates the capacity of a single disk, in GB. Currently, only <b>1675</b> is supported. The actual disk size is <b>1800</b>, and the available size after formatting is <b>1675</b>.</li> <li>● <b>safeFormat</b>: indicates whether the local disks of the ECS are securely formatted. <ul style="list-style-type: none"> <li>- For D1 ECSs, the value is <b>FALSE</b>.</li> <li>- For D2 or D3 ECSs, the value is <b>True</b>.</li> </ul> </li> </ul> <p><b>NOTE</b><br/>This field is dedicated for disk-intensive ECSs.</p>                                       |
| quota:nvme_ssd   | String | <p>The value of this parameter is in the format of {type}:{spec}:{num}:{size}:{safeFormat}:</p> <ul style="list-style-type: none"> <li>● <b>type</b>: indicates the capacity of a single NVME SSD disk attached to the ECS, which can only be 1.6 TB or 3.2 TB.</li> <li>● <b>spec</b>: indicates the specification of the NVME SSD disk, which can be <b>large</b> or <b>small</b>. If the value is <b>large</b>, only I3 ECSs are supported.</li> <li>● <b>num</b>: indicates the number of partitions on the disk.</li> <li>● <b>size</b>: indicates the capacity, in the unit of GB, of the disk used by the guest user. If the <b>spec</b> value is <b>large</b>, the value of this parameter is the size of a single disk attached to the ECS. If the <b>spec</b> value is <b>small</b>, the value of this parameter is 1/4 or 1/2 of the specification.</li> <li>● <b>safeFormat</b>: indicates whether the local disks of the ECS are securely formatted. If the value is <b>True</b>, only I3 ECSs are supported.</li> </ul> <p><b>NOTE</b><br/>This field is dedicated for ultra-high I/O ECSs.</p> |

| Parameter                      | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| extra_spec:io:persistent_grant | String | <p>Specifies whether persistence is supported. The value of this parameter is <b>true</b>.</p> <p>This parameter indicates that the ECS is persistently authorized to access the storage.</p> <p><b>NOTE</b><br/>This field is dedicated for disk-intensive D1 ECSs.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| ecs:generation                 | String | <p>Specifies the generation of an ECS type.</p> <p>For example, <b>3</b> in <b>s3</b> indicates the general-purpose third-generation ECSs. For details about flavors and generations, see <a href="#">ECS Specifications</a> in <i>Elastic Cloud Server User Guide</i>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| ecs:virtualization_env_types   | String | <p>Specifies a virtualization type.</p> <ul style="list-style-type: none"><li>• If the parameter value is <b>FusionCompute</b>, the ECS uses Xen virtualization.</li><li>• If the parameter value is <b>CloudCompute</b>, the ECS uses KVM virtualization.</li></ul> <p><b>NOTE</b><br/>This field is optional.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| cond:operation:status          | String | <p>This parameter takes effect region-wide. If an AZ is not configured in the <b>cond:operation:az</b> parameter, the value of this parameter is used by default. If this parameter is not set or used, the meaning of <b>normal</b> applies. Options:</p> <ul style="list-style-type: none"><li>• <b>normal</b>: indicates normal commercial use of the flavor.</li><li>• <b>abandon</b>: indicates that the flavor has been canceled (not displayed).</li><li>• <b>sellout</b>: indicates that the flavor has been sold out.</li><li>• <b>obt</b>: indicates that the flavor is under open beta testing (OBT).</li><li>• <b>obt_sellout</b>: indicates that the OBT resources are sold out.</li><li>• <b>promotion</b>: indicates the recommended flavor (commercial use, which is similar to <b>normal</b>).</li></ul> |

| Parameter                  | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cond:operation:az          | String | <p>This parameter takes effect AZ-wide. If an AZ is not configured in this parameter, the value of the <b>cond:operation:status</b> parameter is used by default. This parameter is in the format of "az(xx)". The value in parentheses is the flavor status in an AZ. If the parentheses are left blank, the configuration is invalid. The <b>cond:operation:az</b> options are the same as the <b>cond:operation:status</b> options.</p> <p>For example, a flavor is for commercial use in AZs 0 and 3, sold out in AZ 1, for OBT in AZ 2, and is canceled in other AZs. Then, set parameters as follows:</p> <ul style="list-style-type: none"> <li>• <b>cond:operation:status: abandon</b></li> <li>• <b>cond:operation:az: az0(normal), az1(sellout), az2(obt), az3(normal)</b></li> </ul> <p><b>NOTE</b><br/>Configure this parameter if the flavor status in an AZ is different from the <b>cond:operation:status</b> value.</p> |
| quota:max_rate             | String | <p>Specifies the maximum bandwidth.</p> <ul style="list-style-type: none"> <li>• Unit: Mbit/s. If a bandwidth is in the unit of Gbit/s, it must be divided by 1000.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| quota:min_rate             | String | <p>Specified the assured bandwidth.</p> <ul style="list-style-type: none"> <li>• Unit: Mbit/s. If a bandwidth is in the unit of Gbit/s, it must be divided by 1000.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| quota:max_pps              | String | <p>Specifies the maximum intranet PPS.</p> <ul style="list-style-type: none"> <li>• Unit: number. If a value is in the unit of 10000, it must be divided by 10000.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| cond:operation:charge:stop | String | <p>Specifies whether fees are billed for a stopped ECS.</p> <ul style="list-style-type: none"> <li>• No fees by default</li> <li>• <b>charge</b></li> <li>• <b>free</b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| cond:operation:charge      | String | <p>Specifies a billing type.</p> <ul style="list-style-type: none"> <li>• All the billing types are supported if this parameter is not set.</li> <li>• <b>period</b>: The billing type is yearly or monthly.</li> <li>• <b>demand</b>: The billing type is pay-per-use.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| cond:spot:operation:az     | String | <p>Specifies the AZ for the flavors in spot pricing billing mode.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| cond:operation:roles       | String | <p>Specifies the allowed roles.<br/>Matched user tag (roles op_gatexxx), which is available to all users if this parameter is not set</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Parameter                   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cond:spot:operation:status  | String | Specifies the status of a flavor in spot pricing billing mode. <ul style="list-style-type: none"><li>• Equivalent to <b>abandon</b> if this parameter is not set.</li><li>• <b>normal</b>: indicates commercial use of the flavor.</li><li>• <b>abandon</b>: indicates that the flavor has been terminated.</li><li>• <b>sellout</b>: indicates that the flavor has been sold out.</li><li>• <b>obt</b>: indicates that the flavor is at OBT phase (not supported currently).</li><li>• <b>private</b>: indicates that the flavor is private, which is available only to specified users (not supported currently).</li><li>• <b>test</b>: indicates that the flavor is at free trial phase (not supported currently).</li><li>• <b>promotion</b>: indicates that the flavor is recommended.</li></ul> |
| cond:network                | String | Specifies network constraints.<br>Network features are supported. If this parameter is not set, the default configuration on the console is used.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| cond:storage                | String | Specifies storage constraints. <ul style="list-style-type: none"><li>• Disk features are supported. If this parameter is not set, the default configuration on the console is used.</li><li>• <b>scsi</b>: indicates that SCSI is supported.</li><li>• <b>localdisk</b>: indicates that local disks are supported.</li><li>• <b>ib</b>: indicates that IB is supported.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                      |
| cond:compute:live_resizable | String | Specifies computing constraints. <ul style="list-style-type: none"><li>• If the value of this parameter is <b>true</b>, online capacity expansion is supported.</li><li>• If this parameter does not exist or its value is set to <b>false</b>, online capacity expansion is not supported.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| cond:compute                | String | Specifies computing constraints. <ul style="list-style-type: none"><li>• <b>autorecovery</b>: indicates that automatic recovery is supported.</li><li>• If this parameter does not exist, automatic recovery is not supported.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| ecs:instance_architecture   | String | Specifies the CPU architecture corresponding to the flavor. This parameter is returned only for Kunpeng ECSs.<br>The value <b>arm64</b> indicates that the CPU architecture is Kunpeng.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Parameter     | Type   | Description                             |
|---------------|--------|-----------------------------------------|
| info:gpu:name | String | Specifies the number and names of GPUs. |
| info:cpu:name | String | Specifies the CPU name.                 |
| quota:gpu     | String | Specifies the GPU name.                 |



# 8 Permissions and Supported Actions

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## 8.1 Introduction

You can use Identity and Access Management (IAM) for fine-grained permissions management of your ECS. If your Huawei Cloud account does not need individual IAM users, you can skip this section.

New IAM users do not have any permissions assigned by default. You need to first add them to one or more groups and attach policies or roles to these groups. The users then inherit permissions from the groups and can perform specified operations on cloud services based on the permissions they have been assigned.

You can grant users permissions by using **roles** and **policies**. Roles are provided by IAM to define service-based permissions that match users' job responsibilities. Policies define API-based permissions for operations on specific resources under certain conditions, allowing for more fine-grained, secure access control of cloud resources.

### NOTE

If you want to allow or deny the access to an API, use policy-based authorization.

Each account has all the permissions required to call all APIs, but IAM users must be assigned the required permissions. The permissions required for calling an API are determined by the actions supported by the API. Only users who have been granted permissions allowing the actions can call the API successfully. For example, if an IAM user wants to query ECSs using an API, the user must have been granted permissions that allow the **ecs:servers:list** action.

## Supported Actions

ECS provides system-defined policies that can be directly used in IAM. You can also create custom policies to supplement system-defined policies for more refined access control. Operations supported by policies are specific to APIs. The following are common concepts related to policies:

- Permissions: statements in a policy that allow or deny certain operations
- APIs: REST APIs that can be called by a user who has been granted specific permissions

- **Actions:** specific operations that are allowed or denied
- **Dependencies:** actions which a specific action depends on. When allowing an action for a user, you also need to allow any existing action dependencies for that user.
- **IAM projects/Enterprise projects:** the authorization scope of a custom policy. A custom policy can be applied to IAM projects or enterprise projects or both. Policies that contain actions for both IAM and enterprise projects can be used and applied for both IAM and Enterprise Management. Policies that contain actions only for IAM projects can be used and applied to IAM only.

For details about the differences between IAM and enterprise projects, see [Differences Between IAM and Enterprise Management](#).

 **NOTE**

√: supported; x: not supported

ECS supports the following actions that can be defined in custom policies:

- [Lifecycle Management](#)
- [ECS Status Management](#)
- [Batch Operations](#)
- [Network Management](#)
- [Image Management](#)
- [Security Group Management](#)
- [Specifications Query](#)
- [NIC Management](#)
- [Disk Management](#)
- [Metadata Management](#)
- [Tenant Quota Management](#)
- [SSH Key Management](#)
- [Floating IP Address Management](#)
- [ECS Group Management](#)
- [ECS Management Through Console](#)
- [AZ Management](#)
- [Tag Management](#)

## 8.2 Lifecycle Management

| Permission                      | API                                           | Action                                                                                                                                                       | Dependencies                                                                                                                                           |
|---------------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Creating an ECS                 | POST /v1.1/{project_id}/cloudservers          | <ul style="list-style-type: none"> <li>Assigning a New EIP<br/>ecs:cloudServers:create</li> <li>Using an Existing EIP<br/>ecs:cloudServers:create</li> </ul> | <ul style="list-style-type: none"> <li>Assigning a New EIP<br/>vpc:publicIps:create</li> <li>Using an Existing EIP<br/>vpc:publicIps:update</li> </ul> |
| Creating an ECS (pay-per-use)   | POST /v1/{project_id}/cloudservers            | <ul style="list-style-type: none"> <li>Assigning a New EIP<br/>ecs:cloudServers:create</li> <li>Using an Existing EIP<br/>ecs:cloudServers:create</li> </ul> | <ul style="list-style-type: none"> <li>Assigning a New EIP<br/>vpc:publicIps:create</li> <li>Using an Existing EIP<br/>vpc:publicIps:update</li> </ul> |
| Deleting ECSs                   | POST /v1/{project_id}/cloudservers/delete     | ecs:cloudServers:delete                                                                                                                                      | -                                                                                                                                                      |
| Displaying details about ECSs   | GET /v1/{project_id}/cloudservers/detail      | ecs:cloudServers:list                                                                                                                                        | -                                                                                                                                                      |
| Displaying details about an ECS | GET /v1/{project_id}/cloudservers/{server_id} | ecs:cloudServers:get                                                                                                                                         | -                                                                                                                                                      |
| Modifying an ECS                | PUT /v1/{project_id}/cloudservers/{server_id} | ecs:cloudServers:put                                                                                                                                         | -                                                                                                                                                      |

| Permission                                           | API                                        | Action           | Dependencies                                                                                                                                                                                                                                           |
|------------------------------------------------------|--------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Querying details about ECSs (native OpenStack API)   | GET /v2.1/{project_id}/servers/detail      | ecs:servers:list | ecs:servers:get<br>ecs:serverVolumes:use<br>ecs:diskConfigs:use<br>ecs:securityGroups:use<br>ecs:serverKeypairs:get<br>vpc:securityGroups:get<br>vpc:securityGroupRules:get<br>vpc:networks:get<br>vpc:subnets:get<br>vpc:ports:get<br>vpc:routers:get |
| Querying ECSs (native OpenStack API)                 | GET /v2.1/{project_id}/servers             | ecs:servers:list | -                                                                                                                                                                                                                                                      |
| Querying details about an ECS (native OpenStack API) | GET /v2.1/{project_id}/servers/{server_id} | ecs:servers:get  | ecs:serverVolumes:use<br>ecs:diskConfigs:use<br>ecs:securityGroups:use<br>ecs:serverKeypairs:get<br>vpc:securityGroups:get<br>vpc:securityGroupRules:get<br>vpc:networks:get<br>vpc:subnets:get<br>vpc:ports:get<br>vpc:routers:get                    |

| Permission                             | API                                                                        | Action             | Dependencies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------|----------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Creating an ECS (native OpenStack API) | POST /v2.1/{project_id}/servers<br>POST /v2.1/{project_id}/os-volumes_boot | ecs:servers:create | ecs:servers:get<br>ecs:serverInterfaces:use<br>ecs:serverInterfaces:get<br>ecs:flavors:get<br>ecs:securityGroups:use<br>evs:volumes:list<br>evs:volumes:get<br>evs:volumes:create<br>evs:volumes:attach<br>evs:volumes:manage<br>vpc:securityGroups:get<br>vpc:networks:get<br>vpc:networks:update<br>vpc:subnets:get<br>vpc:subnets:update<br>vpc:ports:create<br>vpc:ports:update<br>vpc:ports:get<br>vpc:ports:delete<br>vpc:networks:create<br>vpc:subnets:create<br>vpc:routers:get<br>vpc:routers:update<br>ims:images:list<br>ims:images:get |
| Deleting an ECS (native OpenStack API) | DELETE /v2.1/{project_id}/servers/{server_id}                              | ecs:servers:delete | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Permission                              | API                                        | Action             | Dependencies    |
|-----------------------------------------|--------------------------------------------|--------------------|-----------------|
| Modifying an ECS (native OpenStack API) | PUT /v2.1/{project_id}/servers/{server_id} | ecs:servers:update | ecs:servers:get |

## 8.3 ECS Status Management

| Permission                                           | API                                                                                                                      | Action                    | Dependencies     |
|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------|
| Changing an ECS OS                                   | POST /v2/{project_id}/cloudservers/{server_id}/changeos<br>POST /v1/{project_id}/cloudservers/{server_id}/changeos       | ecs:cloudServers:changeOS | -                |
| Reinstalling an ECS OS                               | POST /v2/{project_id}/cloudservers/{server_id}/reinstallos<br>POST /v1/{project_id}/cloudservers/{server_id}/reinstallos | ecs:cloudServers:rebuild  | -                |
| Modifying the specifications of an ECS               | POST /v1.1/{project_id}/cloudservers/{server_id}/resize                                                                  | ecs:cloudServers:resize   | -                |
| Modifying the specifications of an ECS (pay-per-use) | POST /v1/{project_id}/cloudservers/{server_id}/resize                                                                    | ecs:cloudServers:resize   | -                |
| Cold migrating an ECS                                | POST /v1/{project_id}/cloudservers/{server_id}/migrate                                                                   | ecs:cloudServers:migrate  | -                |
| Starting an ECS (native OpenStack API)               | POST /v2.1/{project_id}/servers/{server_id}/action                                                                       | ecs:servers:start         | ecs:servers:list |
| Stopping an ECS (native OpenStack API)               | POST /v2.1/{project_id}/servers/{server_id}/action                                                                       | ecs:servers:stop          | ecs:servers:list |

| Permission                                                    | API                                                | Action             | Dependencies                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------|----------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Restarting an ECS (native OpenStack API)                      | POST /v2.1/{project_id}/servers/{server_id}/action | ecs:servers:reboot | ecs:servers:list                                                                                                                                                                                                                                                  |
| Modifying the specifications of an ECS (native OpenStack API) | POST /v2.1/{project_id}/servers/{server_id}/action | ecs:servers:resize | ecs:servers:list<br>ecs:flavors:get<br>ims:images:get<br>evs:volumes:list<br>evs:volumes:create<br>evs:volumes:get<br>evs:volumes:attach<br>evs:volumes:detach<br>evs:volumes:manage<br>vpc:ports:get<br>vpc:ports:update<br>vpc:ports:create<br>vpc:ports:delete |
| Locking an ECS (native OpenStack API)                         | POST /v2.1/{project_id}/servers/{server_id}/action | ecs:servers:lock   | ecs:servers:list                                                                                                                                                                                                                                                  |
| Unlocking an ECS (native OpenStack API)                       | POST /v2.1/{project_id}/servers/{server_id}/action | ecs:servers:unlock | ecs:servers:list                                                                                                                                                                                                                                                  |

## 8.4 Batch Operations

| Permission               | API                                       | Action                | Dependencies |
|--------------------------|-------------------------------------------|-----------------------|--------------|
| Stopping ECSs in a batch | POST /v1/{project_id}/cloudservers/action | ecs:cloudServers:stop | -            |

| Permission                                                        | API                                                         | Action                              | Dependencies |
|-------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------|--------------|
| Restarting ECSs in a batch                                        | POST /v1/{project_id}/cloudservers/action                   | ecs:cloudServers:reboot             | -            |
| Starting ECSs in a batch                                          | POST /v1/{project_id}/cloudservers/action                   | ecs:cloudServers:start              | -            |
| Modifying ECSs in a batch                                         | PUT /v1/{project_id}/cloudservers/server-name               | ecs:cloudServers:put                | -            |
| Attaching a specified shared EVS disk to multiple ECSs in a batch | POST /v1/{project_id}/batchaction/attachvolumes/{volume_id} | ecs:cloudServers:attachSharedVolume | -            |

## 8.5 Network Management

| Permission                               | API                                | Action            | Dependencies     |
|------------------------------------------|------------------------------------|-------------------|------------------|
| Querying networks (native OpenStack API) | GET /v2.1/{project_id}/os-networks | ecs:networks:list | vpc:networks:get |



## 8.6 Image Management

| Permission                               | API                                                | Action                  | Dependencies                                                                                                                                |
|------------------------------------------|----------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Creating an image (native OpenStack API) | POST /v2.1/{project_id}/servers/{server_id}/action | ecs:servers:createimage | evs:volumes:get<br>evs:snapshots:create<br>ims:images:create<br>ims:images:get<br>ims:images:list<br>ims:images:update<br>ims:images:delete |

## 8.7 Security Group Management

| Permission                                                     | API                                                              | Action                 | Dependencies                                                                     |
|----------------------------------------------------------------|------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------|
| Creating a security group (native OpenStack API)               | POST /v2.1/{project_id}/os-security-groups                       | ecs:securityGroups:use | vpc:securityGroups:get<br>vpc:securityGroups:create<br>vpc:securityGroups:update |
| Deleting a security group (native OpenStack API)               | DELETE /v2.1/{project_id}/os-security-groups/{security_group_id} | ecs:securityGroups:use | vpc:securityGroups:get<br>vpc:securityGroups:delete<br>vpc:securityGroups:update |
| Querying details about a security group (native OpenStack API) | GET /v2.1/{project_id}/os-security-groups/{security_group_id}    | ecs:securityGroups:use | vpc:securityGroups:get                                                           |

| Permission                                                              | API                                                                        | Action                 | Dependencies                                                                                                       |
|-------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------|
| Querying security groups (native OpenStack API)                         | GET /v2.1/{project_id}/os-security-groups                                  | ecs:securityGroups:use | vpc:securityGroups:get                                                                                             |
| Creating a security group rule (native OpenStack API)                   | POST /v2.1/{project_id}/os-security-group-rules                            | ecs:securityGroups:use | vpc:securityGroups:get<br>vpc:securityGroups:update<br>vpc:securityGroupRules:get<br>vpc:securityGroupRules:create |
| Deleting a security group rule (native OpenStack API)                   | DELETE /v2.1/{project_id}/os-security-group-rules/{security_group_rule_id} | ecs:securityGroups:use | vpc:securityGroups:get<br>vpc:securityGroups:update<br>vpc:securityGroupRules:get<br>vpc:securityGroupRules:delete |
| Updating information about a security group (native OpenStack API)      | PUT /v2.1/{project_id}/os-security-groups/{security_group_id}              | ecs:securityGroups:use | vpc:securityGroups:get<br>vpc:securityGroups:update                                                                |
| Querying security groups to which an ECS belongs (native OpenStack API) | GET /v2.1/{project_id}/servers/{server_id}/os-security-groups              | ecs:securityGroups:use | vpc:securityGroups:get                                                                                             |

| Permission                                     | API                                                | Action                 | Dependencies                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------|----------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Adding a security group (native OpenStack API) | POST /v2.1/{project_id}/servers/{server_id}/action | ecs:securityGroups:use | ecs:servers:get<br>ecs:servers:list<br>ecs:serverVolumes:use<br>ecs:diskConfigs:use<br>ecs:serverKeypairs:get<br>vpc:securityGroups:get<br>vpc:securityGroups:create<br>vpc:securityGroups:update<br>vpc:securityGroupRules:get<br>vpc:networks:get<br>vpc:subnets:get<br>vpc:routers:get<br>vpc:ports:get<br>vpc:ports:update |

| Permission                                       | API                                                | Action                 | Dependencies                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------|----------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Removing a security group (native OpenStack API) | POST /v2.1/{project_id}/servers/{server_id}/action | ecs:securityGroups:use | ecs:servers:get<br>ecs:servers:list<br>ecs:serverVolumes:use<br>ecs:diskConfigs:use<br>ecs:serverKeypairs:get<br>vpc:securityGroups:get<br>vpc:securityGroups:delete<br>vpc:securityGroups:update<br>vpc:securityGroupRules:get<br>vpc:networks:get<br>vpc:subnets:get<br>vpc:routers:get<br>vpc:ports:get<br>vpc:ports:update |

## 8.8 Specifications Query

| Permission                                                       | API                                              | Action                     | Dependencies |
|------------------------------------------------------------------|--------------------------------------------------|----------------------------|--------------|
| Querying specifications and expansion details about ECSs         | GET /v1/{project_id}/cloudservers/flavors        | ecs:cloudServerFlavors:get | -            |
| Querying the target ECS flavors to which a flavor can be changed | GET /v1/{project_id}/cloudservers/resize_flavors | ecs:cloudServers:list      | -            |

| Permission                                                                 | API                                                        | Action          | Dependencies |
|----------------------------------------------------------------------------|------------------------------------------------------------|-----------------|--------------|
| Querying details about <b>extra_specs</b> of an ECS (native OpenStack API) | GET /v2.1/{project_id}/flavors/{flavors_id}/os-extra_specs | ecs:flavors:get | -            |

## 8.9 NIC Management

| Permission                                           | API                                                                  | Action                     | Dependencies |
|------------------------------------------------------|----------------------------------------------------------------------|----------------------------|--------------|
| Configuring a private IP address for a NIC of an ECS | PUT /v1/{project_id}/cloudservers/nics/{nic_id}                      | ecs:cloudServerNics:update | -            |
| Deleting NICs from an ECS in a batch                 | POST /v1/{project_id}/cloudservers/{server_id}/nics/delete           | ecs:cloudServerNics:delete | -            |
| Adding NICs to an ECS in a batch                     | POST /v1/{project_id}/cloudservers/{server_id}/nics                  | ecs:cloudServers:addNics   | -            |
| Displaying NIC Information About ECSs                | GET /v1/{project_id}/cloudservers/{server_id}/os-interface           | ecs:cloudServers:get       | -            |
| Updating NIC attachment to an ECS                    | PUT /v1/{project_id}/cloudservers/{server_id}/os-interface/{port_id} | ecs:cloudServerNics:update | -            |

| Permission                               | API                                                      | Action                   | Dependencies                                                                                                                                                                                                                                                                   |
|------------------------------------------|----------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Adding an ECS NIC (native OpenStack API) | POST /v2.1/{project_id}/servers/{server_id}/os-interface | ecs:serverInterfaces:use | ecs:servers:get<br>ecs:serverInterfaces:get<br>vpc:networks:get<br>vpc:networks:update<br>vpc:subnets:get<br>vpc:subnets:update<br>vpc:ports:create<br>vpc:ports:update<br>vpc:ports:get<br>vpc:networks:create<br>vpc:subnets:create<br>vpc:routers:get<br>vpc:routers:update |

| Permission                                                   | API                                                             | Action                   | Dependencies                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------|-----------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Deleting an ECS NIC (native OpenStack API)                   | DELETE /v2.1/{project_id}/servers/{server_id}/os-interface/{id} | ecs:serverInterfaces:use | ecs:serverInterfaces:get<br>ecs:servers:get<br>vpc:networks:create<br>vpc:subnets:create<br>vpc:networks:get<br>vpc:networks:update<br>vpc:subnets:get<br>vpc:subnets:update<br>vpc:ports:delete<br>vpc:ports:update<br>vpc:ports:get<br>vpc:routers:get<br>vpc:routers:update |
| Querying ECS NICs (native OpenStack API)                     | GET /v2.1/{project_id}/servers/{server_id}/os-interface         | ecs:serverInterfaces:get | vpc:ports:get                                                                                                                                                                                                                                                                  |
| Querying NIC information about an ECS (native OpenStack API) | GET /v2.1/{project_id}/servers/{server_id}/os-interface/{id}    | ecs:serverInterfaces:get | vpc:ports:get                                                                                                                                                                                                                                                                  |

## 8.10 Disk Management

| Permission                                          | API                                                                           | Action                             | Dependencies                                                                                                                                                         |
|-----------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Detaching a disk from a specified ECS               | DELETE /v1/{project_id}/cloudservers/{server_id}/detachvolume/{attachment_id} | ecs:cloudServers:detachVolume      | -                                                                                                                                                                    |
| Attaching a disk to an ECS                          | POST /v1/{project_id}/cloudservers/{server_id}/attachvolume                   | ecs:cloudServers:attach            | -                                                                                                                                                                    |
| Querying information about disks attached to an ECS | GET /v1/{project_id}/cloudservers/{server_id}/block_device                    | ecs:cloudServers:get               | -                                                                                                                                                                    |
| Querying disk attachments of an ECS                 | GET /v1/{project_id}/cloudservers/{server_id}/os-volume_attachments           | ecs:cloudServers:get               | -                                                                                                                                                                    |
| Querying a single disk attached to an ECS           | GET /v1/cloudservers/{server_id}/block_device/{volume_id}                     | ecs:cloudServers:get               | -                                                                                                                                                                    |
| Attaching a disk from an ECS (native OpenStack API) | POST /v2.1/{project_id}/servers/{server_id}/os-volume_attachments             | ecs:serverVolumeAttachments:create | ecs:servers:get<br>ecs:flavors:get<br>ecs:serverVolumes:use<br>evs:volumes:list<br>evs:volumes:get<br>evs:volumes:update<br>evs:volumes:attach<br>evs:volumes:manage |



| Permission                                                                     | API                                                                             | Action                             | Dependencies                                                                                                                   |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Detaching a disk from an ECS (native OpenStack API)                            | DELETE /v2.1/{project_id}/servers/{server_id}/os-volume_attachments/{volume_id} | ecs:serverVolumeAttachments:delete | ecs:serverVolumes:use<br>evs:volumes:list<br>evs:volumes:get<br>evs:volumes:update<br>evs:volumes:detach<br>evs:volumes:manage |
| Querying information about the disks attached to an ECS (native OpenStack API) | GET /v2.1/{project_id}/servers/{server_id}/os-volume_attachments                | ecs:serverVolumeAttachments:list   | ecs:serverVolumes:use<br>ecs:servers:get                                                                                       |
| Querying information about a disk attached to an ECS (native OpenStack API)    | GET /v2.1/{project_id}/servers/{server_id}/os-volume_attachments/{volume_id}    | ecs:serverVolumeAttachments:get    | ecs:serverVolumes:use                                                                                                          |
| Creating a disk (native OpenStack API)                                         | POST /v2.1/{project_id}/os-volumes                                              | ecs:serverVolumes:use              | evs:volumes:create                                                                                                             |
| Deleting a disk (native OpenStack API)                                         | DELETE /v2.1/{project_id}/os-volumes/{volume_id}                                | ecs:serverVolumes:use              | evs:volumes:get<br>evs:volumes:delete                                                                                          |
| Querying a disk (native OpenStack API)                                         | GET /v2.1/{project_id}/os-volumes/{volume_id}                                   | ecs:serverVolumes:use              | evs:volumes:get                                                                                                                |

| Permission                                                | API                                      | Action                | Dependencies                        |
|-----------------------------------------------------------|------------------------------------------|-----------------------|-------------------------------------|
| Querying disks (native OpenStack API)                     | GET /v2.1/{project_id}/os-volumes        | ecs:serverVolumes:use | evs:volumes:get<br>evs:volumes:list |
| Querying detailed disk information (native OpenStack API) | GET /v2.1/{project_id}/os-volumes/detail | ecs:serverVolumes:use | evs:volumes:get<br>evs:volumes:list |

## 8.11 Metadata Management

| Permission                                             | API                                                          | Action                   | Dependencies    |
|--------------------------------------------------------|--------------------------------------------------------------|--------------------------|-----------------|
| Querying ECS metadata (native OpenStack API)           | GET /v2.1/{project_id}/servers/{server_id}/metadata          | ecs:servers:listMetadata | -               |
| Querying metadata of an ECS key (native OpenStack API) | GET /v2.1/{project_id}/servers/{server_id}/metadata/{key}    | ecs:servers:getMetadata  | ecs:servers:get |
| Deleting specified ECS metadata (native OpenStack API) | DELETE /v2.1/{project_id}/servers/{server_id}/metadata/{key} | ecs:servers:setMetadata  | -               |

| Permission                                                           | API                                                       | Action                  | Dependencies    |
|----------------------------------------------------------------------|-----------------------------------------------------------|-------------------------|-----------------|
| Modifying the key value in metadata of an ECS (native OpenStack API) | PUT /v2.1/{project_id}/servers/{server_id}/metadata/{key} | ecs:servers:setMetadata | -               |
| Updating ECS metadata (native OpenStack API)                         | POST /v2.1/{project_id}/servers/{server_id}/metadata      | ecs:servers:setMetadata | -               |
| Configuring ECS metadata (native OpenStack API)                      | PUT /v2.1/{project_id}/servers/{server_id}/metadata       | ecs:servers:setMetadata | ecs:servers:get |

## 8.12 Tenant Quota Management

| Permission                                         | API                                                                 | Action                   | Dependencies |
|----------------------------------------------------|---------------------------------------------------------------------|--------------------------|--------------|
| Querying the tenant quota                          | GET /v1/{project_id}/cloudservers/limits                            | ecs:cloudServerQuota:get | -            |
| Querying quotas of a tenant (native OpenStack API) | GET /v2.1/{project_id}/os-quota-sets/{project_id}?user_id={user_id} | ecs:quotas:get           | -            |
| Querying default quotas (native OpenStack API)     | GET /v2.1/{project_id}/os-quota-sets/{project_id}/defaults          | ecs:quotas:get           | -            |

## 8.13 SSH Key Management

| Permission                                                    | API                                                  | Action                    | Dependencies |
|---------------------------------------------------------------|------------------------------------------------------|---------------------------|--------------|
| Creating and importing an SSH key pair (native OpenStack API) | POST /v2.1/{project_id}/os-keypairs                  | ecs:serverKeypairs:create | -            |
| Querying an SSH key pair (native OpenStack API)               | GET /v2.1/{project_id}/os-keypairs/{keypair_name}    | ecs:serverKeypairs:get    | -            |
| Querying SSH key pairs (native OpenStack API)                 | GET /v2.1/{project_id}/os-keypairs                   | ecs:serverKeypairs:list   | -            |
| Deleting an SSH key pair (native openStack API)               | DELETE /v2.1/{project_id}/os-keypairs/{keypair_name} | ecs:serverKeypairs:delete | -            |

## 8.14 Floating IP Address Management

| Permission                                              | API                                     | Action                    | Dependencies                                                                             |
|---------------------------------------------------------|-----------------------------------------|---------------------------|------------------------------------------------------------------------------------------|
| Allocating a floating IP address (native OpenStack API) | POST /v2.1/{project_id}/os-floating-ips | ecs:serverFloatingIps:use | vpc:floatingIps:get<br>vpc:floatingIps:create<br>vpc:floatingIps:update<br>vpc:ports:get |

| Permission                                                          | API                                                        | Action                    | Dependencies                                                                             |
|---------------------------------------------------------------------|------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------|
| Querying floating IP addresses (native OpenStack API)               | GET /v2.1/{project_id}/os-floating-ips                     | ecs:serverFloatingIps:use | vpc:floatingIps:get<br>vpc:ports:get                                                     |
| Querying details about floating IP addresses (native OpenStack API) | GET /v2.1/{project_id}/os-floating-ips/{floating_ip_id}    | ecs:serverFloatingIps:use | vpc:floatingIps:get<br>vpc:ports:get                                                     |
| Releasing a floating IP address (native OpenStack API)              | DELETE /v2.1/{project_id}/os-floating-ips/{floating_ip_id} | ecs:serverFloatingIps:use | vpc:floatingIps:get<br>vpc:floatingIps:delete<br>vpc:floatingIps:update<br>vpc:ports:get |

## 8.15 ECS Group Management

| Permission            | API                                                                     | Action                  | Dependencies |
|-----------------------|-------------------------------------------------------------------------|-------------------------|--------------|
| Deleting an ECS group | DELETE /v1/{project_id}/cloudservers/os-server-groups/{server_group_id} | ecs:cloudServers:delete | -            |
| Creating an ECS group | POST /v1{project_id}/cloudservers/os-server-groups                      | ecs:cloudServers:create | -            |

| Permission                                                 | API                                                                          | Action                  | Dependencies |
|------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------|--------------|
| Adding an ECS to an ECS group                              | POST /v1/{project_id}/cloudservers/os-server-groups/{server_group_id}/action | ecs:cloudServers:create | -            |
| Removing an ECS from an ECS group                          | POST /v1/{project_id}/cloudservers/os-server-groups/{server_group_id}/action | ecs:cloudServers:delete | -            |
| Creating an ECS group (native OpenStack API)               | POST /v2.1/{project_id}/os-server-groups                                     | ecs:serverGroups:manage | -            |
| Querying ECS groups (native OpenStack API)                 | GET /v2.1/{project_id}/os-server-groups                                      | ecs:serverGroups:manage | -            |
| Querying details about an ECS group (native OpenStack API) | GET /v2.1/{project_id}/os-server-groups/{server_group_id}                    | ecs:serverGroups:manage | -            |
| Deleting an ECS group (native OpenStack API)               | DELETE /v2.1/{project_id}/os-server-groups/{server_group_id}                 | ecs:serverGroups:manage | -            |

## 8.16 ECS Management Through Console

| Permission                                                        | API                                                           | Action                    | Dependencies    |
|-------------------------------------------------------------------|---------------------------------------------------------------|---------------------------|-----------------|
| Obtaining the address for logging in to the console using VNC     | POST /v2.1/{project_id}/servers/{server_id}/remote-consoles   | ecs:servers:createConsole | ecs:servers:get |
| Obtaining the address for remotely logging in to an ECS using VNC | POST /v1/{project_id}/cloudservers/{server_id}/remote_console | ecs:cloudServers:vnc      | -               |

## 8.17 AZ Management

| Permission                          | API                                         | Action                                                 | Dependencies |
|-------------------------------------|---------------------------------------------|--------------------------------------------------------|--------------|
| Querying AZs (native OpenStack API) | GET /v2.1/{project_id}/os-availability-zone | ecs:availabilityZones:list/v2/{project_id}/os-networks | -            |

## 8.18 Tag Management

| Permission                                              | API                                                        | Action               | Dependencies    |
|---------------------------------------------------------|------------------------------------------------------------|----------------------|-----------------|
| Adding or deleting tags to or from an ECS in a batch    | POST /v1/{project_id}/cloudservers/{server_id}/tags/action | ecs:cloudServers:put | -               |
| Querying project tags                                   | GET /v1/{project_id}/cloudservers/tags                     | ecs:cloudServers:lis | -               |
| Querying tags of an ECS                                 | GET /v1/{project_id}/servers/{server_id}/tags              | ecs:servers:getTags  | -               |
| Querying tags of a specified ECS (native OpenStack API) | GET /v2.1/{project_id}/servers/{server_id}/tags            | ecs:servers:getTags  | ecs:servers:get |
| Adding a tag to an ECS (native OpenStack API)           | PUT /v2.1/{project_id}/servers/{server_id}/tags/{tag}      | ecs:servers:setTags  | ecs:servers:get |
| Creating an ECS tag (native OpenStack API)              | PUT /v2.1/{project_id}/servers/{server_id}/tags            | ecs:servers:setTags  | ecs:servers:get |



| Permission                                                  | API                                                      | Action              | Dependencies    |
|-------------------------------------------------------------|----------------------------------------------------------|---------------------|-----------------|
| Deleting a specified tag from an ECS (native OpenStack API) | DELETE /v2.1/{project_id}/servers/{server_id}/tags/{tag} | ecs:servers:setTags | ecs:servers:get |
| Querying an ECS tag (native OpenStack API)                  | GET /v2.1/{project_id}/servers/{server_id}/tags/{tag}    | ecs:servers:getTags | ecs:servers:get |
| Deleting all ECS tags (native OpenStack API)                | DELETE /v2.1/{project_id}/servers/{server_id}/tags       | ecs:servers:setTags | ecs:servers:get |

# 9 Common Parameters

## 9.1 Returned Values for General Requests

- Normal

| Returned Value | Description                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------------------|
| 200            | Request succeeded.                                                                                                |
| 201            | Request processed.                                                                                                |
| 202            | After the task is successfully delivered, the task to be delivered shall be postponed because the system is busy. |
| 204            | Task delivered.                                                                                                   |

- Abnormal

| Returned Value         | Description                                                               |
|------------------------|---------------------------------------------------------------------------|
| 300 multiple choices   | The requested resource has multiple available responses.                  |
| 400 Bad Request        | The server failed to process the request.                                 |
| 401 Unauthorized       | You need to enter the username and password to access the page requested. |
| 403 Forbidden          | You are forbidden to access the page requested.                           |
| 404 Not Found          | The server cannot find the page requested.                                |
| 405 Method Not Allowed | You are not allowed to use the method specified in the request.           |

| Returned Value                    | Description                                                                                                                                             |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 406 Not Acceptable                | The response generated by the server cannot be accepted by the client.                                                                                  |
| 407 Proxy Authentication Required | You must use the proxy server for authentication. Then, the request can be processed.                                                                   |
| 408 Request Timeout               | The request timed out.                                                                                                                                  |
| 409 Conflict                      | The request cannot be processed due to a conflict.                                                                                                      |
| 429 Too Many Requests             | The request throttling threshold is reached.                                                                                                            |
| 500 Internal Server Error         | Failed to complete the request because an internal service error occurs. A service exception occurred.                                                  |
| 501 Not Implemented               | Failed to complete the request because an internal service error occurs. The server does not support the requested function.                            |
| 502 Bad Gateway                   | Failed to complete the request because an internal service error occurs. Failed to complete the request because the server receives an invalid request. |
| 503 Service Unavailable           | Failed to complete the request because an internal service error occurs. The system is currently unavailable.                                           |
| 504 Gateway Timeout               | A gateway timeout error occurs.                                                                                                                         |

## 9.2 Obtaining a Project ID

### Scenarios

A project ID is required for some URLs when an API is called. Therefore, you need to obtain a project ID in advance. Two methods are available:

- [Obtain the Project ID by Calling an API](#)
- [Obtain the Project ID from the Console](#)

### Obtain the Project ID by Calling an API

You can obtain the project ID by calling the API used to [query project information](#).

The API used to obtain a project ID is GET `https://{Endpoint}/v3/projects`. {Endpoint} is the IAM endpoint and can be obtained from the administrator.

For details about API authentication, see [Authentication](#).

The following is an example response. The value of **id** is the project ID.

```
{
 "projects": [
 {
 "domain_id": "65382450e8f64ac0870cd180d14e684b",
 "is_domain": false,
 "parent_id": "65382450e8f64ac0870cd180d14e684b",
 "name": "project_name",
 "description": "",
 "links": {
 "next": null,
 "previous": null,
 "self": "https://www.example.com/v3/projects/a4a5d4098fb4474fa22cd05f897d6b99"
 },
 "id": "a4a5d4098fb4474fa22cd05f897d6b99",
 "enabled": true
 }
],
 "links": {
 "next": null,
 "previous": null,
 "self": "https://www.example.com/v3/projects"
 }
}
```

## Obtain a Project ID from the Console

To obtain a project ID from the console, perform the following operations:

1. Log in to the management console.
2. Click the username and select **My Credentials** from the drop-down list.

On the **API Credentials** page, view the project ID in the project list.

## 9.3 Task Request Result

### 9.3.1 Responses (Task)

- Normal response description

| Parameter | Type   | Description                                                                                                                                                                                                                     |
|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| job_id    | String | Specifies the returned task ID after delivering the task. Users can query the task progress using this ID. For how to query the execution status of the task based on the task ID, see <a href="#">Task Status Management</a> . |

- Abnormal response description

| Parameter | Type   | Description                                                                                             |
|-----------|--------|---------------------------------------------------------------------------------------------------------|
| error     | Object | Specifies the returned error message when an error occurs. For details, see <a href="#">Table 9-1</a> . |

**Table 9-1** error field structure

| Parameter | Type             | Description                                                                                                                                     |
|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| message   | String           | Describes the error message when an error occurs.                                                                                               |
| code      | String           | Specifies the error code when an error occurs.                                                                                                  |
| details   | Array of objects | Specifies error details.<br>Error details provide the error code and fault description, facilitating error handling.<br>This field is optional. |

**Table 9-2** details field description

| Parameter | Type   | Description                                                                  |
|-----------|--------|------------------------------------------------------------------------------|
| message   | String | Describes the error message when an error occurs.<br>This field is optional. |
| code      | String | Specifies the error code when an error occurs.<br>This field is optional.    |

- Example response

Normal response

```
{
 "job_id": "70a599e0-31e7-49b7-b260-868f441e862b"
}
```

Abnormal response

```
{
 "error": {"message": "", "code": "XXX",""}
}
```

Abnormal response containing error details:

```
{
 "error": {
 "message": "xxxx",
 "code": "xxxx",
 "details": [
 {
 "code": "xxxx",
 "message": "xxxx"
 }
]
 }
}
```

```
]
 }
}
```

## 9.3.2 Returned Values

- Normal

| Returned Value | Description                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------------------|
| 200            | The task is successfully delivered.                                                                               |
| 202            | After the task is successfully delivered, the task to be delivered shall be postponed because the system is busy. |
| 204            | The task is successfully delivered.                                                                               |

- Abnormal

| Returned Value                    | Description                                                                                                                  |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| 400 Bad Request                   | The server failed to process the request.                                                                                    |
| 401 Unauthorized                  | You need to enter the username and password to access the page requested.                                                    |
| 403 Forbidden                     | You are forbidden to access the page requested.                                                                              |
| 404 Not Found                     | The server cannot find the page requested.                                                                                   |
| 405 Method Not Allowed            | You are not allowed to use the method specified in the request.                                                              |
| 406 Not Acceptable                | The response generated by the server cannot be accepted by the client.                                                       |
| 407 Proxy Authentication Required | You must use the proxy server for authentication. Then, the request can be processed.                                        |
| 408 Request Timeout               | The request timed out.                                                                                                       |
| 409 Conflict                      | The request cannot be processed due to a conflict.                                                                           |
| 500 Internal Server Error         | Failed to complete the request because an internal service error occurs. A service exception occurred.                       |
| 501 Not Implemented               | Failed to complete the request because an internal service error occurs. The server does not support the requested function. |

| Returned Value          | Description                                                                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 502 Bad Gateway         | Failed to complete the request because an internal service error occurs. Failed to complete the request because the server receives an invalid request. |
| 503 Service Unavailable | Failed to complete the request because an internal service error occurs. The system is currently unavailable.                                           |
| 504 Gateway Timeout     | A gateway timeout error occurs.                                                                                                                         |

## 9.4 Batch Task Request

### 9.4.1 Responses (Batch Operation)

The following responses are only for resetting the passwords for logging in to ECSs in a batch and for modifying ECS specifications in a batch. For details about the responses of other batch operations, see [Responses \(Task\)](#).

- Normal responses

| Parameter | Type             | Description                                                                                                             |
|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------|
| response  | Array of objects | Specifies the response returned after a request is successfully submitted. For details, see <a href="#">Table 9-3</a> . |

**Table 9-3** response field description

| Parameter | Type   | Description                                                                         |
|-----------|--------|-------------------------------------------------------------------------------------|
| id        | String | Specifies the ID of the ECS on which the operation has been successfully performed. |

- Abnormal responses

| Parameter     | Type             | Description                                                                                                               |
|---------------|------------------|---------------------------------------------------------------------------------------------------------------------------|
| error         | Object           | Specifies the error in a batch request. For details, see <a href="#">Table 9-4</a> .                                      |
| internalError | Array of objects | Specifies the error in each request among the requests submitted in a batch. For details, see <a href="#">Table 9-5</a> . |

**Table 9-4 error** field structure

| Parameter | Type   | Description                                     |
|-----------|--------|-------------------------------------------------|
| message   | String | Describes a batch operation error.              |
| code      | String | Specifies the code for a batch operation error. |

**Table 9-5 internalEroCMM.0101r** field description

| Parameter     | Type   | Description                                            |
|---------------|--------|--------------------------------------------------------|
| id            | String | Specifies the ID of the ECS on which a request failed. |
| error_message | String | Describes a single request failure.                    |
| error_code    | String | Specifies the code for a single request error.         |

- Example response

Normal response

```
{
 "response": [
 {
 "id": "616fb98f-46ca-475e-917e-2563e5a8cd19"
 },
 {
 "id": "516fb98f-46ca-475e-917e-2563e5a8cd12"
 }
]
}
```

Abnormal response

```
{
 "error": {
 "code": "Ecs.xxxx",
 "message": "xxxxxxxxxxxxxxxx"
 },
 "internalError": [
 {
 "id": "616fb98f-46ca-475e-917e-2563e5a8cd19",
 "error_code": "ECS.XXXX",
 "error_message": "xxxxxxxxxxxxxxxx"
 },
 {
 "id": "516fb98f-46ca-475e-917e-2563e5a8cd12",
 "error_code": "ECS.XXXX",
 "error_message": "xxxxxxxxxxxxxxxx"
 }
]
}
```



# 10 Out-of-Date APIs

---

## 10.1 Status Management

### 10.1.1 Querying Automatic Recovery of an ECS (Discarded)

#### Function

This API is used to query automatic recovery configured for an ECS.

#### URI

GET /v1/{project\_id}/cloudservers/{server\_id}/autorecovery

[Table 10-1](#) describes the parameters in the URI.

**Table 10-1** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| server_id  | Yes       | Specifies the ECS ID.                                                                                             |

#### Request

None

#### Response

[Table 10-2](#) describes the response parameters.

**Table 10-2** Response parameters

| Parameter             | Type   | Description                                                                                                                                                                                                                                                          |
|-----------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| support_auto_recovery | String | Queries automatic recovery configured for an ECS. <ul style="list-style-type: none"><li>• <b>true</b>: indicates that automatic recovery is configured for an ECS.</li><li>• <b>false</b>: indicates that automatic recovery is not configured for an ECS.</li></ul> |

## Example Request

None

## Example Response

```
GET https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/autorecovery
{
 "support_auto_recovery": "true"
}
```

## Returned Values

See [Returned Values for General Requests](#).

## Error Codes

See [Error Codes](#).

## 10.1.2 Managing Automatic Recovery of an ECS (Discarded)

### Function

This API is used to configure or delete automatic recovery of an ECS.

### URI

PUT /v1/{project\_id}/cloudservers/{server\_id}/autorecovery

[Table 10-3](#) describes the parameters in the URI.

**Table 10-3** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| server_id  | Yes       | Specifies the ECS ID.                                                                                             |

## Request

[Table 10-4](#) describes the request parameters.

**Table 10-4** Request parameters

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                      |
|-----------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| support_auto_recovery | Yes       | String | Configures or deletes automatic recovery of an ECS. <ul style="list-style-type: none"><li>• <b>true</b>: indicates configuring automatic recovery for an ECS.</li><li>• <b>false</b>: indicates deleting automatic recovery of an ECS.</li></ul> |

## Response

None

## Example Request

```
PUT https://{endpoint}/v1/{project_id}/cloudservers/{server_id}/autorecovery
{
 "support_auto_recovery": "true"
}
```

## Example Response

None

## Returned Values

See [Returned Values for General Requests](#).

## Error Codes

See [Error Codes](#).

# 10.2 Flavor Management

## 10.2.1 Querying the Target Flavors to Which an ECS Flavor Can Be Changed (Discarded)

### Function

An ECS flavor cannot be changed to certain flavors. This API is used to query the target flavors to which a specified ECS flavor can be changed.

This API has been discarded. Use the API described in [Querying the Target ECS Flavors to Which a Flavor Can Be Changed](#).

## URI

```
GET /v2.1/{project_id}/resize_flavors?
instance_uuid={instance_uuid}&source_flavor_id={source_flavor_id}&source_flavor_
name={source_flavor_name}&sort_key={sort_key}&sort_dir={sort_dir}&limit={limit
&marker={marker}
```

[Table 10-5](#) lists the parameters.

**Table 10-5** Path parameters

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

### NOTE

One of the **instance\_uuid**, **source\_flavor\_id**, and **source\_flavor\_name** parameters must be configured. If multiple parameters are configured, the system processes the **instance\_uuid**, **source\_flavor\_id**, and **source\_flavor\_name** parameters in descending order by default.

[Table 10-6](#) describes the query parameters.

**Table 10-6** Query parameters

| Parameter          | Mandatory | Type   | Description                                 |
|--------------------|-----------|--------|---------------------------------------------|
| instance_uuid      | No        | String | Specifies the target ECS ID in UUID format. |
| source_flavor_id   | No        | String | Specifies the source flavor ID.             |
| source_flavor_name | No        | String | Specifies the source flavor name.           |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| sort_key  | No        | String  | Specifies the field for sorting.<br>Value options: <ul style="list-style-type: none"><li>● <b>flavorid</b>: indicates the flavor ID. The default value is <b>flavorid</b>.</li><li>● <b>name</b>: indicates the flavor name.</li><li>● <b>memory_mb</b>: indicates the memory size.</li><li>● <b>vcpus</b>: indicates the number of vCPUs.</li><li>● <b>root_gb</b>: indicates the system disk size.</li></ul> |
| sort_dir  | No        | String  | Specifies the ascending ( <b>asc</b> ) or descending ( <b>desc</b> ) sorting.<br>Value options: <ul style="list-style-type: none"><li>● <b>asc</b>: indicates the ascending order.</li><li>● <b>desc</b>: indicates the descending order.</li></ul>                                                                                                                                                            |
| limit     | No        | Integer | Specifies the maximum number of flavors that can be displayed on one page. The default value is <b>1000</b> .                                                                                                                                                                                                                                                                                                  |
| marker    | No        | String  | Uses the ID of the last flavor on one page as the paging marker.                                                                                                                                                                                                                                                                                                                                               |

## Request

None

## Response

[Table 10-7](#) describes the response parameter.

**Table 10-7** Response parameter

| Parameter | Mandatory | Type             | Description                                                             |
|-----------|-----------|------------------|-------------------------------------------------------------------------|
| flavors   | Yes       | Array of objects | Specifies ECS flavors.<br>For details, see <a href="#">Table 10-8</a> . |

**Table 10-8 flavors** field description

| Parameter                 | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                  |
|---------------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                        | Yes       | String  | Specifies the ECS flavor ID.                                                                                                                                                                                                                                                                                 |
| name                      | Yes       | String  | Specifies the name of the ECS flavor.                                                                                                                                                                                                                                                                        |
| vcpus                     | Yes       | Integer | Specifies the number of vCPUs in the ECS flavor.                                                                                                                                                                                                                                                             |
| ram                       | Yes       | Integer | Specifies the memory size (MB) in the ECS flavor.                                                                                                                                                                                                                                                            |
| disk                      | Yes       | Integer | Specifies the system disk size in the ECS flavor.<br><br>This parameter has not been used. Its default value is <b>0</b> .                                                                                                                                                                                   |
| swap                      | No        | String  | Specifies the swap partition size required by the ECS flavor.<br><br>This parameter has not been used. Its default value is "".                                                                                                                                                                              |
| OS-FLV-EXT-DATA:ephemeral | Yes       | Integer | Specifies the temporary disk size. This is an extended attribute.<br><br>This parameter has not been used. Its default value is <b>0</b> .                                                                                                                                                                   |
| OS-FLV-DISABLED:disabled  | Yes       | Boolean | Specifies whether the ECS flavor has been disabled. This is an extended attribute. <ul style="list-style-type: none"><li>• <b>true</b>: indicates that the flavor is available.</li><li>• <b>false</b>: indicates that the flavor is unavailable.</li></ul> <b>NOTE</b><br>This parameter has not been used. |
| rxtx_factor               | Yes       | Float   | This is an extended attribute.<br><b>NOTE</b><br>This parameter has not been used.                                                                                                                                                                                                                           |
| rxtx_quota                | Yes       | String  | Specifies the software constraints of the network bandwidth that can be used by the ECS.<br><br>This parameter has not been used. Its default value is <b>null</b> .                                                                                                                                         |

| Parameter                  | Mandator<br>y | Type             | Description                                                                                                                                                                                                                                                                                                                 |
|----------------------------|---------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rxtx_cap                   | Yes           | String           | Specifies the hardware constraints of the network bandwidth that can be used by the ECS.<br>This parameter has not been used. Its default value is <b>null</b> .                                                                                                                                                            |
| os-flavor-access:is_public | Yes           | Boolean          | Specifies whether a flavor is available to all tenants. This is an extended attribute. <ul style="list-style-type: none"><li>• <b>true</b>: indicates that a flavor is available to all tenants.</li><li>• <b>false</b>: indicates that a flavor is available only to certain tenants.</li></ul> Default value: <b>true</b> |
| links                      | Yes           | Array of objects | Specifies the shortcut link of the ECS flavor.<br>For details, see <a href="#">Table 10-9</a> .                                                                                                                                                                                                                             |
| extra_specs                | Yes           | Array of objects | Specifies the extended field of the ECS specifications.<br>For details, see <a href="#">Table 4-85</a> .                                                                                                                                                                                                                    |

Table 10-9 links field description

| Parameter | Mandator<br>y | Type   | Description                                                                                               |
|-----------|---------------|--------|-----------------------------------------------------------------------------------------------------------|
| rel       | Yes           | String | Specifies the shortcut link marker name.                                                                  |
| href      | Yes           | String | Specifies the shortcut link.                                                                              |
| type      | Yes           | String | Specifies the shortcut link type.<br>This parameter has not been used. Its default value is <b>null</b> . |

## Example Request

```
GET https://{endpoint}/v1/{project_id}/cloudservers/resize_flavors?source_flavor_id=c3.xlarge.2
```

## Example Response

```
{
 "flavors": [
 {
```

```
 "id": "c3.15xlarge.2",
 "name": "c3.15xlarge.2",
 "vcpus": "60",
 "ram": 131072,
 "disk": "0",
 "swap": "",
 "links": [
 {
 "rel": "self",
 "href": "https://compute-ext.region.xxx.com/v1.0/743b4c0428d94531b9f2add666642e6b/
flavors/c3.15xlarge.2",
 "type": null
 },
 {
 "rel": "bookmark",
 "href": "https://compute-ext.region.xxx.com/743b4c0428d94531b9f2add666642e6b/flavors/
c3.15xlarge.2",
 "type": null
 }
],
 "OS-FLV-EXT-DATA:ephemeral": 0,
 "rxtx_factor": 1,
 "OS-FLV-DISABLED:disabled": false,
 "rxtx_quota": null,
 "rxtx_cap": null,
 "os-flavor-access:is_public": true,
 "extra_specs": {
 "ecs:virtualization_env_types": "CloudCompute",
 "ecs:generation": "c3",
 "ecs:performancetype": "computingv3",
 "resource_type": "IOptimizedC3_2"
 }
 }
]
```

## Returned Values

See [Returned Values for General Requests](#).

## Error Codes

See [Error Codes](#).

# 10.3 NIC Management

## 10.3.1 Binding a Virtual IP Address to an ECS NIC (Discarded)

### Function

A virtual IP address provides the second IP address for one or multiple ECS NICs, improving high availability between the ECSs.

This API is used to bind a virtual IP address to an ECS NIC.

- If the specified IP address is a virtual IP address that has not been assigned, the system automatically assigns the virtual IP address and binds it to a specified NIC.
- If the specified IP address is a virtual IP address that has been assigned, the system binds the virtual IP address to a specified NIC. If the **device\_owner** of



this IP address is left blank, only intra-VPC layer 2 and layer 3 communication is supported. If the **device\_owner** of this IP address is **neutron:VIP\_PORT**, intra-VPC layer 2 and layer 3 communication, inter-VPC peer access, as well as Internet access through EIP, VPN, and Cloud Connect are supported.

## URI

PUT /v1/{project\_id}/cloudservers/nics/{nic\_id}

[Table 10-10](#) lists the parameters.

**Table 10-10** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| nic_id     | Yes       | Specifies the ECS NIC ID.                                                                                         |

## Request

[Table 10-11](#) describes the request parameter.

**Table 10-11** Request parameter

| Parameter | Mandatory | Type   | Description                                                                                                            |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------|
| nic       | Yes       | Object | Specifies the NIC parameters required for binding a virtual IP address. For details, see <a href="#">Table 10-12</a> . |

**Table 10-12** nic field description

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                              |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnet_id  | Yes       | String | Specifies the information about the NICs to be added to an ECS.<br>Set the parameter value to the ID (in UUID format) of the network created in the VPC to which the target ECS belongs. |
| ip_address | Yes       | String | Specifies the virtual IP address to be bound to a NIC.                                                                                                                                   |

| Parameter       | Mandatory | Type    | Description                                                                                                                                                                                                           |
|-----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reverse_binding | No        | Boolean | Specifies whether to add the NIC IP/MAC address pair to <b>allowed_address_pairs</b> .<br><b>NOTE</b><br>The virtual IP address can be displayed on the NIC details page only after the IP/MAC address pair is added. |

## Response

[Table 10-13](#) describes the response parameter.

**Table 10-13** Response parameter

| Parameter | Type   | Description               |
|-----------|--------|---------------------------|
| port_id   | String | Specifies the ECS NIC ID. |

## Example Request

```
PUT https://{endpoint}/v1/{project_id}/cloudservers/nics/{nic_id}
{
 "nic": {
 "subnet_id": "d32019d3-bc6e-4319-9c1d-6722fc136a23",
 "ip_address": "192.168.0.7",
 "reverse_binding": true
 }
}
```

## Example Response

```
{
 "port_id": "d32019d3-bc6e-4319-9c1d-6722fc136a23"
}
```

## Returned Values

See [Returned Values for General Requests](#).

## Error Codes

See [Error Codes](#).

## 10.3.2 Unbinding a Virtual IP Address from an ECS NIC (Discarded)

### Function

A virtual IP address provides the second IP address for one or multiple ECS NICs, improving high availability between the ECSs.

This API is used to unbind a virtual IP address from an ECS NIC. After the NIC is unbound, it is not deleted. For details about how to delete an ECS NIC, see [Deleting NICs from an ECS in a Batch](#).

### URI

PUT /v1/{project\_id}/cloudservers/nics/{nic\_id}

[Table 10-14](#) lists the parameters.

**Table 10-14** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| nic_id     | Yes       | Specifies the ECS NIC ID.                                                                                         |

### Request

[Table 10-15](#) describes the request parameter.

**Table 10-15** Request parameter

| Parameter | Mandatory | Type   | Description                                                                                                              |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------|
| nic       | Yes       | Object | Specifies the NIC parameters required for unbinding a virtual IP address. For details, see <a href="#">Table 10-16</a> . |

**Table 10-16** nic field description

| Parameter       | Mandatory | Type    | Description                                                                                                                                                  |
|-----------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnet_id       | Yes       | String  | Specifies the information about the NICs to be added to an ECS.<br>This parameter must be left blank when you unbind the virtual IP address from an ECS NIC. |
| ip_address      | Yes       | String  | Specifies the virtual IP address to be unbound from a NIC.<br>This parameter must be left blank when you unbind the virtual IP address from an ECS NIC.      |
| reverse_binding | No        | Boolean | Specifies whether to add the NIC IP/MAC address pair to <b>allowed_address_pairs</b> .                                                                       |

## Response

[Table 10-17](#) describes the response parameter.

**Table 10-17** Response parameter

| Parameter | Type   | Description               |
|-----------|--------|---------------------------|
| port_id   | String | Specifies the ECS NIC ID. |

## Example Request

```
PUT https://{endpoint}/v1/{project_id}/cloudservers/nics/{nic_id}
{
 "nic": {
 "subnet_id": "",
 "ip_address": "",
 "reverse_binding": false
 }
}
```

## Example Response

```
{
 "port_id": "d32019d3-bc6e-4319-9c1d-6722fc136a23"
}
```

## Returned Values

See [Returned Values for General Requests](#).

## Error Codes

See [Error Codes](#).

# 10.4 Disk Management

## 10.4.1 Querying Disk Attachment of an ECS (Discarded)

### Function

This API is used to query disk attachment of an ECS.

This API has been discarded. Use the API described in [Querying Disk Attachments of an ECS](#).

### URI

GET /v2.1/servers/{server\_id}/block\_device

[Table 10-18](#) lists the URI parameters.

**Table 10-18** Parameter description

| Parameter | Mandatory | Description                          |
|-----------|-----------|--------------------------------------|
| server_id | Yes       | Specifies the ECS ID in UUID format. |

### Request

None

### Response

[Table 10-19](#) describes the response parameters.

**Table 10-19** Response parameters

| Parameter          | Type             | Description                                                                                                  |
|--------------------|------------------|--------------------------------------------------------------------------------------------------------------|
| volumeAttachments  | Array of objects | Specifies the disks attached to an ECS. For details, see <a href="#">Table 10-20</a> .                       |
| attachableQuantity | Object           | Specifies the number of disks that can be attached to an ECS. For details, see <a href="#">Table 10-21</a> . |

**Table 10-20 volumeAttachments** parameters

| Parameter  | Type    | Description                                                                                                                                                                            |
|------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| serverId   | String  | Specifies the ECS ID in UUID format.                                                                                                                                                   |
| volumeId   | String  | Specifies the EVS disk ID in UUID format.                                                                                                                                              |
| id         | String  | Specifies the attachment ID, which is the same as the EVS disk ID.<br>The value is in UUID format.                                                                                     |
| size       | Integer | Specifies the EVS disk size in GB.                                                                                                                                                     |
| device     | String  | Specifies the drive letter of the EVS disk, which is the device name of the EVS disk.                                                                                                  |
| pciAddress | String  | Specifies the PCI address.                                                                                                                                                             |
| bootIndex  | Boolean | Specifies the EVS disk boot sequence. <ul style="list-style-type: none"><li>• <b>0</b> indicates the system disk.</li><li>• Values other than <b>0</b> indicate a data disk.</li></ul> |
| bus        | String  | Specifies the disk bus type.<br>Value options: <b>virtio</b> and <b>scsi</b>                                                                                                           |

**Table 10-21 attachableQuantity** parameters

| Parameter | Type    | Description                                                              |
|-----------|---------|--------------------------------------------------------------------------|
| free_scsi | Integer | Specifies the number of SCSI disks that can be attached to an ECS.       |
| free_blk  | Integer | Specifies the number of virtio_blk disks that can be attached to an ECS. |
| free_disk | Integer | Specifies the total number of disks that can be attached to an ECS.      |

## Example Request

```
GET https://{endpoint}/v2.1/servers/4d8c3732-a248-40ed-bebc-539a6ffd25c0/block_device
```

## Example Response

```
{
 "attachableQuantity": {
 "free_scsi": 23,
 "free_blk": 15,
 "free_disk": 23
 },
}
```

```
"volumeAttachments": [
 {
 "pciAddress": "0000:02:01.0",
 "volumeId": "a26887c6-c47b-4654-abb5-dfadf7d3f803",
 "device": "/dev/vda",
 "serverId": "4d8c3732-a248-40ed-bebc-539a6ffd25c0",
 "id": "a26887c6-c47b-4654-abb5-dfadf7d3f803",
 "size": "40",
 "bootIndex": 0,
 "bus": "virtio"
 },
 {
 "pciAddress": "0000:02:02.0",
 "volumeId": "a26887c6-c47b-4654-abb5-asdf234r234r",
 "device": "/dev/vdb",
 "serverId": "4d8c3732-a248-40ed-bebc-539a6ffd25c0",
 "id": "a26887c6-c47b-4654-abb5-asdf234r234r",
 "size": "10",
 "bootIndex": 1,
 "bus": "virtio"
 }
]
```

## Returned Values

See [Returned Values for General Requests](#).

## Error Codes

See [Error Codes](#).

## 10.4.2 Querying a Single Disk Attached to an ECS (Discarded)

### Function

This API is used to query a disk attached to an ECS.

This API has been discarded. Use the API described in [Querying a Single Disk Attached to an ECS](#).

### URI

GET /v2.1/servers/{server\_id}/block\_device/{volume\_id}

[Table 10-22](#) lists the URI parameters.

**Table 10-22** Parameter description

| Parameter | Mandatory | Description                               |
|-----------|-----------|-------------------------------------------|
| server_id | Yes       | Specifies the ECS ID in UUID format.      |
| volume_id | Yes       | Specifies the EVS disk ID in UUID format. |

## Request

None

## Response

[Table 10-23](#) describes the response parameter.

**Table 10-23** Response parameter

| Parameter        | Type   | Description                                                                           |
|------------------|--------|---------------------------------------------------------------------------------------|
| volumeAttachment | Object | Specifies the disk attached to an ECS. For details, see <a href="#">Table 10-24</a> . |

**Table 10-24** volumeAttachment parameters

| Parameter  | Type    | Description                                                                                                                                                                            |
|------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| serverId   | String  | Specifies the ECS ID in UUID format.                                                                                                                                                   |
| volumeId   | String  | Specifies the EVS disk ID in UUID format.                                                                                                                                              |
| id         | String  | Specifies the attachment ID, which is the same as the EVS disk ID. The value is in UUID format.                                                                                        |
| size       | Integer | Specifies the EVS disk size in GB.                                                                                                                                                     |
| device     | String  | Specifies the drive letter of the EVS disk, which is the device name of the EVS disk.                                                                                                  |
| pciAddress | String  | Specifies the PCI address.                                                                                                                                                             |
| bootIndex  | Boolean | Specifies the EVS disk boot sequence. <ul style="list-style-type: none"><li>• <b>0</b> indicates the system disk.</li><li>• Values other than <b>0</b> indicate a data disk.</li></ul> |
| bus        | String  | Specifies the disk bus type. Options: <b>virtio</b> and <b>scsi</b>                                                                                                                    |

## Example Request

```
GET https://{endpoint}/v2.1/servers/{server_id}/block_device/{volume_id}
```

## Example Response

```
{
 "volumeAttachment": {
```



```
"pciAddress": "0000:02:01.0",
"volumeId": "a26887c6-c47b-4654-abb5-asdf234r234r",
"device": "/dev/vda",
"serverId": "4d8c3732-a248-40ed-bebc-539a6ffd25c0",
"id": "a26887c6-c47b-4654-abb5-asdf234r234r",
"size": "40",
"bootIndex": 0,
"bus": "virtio"
}
```

## Returned Values

See [Returned Values for General Requests](#).

## Error Codes

See [Error Codes](#).

# 10.5 Tag Management

## 10.5.1 Adding Tags to an ECS in a Batch (Discarded)

### Function

- This API is used to add tags to a specified ECS in a batch.
- The Tag Management Service (TMS) uses this API to batch manage the tags of an ECS.

#### NOTE

This API has been discarded. Use the API described in [Adding Tags to an ECS in a Batch](#).

### Constraints

- An ECS allows a maximum of 10 tags.
- This API is idempotent.  
During tag creation, if a tag exists (both the key and value are the same as those of an existing tag), the tag is successfully processed by default.
- A new tag will overwrite the original one if their keys are the same and values are different.

### URI

POST /v1/{project\_id}/servers/{server\_id}/tags/action

[Table 10-25](#) lists the parameters.

**Table 10-25** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| server_id  | Yes       | Specifies the ECS ID.                                                                                             |

## Request

[Table 10-26](#) describes the request parameters.

**Table 10-26** Request parameters

| Parameter | Mandatory | Type             | Description                                                                                                                  |
|-----------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------|
| tags      | Yes       | Array of objects | Specifies tags.                                                                                                              |
| action    | Yes       | String           | Specifies the operation (only lowercase letters are supported). For example, <b>create</b> indicates the creation operation. |

**Table 10-27** resource\_tag field description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                  |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | Specifies the tag key. <ul style="list-style-type: none"><li>• Cannot be left blank.</li><li>• Must be unique for each resource.</li><li>• Contains a maximum of 36 characters.</li><li>• Must be unique and cannot be left blank.</li></ul> |
| value     | Yes       | String | Specifies the tag value. <ul style="list-style-type: none"><li>• Contains a maximum of 43 characters.</li></ul>                                                                                                                              |

## Response

None

## Example Request

```
POST https://{endpoint}/v1/{project_id}/servers/{server_id}/tags/action
{
 "action": "create",
 "tags": [
 {
 "key": "key1",
 "value": "value1"
 },
 {
 "key": "key2",
 "value": "value3"
 }
]
}
```

## Example Response

None

## Returned Values

See [Returned Values for General Requests](#).

## Error Codes

See [Error Codes](#).

## 10.5.2 Deleting Tags from an ECS in a Batch (Discarded)

### Function

- This API is used to delete tags from a specified ECS in a batch.
- The Tag Management Service (TMS) uses this API to batch manage the tags of an ECS.
- This API is idempotent. When you delete a tag but the tag does not exist, a successful result is returned.

#### NOTE

This API has been discarded. Use the API described in [Deleting Tags from an ECS in a Batch](#).

### Constraints

An ECS allows a maximum of 10 tags.

### URI

POST /v1/{project\_id}/servers/{server\_id}/tags/action

[Table 10-28](#) describes the parameters in the URI.

**Table 10-28** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| server_id  | Yes       | Specifies the ECS ID.                                                                                             |

## Request

[Table 10-29](#) describes the request parameters.

**Table 10-29** Request parameters

| Parameter | Mandatory | Type             | Description                                                                                                                  |
|-----------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------|
| tags      | Yes       | Array of objects | Specifies tags.                                                                                                              |
| action    | Yes       | String           | Specifies the operation (only lowercase letters are supported). For example, <b>delete</b> indicates the deletion operation. |

**Table 10-30** resource\_tag field description

| Parameter | Mandatory | Type   | Description                                                                                                                                  |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | Specifies the tag key.<br>It contains a maximum of 127 Unicode characters and cannot be left blank.<br>The tag key of an ECS must be unique. |
| value     | No        | String | Specifies the tag value.<br>The value can contain a maximum of 255 Unicode characters and can be left blank.                                 |

## Response

None

## Example Request

```
POST https://{endpoint}/v1/{project_id}/servers/{server_id}/tags/action
{
 "action": "delete",
 "tags": [
 {
 "key": "key1",
 "value": "value1"
 },
 {
 "key": "key2",
 "value": "value3"
 }
]
}
```

## Example Response

None

## Returned Values

See [Returned Values for General Requests](#).

## Error Codes

See [Error Codes](#).

## 10.5.3 Querying Project Tags (Discarded)

### Function

Projects are used to group and isolate OpenStack resources, which include computing, storage, and network resources. A project can be a department or a team. Multiple projects can be created under one account.

This API is used to query all tags used by a user in a specified project.

#### NOTE

This API has been discarded. Use the API described in [Querying Project Tags](#).

### URI

GET /v1/{project\_id}/servers/tags

[Table 10-31](#) lists the parameter.

**Table 10-31** Parameter description

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

## Request

None

## Response

**Table 10-32** describes the response parameter.

**Table 10-32** Response parameter

| Parameter | Type             | Description     |
|-----------|------------------|-----------------|
| tags      | Array of objects | Specifies tags. |

**Table 10-33** tag field description

| Parameter | Type             | Description                                                                                                                                                               |
|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String           | Specifies the tag key. <ul style="list-style-type: none"> <li>The key can contain a maximum of 36 Unicode characters.</li> </ul>                                          |
| values    | Array of strings | Specifies the tag value. <ul style="list-style-type: none"> <li>Each value contains a maximum of 43 Unicode characters.</li> <li>This field can be left blank.</li> </ul> |

## Examples

- Example Request  
GET https://{endpoint}/v1/{project\_id}/servers/tags

- Example Response

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

## Returned Values

See [Returned Values for General Requests](#).

## Error Codes

See [Error Codes](#).

## 10.5.4 Querying Tags of an ECS (Discarded)

### Function

- This API is used to query the tags of a specified ECS.
- The Tag Management Service (TMS) uses this API to query all tags of an ECS.

#### NOTE

This API has been discarded. Use the API described in [Querying Tags of an ECS](#).

### URI

GET /v1/{project\_id}/servers/{server\_id}/tags

[Table 10-34](#) lists the parameters.

**Table 10-34** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| server_id  | Yes       | Specifies the ECS ID.                                                                                             |

### Request

None

### Response

[Table 10-35](#) describes the response parameter.

**Table 10-35** Response parameter

| Parameter | Type             | Description     |
|-----------|------------------|-----------------|
| tags      | Array of objects | Specifies tags. |

**Table 10-36** resource\_tag field description

| Parameter | Type   | Description              |
|-----------|--------|--------------------------|
| key       | String | Specifies the tag key.   |
| value     | String | Specifies the tag value. |

## Example Request

```
GET https://{endpoint}/v1/{project_id}/servers/{server_id}/tags
```

## Example Response

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

## Returned Values

See [Returned Values for General Requests](#).

## Error Codes

See [Error Codes](#).

## 10.5.5 Querying ECSs by Tag (Discarded)

### Function

This API is used to filter ECSs by tag and obtain all tags and resources used by an ECS.

### URI

```
POST /v1/{project_id}/cloudservers/resource_instances/action
```

[Table 10-37](#) describes the parameters in the URI.

**Table 10-37** Parameter description

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



## Request

**Table 10-38** describes the request parameters.

**Table 10-38** Request parameters

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action    | Yes       | String | Specifies the operation. Value <b>filter</b> indicates to filter ECSs by tag. The ECSs that meet the filter criteria are displayed.                                                                                                                                                                                                                                                                                                                                                              |
| limit     | No        | String | Limits the maximum number of queried ECSs. The value cannot be a negative number. The maximum value is 1000. <ul style="list-style-type: none"><li>• If the <b>action</b> value is <b>count</b>, this parameter is invalid.</li><li>• If the <b>action</b> value is <b>filter</b>, this parameter is mandatory. The value ranges from 0 to 1000. If no value is specified for <b>limit</b>, the default value of this parameter is <b>1000</b>.</li></ul>                                        |
| offset    | No        | String | Specifies the start of the record to be returned. The value must be a number that is greater than or equal to 0.<br>This parameter is optional when data on the first page is queried. <ul style="list-style-type: none"><li>• If the <b>action</b> value is <b>count</b>, this parameter is invalid.</li><li>• If the <b>action</b> value is <b>filter</b>, this parameter is mandatory. If no value is specified for <b>offset</b>, the default value of this parameter is <b>0</b>.</li></ul> |

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                              |
|-----------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tags      | No        | Array of objects | Displays the ECSs with all the specified tags. For details, see <a href="#">Table 10-39</a> . <ul style="list-style-type: none"> <li>The structure body must be included.</li> <li>The tag key cannot be left blank or set to an empty string.</li> <li>A key must be unique.</li> <li>Values of the same key must be unique.</li> </ul> |
| not_tags  | No        | Array of strings | Displays the ECSs with none of specified tags. <ul style="list-style-type: none"> <li>The structure body must be included.</li> <li>The tag key cannot be left blank or set to an empty string.</li> <li>Keys must be unique.</li> <li>Values of the same key must be unique.</li> </ul>                                                 |
| matches   | No        | Array of objects | Specifies the search field, which is used to search for ECSs.<br>Currently, only <b>resource_name</b> can be used for search. For more information, see <a href="#">Table 10-40</a> .                                                                                                                                                    |

**Table 10-39 tag** field description

| Parameter | Mandatory | Type   | Description                                                                                                                                           |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | Specifies the tag key. <ul style="list-style-type: none"> <li>Contains a maximum of 127 Unicode characters.</li> <li>Cannot be left blank.</li> </ul> |

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                 |
|-----------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| values    | Yes       | Array of strings | <p>Specifies tag values.</p> <ul style="list-style-type: none"> <li>• Values of the same tag must be unique.</li> <li>• Each value contains a maximum of 255 Unicode characters.</li> <li>• If this parameter is not specified, its value is <b>any_value</b>.</li> <li>• The values are in the OR relationship.</li> </ul> |

**Table 10-40** match field description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                      |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | <p>Specifies the key field to be matched.</p> <p>The tag key can only be <b>resource_name</b>. In such a case, the tag value is the ECS name.</p> <ul style="list-style-type: none"> <li>• The key must be unique, and the value is used for matching.</li> <li>• This field is a fixed dictionary value.</li> <li>• This field cannot be left blank.</li> </ul> |
| value     | Yes       | String | <p>Specifies the tag value.</p> <p>The tag key can only be <b>resource_name</b>. In such a case, the tag value is the ECS name.</p> <ul style="list-style-type: none"> <li>• Contains a maximum of 255 Unicode characters.</li> <li>• Cannot be left blank.</li> </ul>                                                                                           |

## Response

### Response parameters

**Table 10-41** describes the response parameters.

**Table 10-41** Response parameters

| Parameter   | Type             | Description                                                             |
|-------------|------------------|-------------------------------------------------------------------------|
| resources   | Array of objects | Specifies returned ECSs. For details, see <a href="#">Table 10-42</a> . |
| total_count | Integer          | Specifies the total number of queried ECSs.                             |

**Table 10-42** resource field description

| Parameter       | Type             | Description                                         |
|-----------------|------------------|-----------------------------------------------------|
| resource_id     | String           | Specifies the ECS ID.                               |
| resource_detail | String           | Reserved                                            |
| tags            | Array of objects | Lists tags.                                         |
| resource_name   | String           | Specifies the resource name, which is the ECS name. |

**Table 10-43** resource\_tag field description

| Parameter | Type   | Description                                                                                                                                                                                                                          |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | Specifies the tag key. <ul style="list-style-type: none"><li>• Contains a maximum of 127 Unicode characters.</li><li>• Cannot be left blank.</li><li>• Consists of only digits, letters, hyphens (-), and underscores (_).</li></ul> |
| value     | String | Specifies the tag value. <ul style="list-style-type: none"><li>• Contains a maximum of 255 Unicode characters.</li><li>• Can be left blank.</li><li>• Consists of only digits, letters, hyphens (-), and underscores (_).</li></ul>  |

## Examples

- Example request  
POST https://{endpoint}/v1/{project\_id}/cloudservers/resource\_instances/action  
{  
  "offset": "100",  
  "limit": "1",

```
"action": "filter",
"matches": [
 {
 "key": "resource_name",
 "value": "ecs_test"
 }
],
"tags": [
 {
 "key": "key1",
 "values": [
 "value1",
 "value2"
]
 }
]]
}
```

- Example response

```
{
 "resources": [
 {
 "resource_detail": null,
 "resource_id": "31760ffa-6711-406d-bc94-bce4ae925a8a",
 "resource_name": "ecs_test",
 "tags": [
 {
 "key": "key1",
 "value": "value1"
 }
]
 }
],
 "total_count": 1000
}
```

## Returned Values

See [Returned Values for General Requests](#).

## Error Codes

See [Error Codes](#).

# 10.6 Image Management (OpenStack Nova APIs)

## 10.6.1 Querying Images (Discarded)

### Function

This API is used to query all images.

This API has been discarded. Use the API described in [Querying Images \(Native OpenStack API\)](#).

### URI

GET /v2.1/{project\_id}/images?name={name}&status={status}&changes-since={changes-since}&minRam={minRam}&minDisk={inDisk}

[Table 10-44](#) describes the parameters in the URI.

**Table 10-44** Path parameters

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

 **NOTE**

Pagination query is supported. For details, see [Querying Data in Pages](#).

Parameters in the following table can be used as URI parameters to filter query results. Usage: /v2/{project\_id}/images? name ={name}&status={status}

[Table 10-45](#) describes the query parameters.

**Table 10-45** Query parameters

| Parameter     | Mandatory | Type    | Description                                                                                                                                                                                                                                   |
|---------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name          | No        | String  | Specifies the image name.                                                                                                                                                                                                                     |
| status        | No        | String  | Specifies the image status.<br>You cannot query images when the value is set to <b>deleted</b> . The value depends on the status in Glance.<br><a href="#">Table 10-46</a> shows the mapping relationship of image status in Nova and Glance. |
| changes-since | No        | String  | Specifies the images modified after the <b>changes-since</b> time point. The parameter is in ISO 8601 time format, for example, 2013-06-09T06:42:18Z.                                                                                         |
| minRam        | No        | Integer | Specifies the minimum memory size in MB required by the image.                                                                                                                                                                                |
| minDisk       | No        | Integer | Specifies the minimum disk size in GB required by the image.                                                                                                                                                                                  |

**Table 10-46** Mapping relationship of image status in Nova and Glance

| Image Status in Glance | Image Status in Nova |
|------------------------|----------------------|
| queued                 | saving               |
| saving                 | saving               |

| Image Status in Glance | Image Status in Nova |
|------------------------|----------------------|
| active                 | active               |
| deleted                | deleted              |

## Request

None

## Response

[Table 10-47](#) describes the response parameters.

**Table 10-47** Response parameters

| Parameter    | Mandatory | Type             | Description                                                                   |
|--------------|-----------|------------------|-------------------------------------------------------------------------------|
| images       | Yes       | Array of objects | Specifies the image information.                                              |
| images_links | No        | Array of objects | Specifies the information about the next page when you query images in pages. |

**Table 10-48** images information

| Parameter | Mandatory | Type             | Description                               |
|-----------|-----------|------------------|-------------------------------------------|
| id        | Yes       | String           | Specifies the image ID in UUID format.    |
| links     | Yes       | Array of objects | Specifies the shortcut link of the image. |
| name      | Yes       | String           | Specifies the image name.                 |

**Table 10-49** images\_links parameters

| Parameter | Mandatory | Type   | Description                                                        |
|-----------|-----------|--------|--------------------------------------------------------------------|
| href      | Yes       | String | Specifies the URL of the next page when you query images in pages. |

| Parameter | Mandatory | Type   | Description                                                   |
|-----------|-----------|--------|---------------------------------------------------------------|
| rel       | Yes       | String | Specifies the query direction when you query images in pages. |

**Table 10-50** links parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| href      | Yes       | String | Specifies the link of the corresponding resource.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| rel       | Yes       | String | The value can be: <ul style="list-style-type: none"> <li>• <b>self</b>: A self link contains a version link to the resource. Use these links when the link is followed immediately.</li> <li>• <b>bookmark</b>: A bookmark link provides a permanent link to a resource, which is suitable for long term storage.</li> <li>• <b>alternate</b>: An alternate link can contain an alternate representation of the resource. For example, an OpenStack Compute image may have an alternate representation in the OpenStack image service.</li> </ul> |
| type      | No        | String | The type attribute provides a hint as to the type of representation to expect when following the link.                                                                                                                                                                                                                                                                                                                                                                                                                                            |

### Example Request

```
GET https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/images
```

### Example Response

```
{
 "images": [
 {
 "id": "ee10f19c-503c-44af-af2f-73d5e42f7a17",
```



```
 "links": [
 {
 "href": "http://xxx/v2/d9ebe43510414ef590a4aa158605329e/images/ee10f19c-503c-44af-af2f-73d5e42f7a17",
 "rel": "self"
 },
 {
 "href": "http://xxx/d9ebe43510414ef590a4aa158605329e/images/ee10f19c-503c-44af-af2f-73d5e42f7a17",
 "rel": "bookmark"
 },
 {
 "href": "http://xxx/d9ebe43510414ef590a4aa158605329e/images/ee10f19c-503c-44af-af2f-73d5e42f7a17",
 "rel": "alternate",
 "type": "application/vnd.openstack.image"
 }
],
 "name": "image1"
 }
]
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.6.2 Querying Image Details (Discarded)

### Function

This API is used to query detailed information about an image list.

This API has been discarded. Use the API described in [Querying Images \(Native OpenStack API\)](#).

### URI

GET /v2.1/{project\_id}/images/detail?name={name}&status={status}&changes-since={changes-since}&minRam={minRam}&minDisk={inDisk}

[Table 10-51](#) describes the parameters in the URI.

**Table 10-51** Path parameters

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

#### NOTE

Pagination query is supported. For details, see [Querying Data in Pages](#).

Parameters in the following table can be used as URI parameters to filter query results. Usage: /v2/{tenant\_id}/images/detail? name ={name}&status={status}

[Table 10-52](#) describes the query parameters.

**Table 10-52** Query parameters

| Parameter     | Mandatory | Type    | Description                                                                                                                                                                                                                                |
|---------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name          | No        | String  | Specifies the image name.                                                                                                                                                                                                                  |
| status        | No        | String  | Specifies the image status.<br>You cannot query images when the value is set to <b>deleted</b> . The value depends on the status in Glance. <a href="#">Table 10-53</a> shows the mapping relationship of image status in Nova and Glance. |
| changes-since | No        | String  | Specifies the images modified after the <b>changes-since</b> time point. The value is in ISO8601 format, such as <b>2013-06-09T06:42:18Z</b> .                                                                                             |
| minRam        | No        | Integer | Specifies the minimum memory size in MB required by the image.                                                                                                                                                                             |
| minDisk       | No        | Integer | Specifies the minimum disk size in GB required by the image.                                                                                                                                                                               |

**Table 10-53** Mapping relationship of image status in Nova and Glance

| Image Status in Glance | Image Status in Nova |
|------------------------|----------------------|
| queued                 | saving               |
| saving                 | saving               |
| active                 | active               |
| deleted                | deleted              |

## Request

None

## Response

[Table 10-54](#) describes the response parameters.

**Table 10-54** Response parameters

| Parameter            | Type             | Description                                                                                                 |
|----------------------|------------------|-------------------------------------------------------------------------------------------------------------|
| id                   | String           | Specifies the image ID in UUID format.                                                                      |
| links                | Array of objects | Specifies the shortcut link of the image.                                                                   |
| name                 | String           | Specifies the image name.                                                                                   |
| metadata             | Object           | Specifies the key pair of the metadata.                                                                     |
| OS-EXT-IMG-SIZE:size | Integer          | Specifies the image size.<br>The value must be greater than zero.                                           |
| minDisk              | Integer          | Specifies the minimum disk size in GB required by the image.<br>The value must be greater than zero.        |
| minRam               | Integer          | Specifies the minimum memory size in GB required by the image.<br>The value must be greater than zero.      |
| progress             | Integer          | Specifies the image upload progress.<br>The value must be greater than zero.                                |
| status               | String           | Specifies the image status.                                                                                 |
| created              | String           | Specifies the image creation time.<br>The value is in ISO8601 format, such as <b>2013-06-09T06:42:18Z</b> . |
| updated              | String           | Specifies the image update time.<br>The value is in ISO8601 format, such as <b>2013-06-09T06:42:18Z</b> .   |

**Table 10-55** links parameter description

| Parameter | Mandatory | Type   | Description                                       |
|-----------|-----------|--------|---------------------------------------------------|
| href      | Yes       | String | Specifies the link of the corresponding resource. |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rel       | Yes       | String | The value can be: <ul style="list-style-type: none"> <li>• <b>self</b>: A self link contains a version link to the resource. Use these links when the link is followed immediately.</li> <li>• <b>bookmark</b>: A bookmark link provides a permanent link to a resource, which is suitable for long term storage.</li> <li>• <b>alternate</b>: An alternate link can contain an alternate representation of the resource. For example, an OpenStack Compute image may have an alternate representation in the OpenStack image service.</li> </ul> |
| type      | No        | String | The type attribute provides a hint as to the type of representation to expect when following the link.                                                                                                                                                                                                                                                                                                                                                                                                                                            |

### Example Request

```
GET https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/images/detail
```

### Example Response

```
{
 "image": {
 "OS-EXT-IMG-SIZE:size": 20578304,
 "created": "2014-02-10T17:05:01Z",
 "id": "ee10f19c-503c-44af-af2f-73d5e42f7a17",
 "links": [
 {
 "href": "http://xxx/v2/d9ebe43510414ef590a4aa158605329e/images/ee10f19c-503c-44af-af2f-73d5e42f7a17",
 "rel": "self"
 },
 {
 "href": "http://xxx/d9ebe43510414ef590a4aa158605329e/images/ee10f19c-503c-44af-af2f-73d5e42f7a17",
 "rel": "bookmark"
 },
 {
 "href": "http://xxx/d9ebe43510414ef590a4aa158605329e/images/ee10f19c-503c-44af-af2f-73d5e42f7a17",
 "rel": "alternate",
 "type": "application/vnd.openstack.image"
 }
]
 }
}
```

```
],
 "metadata": {
 "clean_attempts": "3",
 "image_location": "snapshot",
 "image_state": "available",
 "image_type": "snapshot",
 "instance_type_ephemeral_gb": "0",
 "instance_type_flavorid": "6",
 "instance_type_id": "7",
 "instance_type_memory_mb": "256",
 "instance_type_name": "wj.ssd",
 "instance_type_root_gb": "2",
 "instance_type_rxtx_factor": "1.0",
 "instance_type_swap": "0",
 "instance_type_vcpus": "1",
 "instance_uuid": "b600b5b1-ed8c-4814-aefa-8b903c894c20",
 "os_type": "None",
 "owner_id": "d9ebe43510414ef590a4aa158605329e",
 "user_id": "74fe4ff0674b434b8a274077d8106c5b"
 },
 "minDisk": 2,
 "minRam": 0,
 "name": "image1",
 "progress": 100,
 "server": {
 "id": "b600b5b1-ed8c-4814-aefa-8b903c894c20",
 "links": [
 {
 "href": "http://xxx/v2/d9ebe43510414ef590a4aa158605329e/servers/b600b5b1-ed8c-4814-aefa-8b903c894c20",
 "rel": "self"
 },
 {
 "href": "http://xxx/d9ebe43510414ef590a4aa158605329e/servers/b600b5b1-ed8c-4814-aefa-8b903c894c20",
 "rel": "bookmark"
 }
]
 },
 "status": "ACTIVE",
 "updated": "2014-02-10T17:05:07Z"
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.6.3 Querying Details About a Specified Image (Discarded)

### Function

This API is used to query the details about the specified image.

This API has been discarded. Use the API described in [Querying Images \(Native OpenStack API\)](#).

### URI

GET /v2.1/{project\_id}/images/{image\_id}

[Table 10-56](#) describes the parameters in the URI.

**Table 10-56** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| image_id   | Yes       | Specifies the image ID.                                                                                           |

## Request

None

## Response

[Table 10-57](#) describes the response parameters.

**Table 10-57** Response parameters

| Parameter            | Type             | Description                                                                                              |
|----------------------|------------------|----------------------------------------------------------------------------------------------------------|
| id                   | String           | Specifies the image ID in UUID format.                                                                   |
| links                | Array of objects | Specifies the shortcut link of the image.                                                                |
| name                 | String           | Specifies the image name.                                                                                |
| metadata             | Object           | Specifies the key pair of the metadata.                                                                  |
| OS-EXT-IMG-SIZE:size | Integer          | Specifies the image size. The value must be greater than zero.                                           |
| minDisk              | Integer          | Specifies the minimum disk size in GB required by the image. The value must be greater than zero.        |
| minRam               | Integer          | Specifies the minimum memory size in GB required by the image. The value must be greater than zero.      |
| progress             | Integer          | Specifies the image upload progress. The value must be greater than zero.                                |
| status               | String           | Specifies the image status.                                                                              |
| created              | String           | Specifies the image creation time. The value is in ISO8601 format, such as <b>2013-06-09T06:42:18Z</b> . |

| Parameter | Type   | Description                                                                                            |
|-----------|--------|--------------------------------------------------------------------------------------------------------|
| updated   | String | Specifies the image update time. The value is in ISO8601 format, such as <b>2013-06-09T06:42:18Z</b> . |

**Table 10-58** links parameter description

| Parameter | Mandator<br>y | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|---------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| href      | Yes           | String | Specifies the link of the corresponding resource.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| rel       | Yes           | String | The value can be: <ul style="list-style-type: none"> <li>• <b>self</b>: A self link contains a version link to the resource. Use these links when the link is followed immediately.</li> <li>• <b>bookmark</b>: A bookmark link provides a permanent link to a resource, which is suitable for long term storage.</li> <li>• <b>alternate</b>: An alternate link can contain an alternate representation of the resource. For example, an OpenStack Compute image may have an alternate representation in the OpenStack image service.</li> </ul> |
| type      | No            | String | The type attribute provides a hint as to the type of representation to expect when following the link.                                                                                                                                                                                                                                                                                                                                                                                                                                            |

### Example Request

```
GET https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/images/17a1890b-0fa4-485e-8505-14e294017988
```

### Example Response

```
{
 "image": {
 "status": "ACTIVE",
 "updated": "2015-12-27T02:52:25Z",
 "name": "cirror",
```

```
"links": [
 {
 "href": "https://compute.localdomain.com:8001/v2/719e9483f42d4784a089862ac4c3e8d0/
images/17a1890b-0fa4-485e-8505-14e294017988",
 "rel": "self"
 },
 {
 "href": "https://compute.localdomain.com:8001/719e9483f42d4784a089862ac4c3e8d0/images/
17a1890b-0fa4-485e-8505-14e294017988",
 "rel": "bookmark"
 },
 {
 "href": "https://https://image.azure.dc1.domainname.com:
443/719e9483f42d4784a089862ac4c3e8d0/images/17a1890b-0fa4-485e-8505-14e294017988",
 "type": "application/vnd.openstack.image",
 "rel": "alternate"
 }
],
"created": "2015-12-27T02:52:24Z",
"minDisk": 0,
"progress": 100,
"minRam": 0,
"metadata": {
 "_os_version": "CentOS 4.4 32bit",
 "file_format": "img",
 "file_name": "**.img",
 "describe": "",
 "_os_type": "Linux",
 "virtual_env_type": "KVM",
 "hw_disk_bus": "scsi"
},
"id": "17a1890b-0fa4-485e-8505-14e294017988",
"OS-EXT-IMG-SIZE:size": 13167616
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.6.4 Querying the Metadata of a Specified Image (Discarded)

### Function

This API is used to query the metadata of the specified image.

This API has been discarded. Use the API described in [Querying Images \(Native OpenStack API\)](#).

### URI

GET /v2.1/{project\_id}/images/{image\_id}/metadata

[Table 10-59](#) describes the parameters in the URI.



**Table 10-59** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| image_id   | Yes       | Specifies the image ID.                                                                                           |

## Request

None

## Response

[Table 10-60](#) describes the response parameters.

**Table 10-60** Response parameters

| Parameter          | Type   | Description                             |
|--------------------|--------|-----------------------------------------|
| User customization | String | Specifies the key pair of the metadata. |

## Example Request

```
GET https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/images/17a1890b-0fa4-485e-8505-14e294017988/metadata
```

## Example Response

```
{
 "metadata": {
 "__os_version": "Suse Linux Enterprise 12.2 64bit",
 "__image_source_type": "uds",
 "__imagetype": "gold",
 "__os_bit": "64",
 "__os_type": "Suse",
 "__isregistered": "true",
 "__image_location": "192.168.80.11:5080:pcsimsbeta:suse12.2-addx710-05-11",
 "virtual_env_type": "Ironic",
 "__platform": "Suse",
 "__support_o3s": "true"
 }
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.6.5 Deleting an Image (Discarded)

### Function

This API is used to delete a specified image. The image cannot be restored after being deleted.

This API has been discarded. Use the API described in [Deleting an Image \(Native OpenStack API\)](#).

### URI

DELETE /v2.1/{project\_id}/images/{image\_id}

[Table 10-61](#) describes the parameters in the URI.

**Table 10-61** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| image_id   | Yes       | Specifies the image ID.                                                                                           |

### Request

None

### Response

None

### Example Request

```
DELETE https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/images/6cad483b-e281-4985-a345-7afef1f3c5b7
```

### Example Response

None

### Returned Values

See [Returned Values for General Requests](#).

## 10.7 Security Group Management (OpenStack Nova APIs)

## 10.7.1 Querying Security Groups (Discarded)

### Function

This API is used to query security groups.

This API has been discarded. Use the API described in [Querying Security Groups](#).

### URI

GET /v2.1/{project\_id}/os-security-groups

[Table 10-62](#) describes the parameters in the URI.

**Table 10-62** Parameter description

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

 **NOTE**

Pagination query is not supported.

### Request

N/A

### Response

[Table 10-63](#) describes the response parameters.

**Table 10-63** Response parameters

| Parameter       | Type             | Description                                                               |
|-----------------|------------------|---------------------------------------------------------------------------|
| security_groups | Array of objects | Specifies security groups. For details, see <a href="#">Table 10-64</a> . |

**Table 10-64** security\_group objects

| Parameter   | Type   | Description                                                                        |
|-------------|--------|------------------------------------------------------------------------------------|
| description | String | Specifies information about a security group. It must contain 0 to 255 characters. |

| Parameter | Type             | Description                                                                    |
|-----------|------------------|--------------------------------------------------------------------------------|
| id        | String           | Specifies the security group ID in UUID format.                                |
| name      | String           | Specifies the security group name. It must contain 0 to 255 characters.        |
| rules     | Array of objects | Specifies security group rules. For details, see <a href="#">Table 10-65</a> . |
| tenant_id | String           | Specifies the tenant or project ID.                                            |

**Table 10-65 security\_group\_rule** objects

| Parameter       | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| parent_group_id | String  | Specifies the associated security group ID in UUID format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| ip_protocol     | String  | Specifies the protocol type or the IP protocol number. The value can be <b>icmp</b> , <b>tcp</b> , <b>udp</b> , or the IP protocol number.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| from_port       | Integer | <p>Specifies the start port number. The value ranges from 1 to 65,535 and cannot be greater than <b>to_port</b>.</p> <p>When <b>ip_protocol</b> is <b>icmp</b>, this parameter indicates the ICMP type field with a length from 0 to 255 characters.</p> <p><b>NOTE</b><br/>The ICMP message type is determined by the type field and code field in the packet. For details, see <b>Appendix &gt; ICMP-Port Range Relationship Table</b> in <i>Virtual Private Cloud API Reference</i>. <b>port_range_min</b> indicates the ICMP type field, and <b>port_range_max</b> indicates the ICMP code field.</p> |

| Parameter | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| to_port   | Integer | Specifies the stop port number. The value ranges from 1 to 65,535 and cannot be less than <b>from_port</b> .<br>When <b>ip_protocol</b> is <b>icmp</b> , this parameter indicates the ICMP code field with a length from 0 to 255 characters.<br><b>NOTE</b><br>The ICMP message type is determined by the type field and code field in the packet. For details, see <b>Appendix &gt; ICMP-Port Range Relationship Table</b> in <i>Virtual Private Cloud API Reference</i> .<br><b>port_range_min</b> indicates the ICMP type, and <b>port_range_max</b> indicates the ICMP code. |
| ip_range  | Object  | Specifies the peer IP segment in CIDR format. For details, see <a href="#">Table 10-66</a> .<br>Specify either <b>ip_range</b> or <b>group</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| group     | Object  | Specifies the name of the peer security group and the ID of the tenant in the peer security group. For details, see <a href="#">Table 10-67</a> .<br>Specify either <b>ip_range</b> or <b>group</b> .                                                                                                                                                                                                                                                                                                                                                                             |
| id        | String  | Specifies the security group rule ID in UUID format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

**Table 10-66 ip\_range objects**

| Parameter | Type   | Description                                   |
|-----------|--------|-----------------------------------------------|
| cidr      | String | Specifies the peer IP segment in CIDR format. |

**Table 10-67 group objects**

| Parameter | Type   | Description                                                |
|-----------|--------|------------------------------------------------------------|
| tenant_id | String | Specifies the ID of the tenant of the peer security group. |
| name      | String | Specifies the name of the peer security group.             |

## Example Request

```
GET https://{endpoint}/v2.1/bb1118612ba64af3a6ea63a1bdcaa5ae/os-security-groups
```

## Example Response

```
{
 "security_groups": [
 {
 "rules": [
 {
 "from_port": null,
 "group": {
 "tenant_id": "bb1118612ba64af3a6ea63a1bdcaa5ae",
 "name": "default"
 },
 "ip_protocol": null,
 "to_port": null,
 "parent_group_id": "bc4ac1d1-dc77-4b7d-a97d-af86eb0dc450",
 "ip_range": {},
 "id": "bb3cc988-e06a-49f6-b668-600e8bf193ee"
 },
 {
 "from_port": null,
 "group": {
 "tenant_id": "bb1118612ba64af3a6ea63a1bdcaa5ae",
 "name": "default"
 },
 "ip_protocol": null,
 "to_port": null,
 "parent_group_id": "bc4ac1d1-dc77-4b7d-a97d-af86eb0dc450",
 "ip_range": {},
 "id": "f9371051-d7e1-4be4-8748-77b1e0913730"
 }
],
 "tenant_id": "bb1118612ba64af3a6ea63a1bdcaa5ae",
 "description": "default",
 "id": "bc4ac1d1-dc77-4b7d-a97d-af86eb0dc450",
 "name": "default"
 },
 {
 "rules": [
 {
 "from_port": 200,
 "group": {},
 "ip_protocol": "tcp",
 "to_port": 400,
 "parent_group_id": "b3e4b615-a40f-4e1c-92af-2e0d382141d5",
 "ip_range": {
 "cidr": "0.0.0.0/0"
 },
 "id": "3330120d-bbd1-4a73-bda9-0196a84d5670"
 },
 {
 "from_port": 201,
 "group": {},
 "ip_protocol": "tcp",
 "to_port": 400,
 "parent_group_id": "b3e4b615-a40f-4e1c-92af-2e0d382141d5",
 "ip_range": {
 "cidr": "0.0.0.0/0"
 },
 "id": "b550c9a6-970a-462d-984e-265e88020818"
 }
],
 "tenant_id": "bb1118612ba64af3a6ea63a1bdcaa5ae",
```

```
"description": "desc-sg",
"id": "b3e4b615-a40f-4e1c-92af-2e0d382141d5",
"name": "test-sg"
}
]
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.7.2 Creating a Security Group (Discarded)

### Function

This API is used to create a security group.

This API has been discarded. Use the API described in [Creating a Security Group](#).

### URI

POST /v2.1/{project\_id}/os-security-groups

[Table 10-68](#) describes the parameters in the URI.

**Table 10-68** Parameter description

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

### Request

[Table 10-69](#) describes the request parameters.

**Table 10-69** Request parameters

| Parameter      | Mandatory | Type   | Description                                                                                                           |
|----------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------|
| security_group | Yes       | Object | Specifies the security group, which is configured in the message body. For details, see <a href="#">Table 10-70</a> . |

**Table 10-70** Objects of request parameter **security\_group**

| Parameter   | Mandatory | Type   | Description                                                                        |
|-------------|-----------|--------|------------------------------------------------------------------------------------|
| name        | No        | String | Specifies the security group name. It must contain 0 to 255 characters.            |
| description | No        | String | Specifies information about a security group. It must contain 0 to 255 characters. |

## Response

[Table 10-71](#) describes the response parameters.

**Table 10-71** Response parameters

| Parameter      | Type   | Description                                                                  |
|----------------|--------|------------------------------------------------------------------------------|
| security_group | Object | Specifies the security group. For details, see <a href="#">Table 10-72</a> . |

**Table 10-72** Objects of response parameter **security\_group**

| Parameter   | Type             | Description                                                   |
|-------------|------------------|---------------------------------------------------------------|
| description | String           | Provides supplementary information about the security group.  |
| id          | String           | Specifies the security group ID in UUID format.               |
| name        | String           | Specifies the security group name.                            |
| rules       | Array of objects | Specifies the rules of the security group. The list is empty. |
| tenant_id   | String           | Specifies the tenant or project ID.                           |

## Example Request

```
POST https://{endpoint}/v2.1/bb1118612ba64af3a6ea63a1bdcaa5ae/os-security-groups
{
 "security_group": {
 "name": "test",
 "description": "description"
 }
}
```



```
}
}
```

## Example Response

```
{
 "security_group": {
 "rules": [],
 "tenant_id": "bb1118612ba64af3a6ea63a1bdcaa5ae",
 "description": "desc-sg",
 "id": "81f1d23b-b1e2-42cd-bdee-359b4a065a42",
 "name": "test-sg"
 }
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.7.3 Querying Details About a Security Group (Discarded)

### Function

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

This API can only query the inbound security group rules. To query the outbound security group rules, see "Querying a Security Group" in "Security Group (Native OpenStack API)" in the *Virtual Private Cloud API Reference*.

This API has been discarded. Use the API described in [Querying a Security Group](#).

### URI

GET /v2.1/{project\_id}/os-security-groups/{security\_group\_id}

[Table 10-73](#) describes the parameters in the URI.

**Table 10-73** Parameter description

| Parameter         | Mandatory | Description                                                                                                       |
|-------------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id        | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| security_group_id | Yes       | Specifies the security group ID, which is specified in the URI.                                                   |

### Request

None

### Response

[Table 10-74](#) describes the response parameters.

**Table 10-74** Response parameters

| Parameter      | Type   | Description                                                                  |
|----------------|--------|------------------------------------------------------------------------------|
| security_group | Object | Specifies the security group. For details, see <a href="#">Table 10-75</a> . |

**Table 10-75** security\_group objects

| Parameter   | Type             | Description                                                                        |
|-------------|------------------|------------------------------------------------------------------------------------|
| description | String           | Specifies information about a security group. It must contain 0 to 255 characters. |
| id          | String           | Specifies the security group ID in UUID format.                                    |
| name        | String           | Specifies the security group name. It must contain 0 to 255 characters.            |
| rules       | Array of objects | Specifies security group rules. For details, see <a href="#">Table 10-76</a> .     |
| tenant_id   | String           | Specifies the tenant or project ID.                                                |

**Table 10-76** security\_group\_rule objects

| Parameter       | Type   | Description                                                                                                                                |
|-----------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------|
| parent_group_id | String | Specifies the associated security group ID in UUID format.                                                                                 |
| ip_protocol     | String | Specifies the protocol type or the IP protocol number. The value can be <b>icmp</b> , <b>tcp</b> , <b>udp</b> , or the IP protocol number. |

| Parameter | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| from_port | Integer | <p>Specifies the start port number. The value ranges from <b>1</b> to <b>65,535</b> and cannot be greater than <b>to_port</b>.</p> <p>When <b>ip_protocol</b> is <b>icmp</b>, this parameter indicates the ICMP type field with a length from 0 to 255 characters.</p> <p><b>NOTE</b><br/>The ICMP message type is determined by the type field and code field in the packet. For details, see <b>Appendix &gt; ICMP-Port Range Relationship Table</b> in <i>Virtual Private Cloud API Reference</i>. <b>port_range_min</b> indicates the ICMP type, and <b>port_range_max</b> indicates the ICMP code.</p> |
| to_port   | Integer | <p>Specifies the stop port number. The value ranges from 1 to 65,535 and cannot be less than <b>from_port</b>.</p> <p>When <b>ip_protocol</b> is <b>icmp</b>, this parameter indicates the ICMP code field with a length from 0 to 255 characters.</p> <p><b>NOTE</b><br/>The ICMP message type is determined by the type field and code field in the packet. For details, see <b>Appendix &gt; ICMP-Port Range Relationship Table</b> in <i>Virtual Private Cloud API Reference</i>. <b>port_range_min</b> indicates the ICMP type, and <b>port_range_max</b> indicates the ICMP code.</p>                 |
| ip_range  | Object  | <p>Specifies the peer IP segment in CIDR format. For details, see <a href="#">Table 10-77</a>.</p> <p>Specify either <b>ip_range</b> or <b>group</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| group     | Object  | <p>Specifies the name of the peer security group and the ID of the tenant in the peer security group. For details, see <a href="#">Table 10-78</a>.</p> <p>Specify either <b>ip_range</b> or <b>group</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                              |

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

Table 10-77 ip\_range objects

| Parameter | Type   | Description                                   |
|-----------|--------|-----------------------------------------------|
| cidr      | String | Specifies the peer IP segment in CIDR format. |

Table 10-78 group objects

| Parameter | Type   | Description                                                |
|-----------|--------|------------------------------------------------------------|
| tenant_id | String | Specifies the ID of the tenant of the peer security group. |
| name      | String | Specifies the name of the peer security group.             |

## Example Request

```
GET https://{endpoint}/v2.1/bb1118612ba64af3a6ea63a1bdcaa5ae/os-security-groups/81f1d23b-b1e2-42cd-bdee-359b4a065a42
```

## Example Response

```
{
 "security_group": {
 "rules": [],
 "tenant_id": "bb1118612ba64af3a6ea63a1bdcaa5ae",
 "id": "81f1d23b-b1e2-42cd-bdee-359b4a065a42",
 "name": "test-sg",
 "description": "desc-sg"
 }
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.7.4 Updating a Security Group (Discarded)

### Function

This API is used to update a security group.

This API has been discarded. Use the API described in [Updating a Security Group](#).

## URI

PUT /v2.1/{project\_id}/os-security-groups/{security\_group\_id}

[Table 10-79](#) describes the parameters in the URI.

**Table 10-79** Parameter description

| Parameter         | Mandatory | Description                                                                                                       |
|-------------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id        | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| security_group_id | Yes       | Specifies the security group ID, which is specified in the URI.                                                   |

## Request

[Table 10-80](#) describes the request parameters.

**Table 10-80** Request parameters

| Parameter      | Mandatory | Type   | Description                                                                                      |
|----------------|-----------|--------|--------------------------------------------------------------------------------------------------|
| security_group | Yes       | Object | Specifies the security group in the message body. For details, see <a href="#">Table 10-81</a> . |

**Table 10-81** Objects of request parameter **security\_group**

| Parameter   | Mandatory | Type   | Description                                                                              |
|-------------|-----------|--------|------------------------------------------------------------------------------------------|
| name        | Yes       | String | Specifies the security group name.<br>The value cannot exceed 255 characters.            |
| description | Yes       | String | Specifies information about a security group.<br>The value cannot exceed 255 characters. |

## Response

[Table 10-82](#) describes the response parameters.

**Table 10-82** Response parameters

| Parameter      | Mandatory | Type   | Description                                                                  |
|----------------|-----------|--------|------------------------------------------------------------------------------|
| security_group | Yes       | Object | Specifies the security group. For details, see <a href="#">Table 10-83</a> . |

**Table 10-83** Objects of response parameter **security\_group**

| Parameter   | Mandatory | Type             | Description                                                                              |
|-------------|-----------|------------------|------------------------------------------------------------------------------------------|
| description | Yes       | String           | Specifies information about a security group.<br>The value cannot exceed 255 characters. |
| id          | Yes       | String           | Specifies the security group ID in UUID format.                                          |
| name        | Yes       | String           | Specifies the security group name.<br>The value cannot exceed 255 characters.            |
| rules       | Yes       | Array of objects | Specifies the security group rule list. For details, see <a href="#">Table 10-84</a> .   |
| tenant_id   | Yes       | String           | Specifies the tenant or project ID.<br>The value cannot exceed 255 characters.           |

**Table 10-84** **security\_group\_rule** objects

| Parameter       | Mandatory | Type   | Description                                                                                                                                |
|-----------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------|
| parent_group_id | Yes       | String | Specifies the associated security group ID in UUID format.                                                                                 |
| ip_protocol     | Yes       | String | Specifies the protocol type or the IP protocol number. The value can be <b>icmp</b> , <b>tcp</b> , <b>udp</b> , or the IP protocol number. |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                  |
|-----------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| from_port | Yes       | Integer | Specifies the start port. The value ranges from 1 to 65,535 and cannot be greater than <b>to_port</b> . When <b>ip_protocol</b> is <b>icmp</b> , this parameter specifies a port type with a length from 0 to 255 characters.                                                                |
| to_port   | Yes       | Integer | Specifies the end port. The value ranges from 1 to 65,535 and cannot be less than <b>from_port</b> . When <b>ip_protocol</b> is <b>icmp</b> , it specifies the code. The value ranges from 0 to 255. If both <b>from_port</b> and <b>to_port</b> are -1, any ICMP packet can be transmitted. |
| ip_range  | Yes       | Object  | Specifies the peer IP segment in CIDR format. For details, see <a href="#">Table 10-85</a> . The value of <b>ip_range</b> or <b>group</b> must be empty.                                                                                                                                     |
| group     | Yes       | Object  | Specifies the name of the peer security group and the ID of the tenant in the peer security group. For details, see <a href="#">Table 10-86</a> . The value of <b>ip_range</b> or <b>group</b> must be empty.                                                                                |
| id        | Yes       | String  | Specifies the security group rule ID in UUID format.                                                                                                                                                                                                                                         |

Table 10-85 ip\_range objects

| Parameter | Mandatory | Type   | Description                                                                           |
|-----------|-----------|--------|---------------------------------------------------------------------------------------|
| cidr      | Yes       | String | Specifies the peer IP segment in CIDR format. The value cannot exceed 255 characters. |

**Table 10-86** group objects

| Parameter | Mandatory | Type   | Description                                                |
|-----------|-----------|--------|------------------------------------------------------------|
| tenant_id | Yes       | String | Specifies the ID of the tenant of the peer security group. |
| name      | Yes       | String | Specifies the name of the peer security group.             |

## Example Request

```
PUT https://{endpoint}/v2.1/bb1118612ba64af3a6ea63a1bdcaa5ae/os-security-groups/
3d02312d-0764-49c9-8244-2368ddce0045
{
 "security_group": {
 "name": "test",
 "description": "description"
 }
}
```

## Example Response

```
{
 "security_group": {
 "rules": [
 {
 "from_port": null,
 "group": {
 "tenant_id": "bb1118612ba64af3a6ea63a1bdcaa5ae",
 "name": "test"
 },
 "ip_protocol": null,
 "to_port": null,
 "parent_group_id": "3d02312d-0764-49c9-8244-2368ddce0045",
 "ip_range": {},
 "id": "00dec0b6-8e96-4906-aadf-46cfe54cf5ef"
 }
],
 "tenant_id": "bb1118612ba64af3a6ea63a1bdcaa5ae",
 "id": "3d02312d-0764-49c9-8244-2368ddce0045",
 "name": "test",
 "description": "description"
 }
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.7.5 Deleting a Security Group (Discarded)

### Function

This API is used to delete a security group.

This API has been discarded. Use the API described in [Deleting a Security Group](#).



## URI

DELETE /v2.1/{project\_id}/os-security-groups/{security\_group\_id}

[Table 10-87](#) describes the parameters in the URI.

**Table 10-87** Parameter description

| Parameter         | Mandatory | Description                                                                                                       |
|-------------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id        | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| security_group_id | Yes       | Specifies the security group ID, which is specified in the URI.                                                   |

## Request

None

## Response

None

## Example Request

```
DELETE https://{endpoint}/v2.1/bb1118612ba64af3a6ea63a1bdcaa5ae/os-security-groups/81f1d23b-b1e2-42cd-bdee-359b4a065a42
```

## Example Response

None

## Returned Values

See [Returned Values for General Requests](#).

## 10.7.6 Creating a Security Group Rule (Discarded)

### Function

This API is used to create a security group rule.

This API has been discarded. Use the API described in [Creating a Security Group Rule](#).

## URI

POST /v2.1/{project\_id}/os-security-group-rules

[Table 10-88](#) describes the parameters in the URI.

**Table 10-88** Parameter description

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

## Request

[Table 10-89](#) describes the request parameters.

**Table 10-89** Request parameters

| Parameter           | Mandatory | Type   | Description                                                                                                                |
|---------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------|
| security_group_rule | Yes       | Object | Specifies the security group rule, which is configured in the message body. For details, see <a href="#">Table 10-90</a> . |

**Table 10-90** Objects of request parameter **security\_group\_rule**

| Parameter       | Mandatory | Type    | Description                                                                                                                                                                                                                                                    |
|-----------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| parent_group_id | Yes       | String  | Specifies the associated security group ID in UUID format.                                                                                                                                                                                                     |
| ip_protocol     | Yes       | String  | Specifies the IP protocol, which can be <b>icmp</b> , <b>tcp</b> , or <b>udp</b> .                                                                                                                                                                             |
| from_port       | Yes       | Integer | Specifies the start port. The value ranges from 1 to 65,535 and is no greater than the value of <b>to_port</b> .<br>If the value of <b>ip_protocol</b> is <b>icmp</b> , this parameter specifies the ICMP type. The value ranges from <b>0</b> to <b>255</b> . |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                          |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| to_port   | Yes       | Integer | Specifies the end port. The value ranges from <b>1</b> to <b>65,535</b> and cannot be less than <b>from_port</b> .<br>If <b>ip_protocol</b> is <b>icmp</b> , this parameter specifies the ICMP code. The value ranges from 0 to 255. If both <b>from_port</b> and <b>to_port</b> are <b>-1</b> , any ICMP packet can be transmitted. |
| cidr      | No        | String  | Specifies the IP address range. The address is in CIDR format, such as 192.168.0.0/24.                                                                                                                                                                                                                                               |
| group_id  | No        | String  | Specifies the source security group ID. If both <b>group_id</b> and <b>cidr</b> are set, <b>group_id</b> is used.                                                                                                                                                                                                                    |

## Response

[Table 10-91](#) describes the response parameters.

**Table 10-91** Response parameters

| Parameter           | Mandatory | Type   | Description                                                                                                                |
|---------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------|
| security_group_rule | Yes       | Object | Specifies the security group rule, which is configured in the message body. For details, see <a href="#">Table 10-92</a> . |

**Table 10-92** Objects of response parameter **security\_group\_rule**

| Parameter       | Mandatory | Type   | Description                                                                        |
|-----------------|-----------|--------|------------------------------------------------------------------------------------|
| parent_group_id | Yes       | String | Specifies the associated security group ID in UUID format.                         |
| ip_protocol     | Yes       | String | Specifies the IP protocol, which can be <b>icmp</b> , <b>tcp</b> , or <b>udp</b> . |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| from_port | Yes       | Integer | Specifies the start port number. The value ranges from 1 to 65,535 and cannot be greater than <b>to_port</b> .<br>When the protocol type is set to ICMP, <b>from_port</b> is the ICMP type and ranges from 0 to 255.                                                                                                                         |
| to_port   | Yes       | Integer | Specifies the end port number. The value ranges from 1 to <b>65,535</b> . <ul style="list-style-type: none"><li>When the protocol type is set to ICMP, <b>to_port</b> is the ICMP code and ranges from 0 to 255.</li><li>If both <b>from_port</b> and <b>to_port</b> are -1, it indicates that any ICMP packet can be transmitted.</li></ul> |
| ip_range  | Yes       | Object  | Specifies the IP address range, including the CIDR information, such as <b>"ip_range": {"cidr": "0.0.0.0/0"}</b> . For details, see the ip_range object.                                                                                                                                                                                     |
| group     | Yes       | Object  | Nothing is returned.                                                                                                                                                                                                                                                                                                                         |
| id        | Yes       | String  | Specifies the security group rule ID in UUID format.                                                                                                                                                                                                                                                                                         |

Table 10-93 ip\_range objects

| Parameter | Mandatory | Type   | Description                                                                            |
|-----------|-----------|--------|----------------------------------------------------------------------------------------|
| cidr      | Yes       | String | Specifies the IP address range. The address is in CIDR format, such as 192.168.0.0/24. |

## Example Request

```
POST https://{endpoint}/v2.1/{project_id}/os-security-group-rules
{
 "security_group_rule": {
 "from_port": "443",
 "ip_protocol": "tcp",
```

```
"to_port": "443",
"cidr": "0.0.0.0/0",
"parent_group_id": "48700ff3-30b8-4e63-845f-a79c9633e9fb"
}
}
```

## Example Response

```
{
 "security_group_rule": {
 "id": "F4966B29-D21D-B211-B6B4-0018E1C5D866",
 "ip_range": {
 "cidr": "0.0.0.0/0"
 },
 "parent_group_id": "48700ff3-30b8-4e63-845f-a79c9633e9fb",
 "to_port": 443,
 "ip_protocol": "tcp",
 "group": {
 },
 "from_port": 443
 }
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.7.7 Deleting a Security Group Rule (Discarded)

### Function

This API is used to delete a security group rule.

This API has been discarded. Use the API described in [Deleting a Security Group Rule](#).

### URI

DELETE /v2.1/{project\_id}/os-security-group-rules/{security\_group\_rule\_id}

[Table 10-94](#) describes the parameters in the URI.

**Table 10-94** Parameter description

| Parameter              | Mandatory | Description                                                                                                       |
|------------------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id             | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| security_group_rule_id | Yes       | Specifies the security group rule ID, which is specified in the URI.                                              |

### Request

None

## Response

None

## Example Request

Example request

```
DELETE https://{endpoint}/v2.1/3d72597871904daeb6887f75f848b531/os-security-group-rules/012fa2c6-
bf4a-4b0b-b893-70d0caee81c7
```

## Example Response

None

## Returned Values

See [Returned Values for General Requests](#).

# 10.8 Disk Management (OpenStack Nova APIs)

## 10.8.1 Querying Brief Information About Disks (Discarded)

### Function

This API is used to query brief information about disks.

This API has been discarded. Use the API described in [Querying EVS Disks \(OpenStack Cinder API v2\)](#).

### URI

GET /v2.1/{project\_id}/os-volumes

[Table 10-95](#) describes the parameters in the URI.

**Table 10-95** Parameter description

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

### Request

N/A

## Response

**Table 10-96** describes the response parameters.

**Table 10-96** Response parameters

| Parameter          | Type             | Description                                        |
|--------------------|------------------|----------------------------------------------------|
| id                 | String           | Specifies the disk ID in UUID format.              |
| displayName        | String           | Specifies the disk name.                           |
| status             | String           | Specifies the disk status.                         |
| attachments        | Array of objects | Specifies the attachment information about a disk. |
| availabilityZone   | String           | Specifies the AZ to which the disk belongs.        |
| createdAt          | String           | Specifies the time when the disk was created.      |
| displayDescription | String           | Specifies the disk description.                    |
| volumeType         | String           | Specifies the disk type.                           |
| snapshotId         | String           | Specifies the snapshot ID.                         |
| metadata           | Object           | Specifies the disk metadata.                       |
| size               | Integer          | Specifies the disk size.                           |

**Table 10-97** attachments field description

| Parameter | Type   | Description                                           |
|-----------|--------|-------------------------------------------------------|
| device    | String | Specifies the directory to which the disk is mounted. |
| id        | String | Specifies the ID of the attached resource.            |
| serverId  | String | Specifies the ECS ID.                                 |
| volumeId  | String | Specifies the ID of the attached disk.                |

## Example Request

```
GET https://{endpoint}/v2.1/b84c367e4d1047fc9b54f28b400ddbc2/os-volumes
```

## Example Response

```
{
 "volumes": [
 {
 "status": "available",
 "attachments": [],
 "availabilityZone": "nova",
 "createdAt": "2016-05-20T07:57:56.299000",
 "displayDescription": null,
 "volumeType": null,
 "displayName": "test",
 "snapshotId": null,
 "metadata": {},
 "id": "70b14513-faad-4646-b7ab-a065cef282b4",
 "size": 1
 }
]
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.8.2 Querying Detailed Information About Disks (Discarded)

### Function

This API is used to query detailed information about disks.

This API has been discarded. Use the API described in [Querying Details About All Disks \(OpenStack Cinder API v2\)](#).

### URI

GET /v2.1/{project\_id}/os-volumes/detail

[Table 10-98](#) describes the parameters in the URI.

**Table 10-98** Parameter description

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

### Request

N/A

### Response

[Table 10-99](#) describes the response parameters.



**Table 10-99** Response parameters

| Parameter          | Type             | Description                                        |
|--------------------|------------------|----------------------------------------------------|
| id                 | String           | Specifies the disk ID in UUID format.              |
| displayName        | String           | Specifies the disk name.                           |
| status             | String           | Specifies the disk status.                         |
| attachments        | Array of objects | Specifies the attachment information about a disk. |
| availabilityZone   | String           | Specifies the AZ to which the disk belongs.        |
| createdAt          | String           | Specifies the time when the disk was created.      |
| displayDescription | String           | Specifies the disk description.                    |
| volumeType         | String           | Specifies the disk type.                           |
| snapshotId         | String           | Specifies the snapshot ID.                         |
| metadata           | Object           | Specifies the disk metadata.                       |
| size               | Integer          | Specifies the disk size.                           |

**Table 10-100** attachments field description

| Parameter | Type   | Description                                           |
|-----------|--------|-------------------------------------------------------|
| device    | String | Specifies the directory to which the disk is mounted. |
| id        | String | Specifies the ID of the attached resource.            |
| serverId  | String | Specifies the ECS ID.                                 |
| volumeId  | String | Specifies the ID of the attached disk.                |

## Example Request

```
GET https://{endpoint}/v2.1/b84c367e4d1047fc9b54f28b400ddbc2/os-volumes/detail
```

## Example Response

```
{
 "volumes": [
 {
 "status": "available",
 "attachments": [],
 "availabilityZone": "nova",
 "createdAt": "2016-05-20T07:57:56.299000",
 }
]
}
```

```
"displayDescription": null,
"volumeType": null,
"displayName": "test",
"snapshotId": null,
"metadata": {},
"id": "70b14513-faad-4646-b7ab-a065cef282b4",
"size": 1
}
]
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.8.3 Querying Information About a Disk (Discarded)

### Function

This API is used to query information about a specified disk.

This API has been discarded. Use the API described in [Querying Details About a Disk \(OpenStack Cinder API v2\)](#).

### URI

GET /v2.1/{project\_id}/os-volumes/{volume\_id}

[Table 10-101](#) describes the parameters in the URI.

**Table 10-101** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| volume_id  | Yes       | Specifies the disk ID.                                                                                            |

### Request

None

### Response

[Table 10-102](#) describes the response parameters.

**Table 10-102** Response parameters

| Parameter          | Type             | Description                                        |
|--------------------|------------------|----------------------------------------------------|
| id                 | String           | Specifies the disk ID in UUID format.              |
| displayName        | String           | Specifies the disk name.                           |
| status             | String           | Specifies the disk status.                         |
| attachments        | Array of objects | Specifies the attachment information about a disk. |
| availabilityZone   | String           | Specifies the AZ to which the disk belongs.        |
| createdAt          | String           | Specifies the time when the disk was created.      |
| displayDescription | String           | Specifies the disk description.                    |
| volumeType         | String           | Specifies the disk type.                           |
| snapshotId         | String           | Specifies the snapshot ID.                         |
| metadata           | Object           | Specifies the disk metadata.                       |
| size               | Integer          | Specifies the disk size.                           |

**Table 10-103** attachments field description

| Parameter | Type   | Description                                           |
|-----------|--------|-------------------------------------------------------|
| device    | String | Specifies the directory to which the disk is mounted. |
| id        | String | Specifies the ID of the attached resource.            |
| serverId  | String | Specifies the ECS ID.                                 |
| volumeId  | String | Specifies the ID of the attached disk.                |

## Example Request

```
GET https://{endpoint}/v2.1/b84c367e4d1047fc9b54f28b400ddbc2/os-volumes/70b14513-faad-4646-b7ab-a065cef282b4
```

## Example Response

```
{
 "volume":
```

```
{
 "status": "available",
 "attachments": [],
 "availabilityZone": "nova",
 "createdAt": "2016-05-20T07:57:56.299000",
 "displayDescription": null,
 "volumeType": null,
 "displayName": "test",
 "snapshotId": null,
 "metadata": {},
 "id": "70b14513-faad-4646-b7ab-a065cef282b4",
 "size": 1
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.8.4 Creating a Disk (Discarded)

### Function

This API is used to create a disk.

This API has been discarded. Use the API described in [Creating EVS Disks \(OpenStack Cinder API v2\)](#).

### URI

POST /v2.1/{project\_id}/os-volumes

[Table 10-104](#) describes the parameters in the URI.

**Table 10-104** Parameter description

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

### Request

[Table 10-105](#) describes the request parameters.

**Table 10-105** Request parameters

| Parameter           | Mandatory                                                                   | Type    | Description                                                                                                                                                                                                                                                                |
|---------------------|-----------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| availability_zone   | No                                                                          | String  | Specifies the AZ to which the volume to be created belongs.<br>If the specified AZ does not exist, creating the volume failed, and the volume is in <b>error</b> state.<br>The AZ to which the volume to be created belongs must be specified in the cloud service system. |
| display_description | No                                                                          | String  | Specifies the volume description.                                                                                                                                                                                                                                          |
| snapshot_id         | No                                                                          | String  | Specifies the snapshot ID.<br>If this parameter is specified, the volume is to be created from a snapshot.                                                                                                                                                                 |
| size                | Yes (If the volume is created from a snapshot, this parameter is optional.) | Integer | Specifies the volume size.<br>Unit: GB                                                                                                                                                                                                                                     |
| display_name        | No                                                                          | String  | Specifies the volume name.                                                                                                                                                                                                                                                 |
| volume_type         | No                                                                          | String  | Specifies the volume type.                                                                                                                                                                                                                                                 |
| metadata            | No                                                                          | Object  | Specifies the volume metadata.                                                                                                                                                                                                                                             |

## Response

**Table 10-106** describes the response parameters.

**Table 10-106** Response parameters

| Parameter   | Type   | Description                           |
|-------------|--------|---------------------------------------|
| id          | String | Specifies the disk ID in UUID format. |
| displayName | String | Specifies the volume name.            |
| status      | String | Specifies the volume status.          |

| Parameter          | Type             | Description                                     |
|--------------------|------------------|-------------------------------------------------|
| attachments        | Array of objects | Specifies the volume attachment information.    |
| availabilityZone   | String           | Specifies the AZ to which the volume belongs.   |
| createdAt          | String           | Specifies the time when the volume was created. |
| displayDescription | String           | Specifies the volume description.               |
| volumeType         | String           | Specifies the volume type.                      |
| snapshotId         | String           | Specifies the snapshot ID.                      |
| metadata           | Object           | Specifies the volume metadata.                  |
| size               | Integer          | Specifies the size of the volume.               |

## Example Request

```
POST https://{endpoint}/v2.1/b84c367e4d1047fc9b54f28b400ddbc2/os-volumes
{
 "volume": {
 "availability_zone": "az1-dc1",
 "display_description": "test1",
 "snapshot_id": null,
 "size": 1,
 "display_name": "test",
 "volume_type": "SSD",
 "metadata": {
 "testkey": "testvalue"
 }
 }
}
```

## Example Response

```
{
 "volume": {
 "displayDescription": "test1",
 "volumeType": "SATA",
 "createdAt": "2018-05-18T01:17:03.871808",
 "metadata": {
 "testkey": "testvalue",
 "resourceSpecCode": "SATA"
 },
 "attachments": [
 {}
],
 "snapshotId": null,
 "size": 1,
 "displayName": "test",
 "id": "b4fb891c-c665-4478-92b0-8a7fa65a57cd",
 "availabilityZone": "az1.dc1",
 "status": "creating"
 }
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.8.5 Deleting a Disk (Discarded)

### Function

This API is used to delete a specified disk.

This API has been discarded. Use the API described in [Deleting an EVS Disk \(OpenStack Cinder API v2\)](#).

### Constraints

- If the volume has a snapshot not deleted, the volume cannot be deleted.
- A volume that is being attached to an ECS cannot be deleted.
- A volume that is being migrated cannot be deleted.
- Only a volume in the available, error, error\_restoring, or error\_extending state can be deleted.

### URI

DELETE /v2.1/{project\_id}/os-volumes/{volume\_id}

[Table 10-107](#) describes the parameters in the URI.

**Table 10-107** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| volume_id  | Yes       | Specifies the volume ID.                                                                                          |

### Request

None

### Response

None

### Example Request

```
DELETE https://{endpoint}/v2.1/b84c367e4d1047fc9b54f28b400ddbc2/os-volumes/0cf90bab-c513-46df-8559-45ba6de80e3f
```

## Example Response

None

## Returned Values

See [Returned Values for General Requests](#).

# 10.9 Floating IP Address Management (OpenStack Nova APIs)

## 10.9.1 Binding a Floating IP Address (Discarded)

### Function

This API is used to bind a floating IP address for an ECS.

This API has been discarded. Since microversion 2.44, the system will return error 404 when you call this API. Use the VPC API [Updating a Floating IP Address](#).

### URI

POST /v2.1/{project\_id}/servers/{server\_id}/action

[Table 10-108](#) describes the parameters in the URI.

**Table 10-108** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| server_id  | Yes       | Specifies the ECS ID.                                                                                             |

### Request

[Table 10-109](#) describes the request parameters.

**Table 10-109** Request parameter

| Parameter     | Mandatory | Type   | Description                                              |
|---------------|-----------|--------|----------------------------------------------------------|
| addFloatingIp | Yes       | Object | Specifies the floating IP address to be bound to an ECS. |



**Table 10-110 addFloatingIp** parameter information

| Parameter     | Mandatory | Type   | Description                                                                   |
|---------------|-----------|--------|-------------------------------------------------------------------------------|
| address       | Yes       | String | Specifies the floating IP address.                                            |
| fixed_address | No        | String | Specifies the fixed IP address with which the floating IP address associates. |

## Response

None

## Example Request

```
POST https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/servers/47e9be4e-a7b9-471f-92d9-ffc83814e07a/action
{
 "addFloatingIp": {
 "address": "10.144.2.1",
 "fixed_address": "192.168.1.3"
 }
}
```

## Example Response

None

## Returned Values

See [Returned Values for General Requests](#).

## 10.9.2 Unbinding a Floating IP Address (Discarded)

### Function

This API is used to unbind a floating IP address from an ECS.

This API has been discarded. Since microversion 2.44, the system will return error 404 when you call this API. Use the VPC API [Updating a Floating IP Address](#).

### URI

```
POST /v2.1/{project_id}/servers/{server_id}/action
```

[Table 10-111](#) describes the parameters in the URI.

**Table 10-111** Parameter description

| Parameter  | Mandatory | Description                                                                                                       |
|------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| server_id  | Yes       | Specifies the ECS ID.                                                                                             |

## Request

[Table 10-112](#) describes the request parameters.

**Table 10-112** Request parameter

| Parameter        | Mandatory | Type   | Description                                |
|------------------|-----------|--------|--------------------------------------------|
| removeFloatingIp | Yes       | Object | Unbinds a floating IP address from an ECS. |

**Table 10-113** removeFloatingIp parameter information

| Parameter | Mandatory | Type   | Description                        |
|-----------|-----------|--------|------------------------------------|
| address   | Yes       | String | Specifies the floating IP address. |

## Response

None

## Example Request

```
POST https://{endpoint}/v2.1/9c53a566cb3443ab910cf0daebca90c4/servers/47e9be4e-a7b9-471f-92d9-ffc83814e07a/action
{
 "removeFloatingIp": {
 "address": "10.144.2.1"
 }
}
```

## Example Response

None

## Returned Values

See [Returned Values for General Requests](#).

## 10.9.3 Assigning a Floating IP Address (Discarded)

### Function

This API is used to assign a floating IP address.

This API has been discarded. Use the API described in [Assigning a Floating IP Address](#).

### Constraints

You need to obtain a network resource pool that provides floating IP addresses. To do so, run **GET /v2.0/networks?router:external=True** or **neutron net-external-list**.

### URI

POST /v2.1/{project\_id}/os-floating-ips

[Table 10-114](#) describes the parameters in the URI.

**Table 10-114** Parameter description

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

### Request

[Table 10-115](#) describes the request parameters.

**Table 10-115** Request parameters

| Parameter | Type   | Mandatory | Description                                                                                                                         |
|-----------|--------|-----------|-------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id | String | Yes       | Specifies the tenant ID specified in the URI.<br>The value is in UUID format.                                                       |
| pool      | String | No        | Specifies the network resource pool that provides floating IP addresses. If it is not specified, the default resource pool is used. |

### Response

[Table 10-116](#) describes the response parameters.

**Table 10-116** Response parameters

| Parameter   | Mandatory | Type   | Description                                                                        |
|-------------|-----------|--------|------------------------------------------------------------------------------------|
| floating_ip | Yes       | Object | Specifies the floating IP address. For details, see <a href="#">Table 10-117</a> . |

**Table 10-117** floating\_ip objects

| Parameter   | Mandatory | Type   | Description                                                                        |
|-------------|-----------|--------|------------------------------------------------------------------------------------|
| fixed_ip    | Yes       | String | Specifies a private IP address.                                                    |
| id          | Yes       | String | Specifies the floating IP address ID in UUID format.                               |
| instance_id | Yes       | String | Specifies the ID of a bound ECS in UUID format.                                    |
| ip          | Yes       | String | Specifies the floating IP address.                                                 |
| pool        | Yes       | String | Specifies the name of a network resource pool that provides floating IP addresses. |

## Example Request

```
POST https://{endpoint}/v2.1/e73621affb8f44e1bc01898747ca09d4/os-floating-ips
{
 "pool": "external"
}
```

## Example Response

```
{
 "floating_ip": {
 "id": "7aa2aa63-3097-4cfe-a2e4-596c301d3b1b",
 "pool": "external",
 "ip": "10.154.53.184",
 "fixed_ip": null,
 "instance_id": null
 }
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.9.4 Querying Floating IP Addresses (Discarded)

### Function

This API is used to query floating IP addresses.

This API has been discarded. Use the API described in [Querying Floating IP Addresses](#).

## URI

GET /v2.1/{project\_id}/os-floating-ips

[Table 10-118](#) describes the parameters in the URI.

**Table 10-118** Parameter description

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

## Request

None

## Response

[Table 10-119](#) describes the response parameters.

**Table 10-119** Response parameters

| Parameter    | Mandatory | Type             | Description                          |
|--------------|-----------|------------------|--------------------------------------|
| floating_ips | Yes       | Array of objects | Specifies the floating IP addresses. |

**Table 10-120** floating\_ip objects

| Parameter   | Mandatory | Type   | Description                        |
|-------------|-----------|--------|------------------------------------|
| floating_ip | Yes       | Object | Specifies the floating IP address. |

**Table 10-121** floating\_ip attributes

| Parameter | Mandatory | Type   | Description                     |
|-----------|-----------|--------|---------------------------------|
| fixed_ip  | Yes       | String | Specifies a private IP address. |

| Parameter   | Mandatory | Type   | Description                                                                        |
|-------------|-----------|--------|------------------------------------------------------------------------------------|
| id          | Yes       | String | Specifies the floating IP address ID in UUID format.                               |
| instance_id | Yes       | String | Specifies the ID of a bound ECS in UUID format.                                    |
| ip          | Yes       | String | Specifies the floating IP address.                                                 |
| pool        | Yes       | String | Specifies the name of a network resource pool that provides floating IP addresses. |

## Example Request

```
GET https://{endpoint}/v2.1/e73621affb8f44e1bc01898747ca09d4/os-floating-ips
```

## Example Response

```
{
 "floating_ips": [
 {
 "id": "05f71f43-f3c9-47ef-ac8d-9f02aef66418",
 "pool": "external",
 "ip": "10.154.51.235",
 "fixed_ip": "192.168.1.2",
 "instance_id": "8b380f68-5057-4aa2-a33a-170b37218fa8"
 },
 {
 "id": "a25236cf-dd76-4adc-916a-f0b4a24048d3",
 "pool": "external",
 "ip": "10.154.51.237",
 "fixed_ip": null,
 "instance_id": null
 }
]
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.9.5 Querying Details About a Floating IP Address (Discarded)

### Function

This API is used to query the details about a floating IP address based on the ID of the IP address.

This API has been discarded. Use the API described in [Querying a Floating IP Address](#).

## URI

GET /v2.1/{project\_id}/os-floating-ips/{floating\_ip\_id}

[Table 10-122](#) describes the parameters in the URI.

**Table 10-122** Parameter description

| Parameter      | Mandatory | Description                                                                                                       |
|----------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id     | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| floating_ip_id | Yes       | Specifies the ID of the floating IP address.                                                                      |

## Request

None

## Response

[Table 10-123](#) describes the response parameters.

**Table 10-123** Response parameters

| Parameter   | Mandatory | Type   | Description                                                                        |
|-------------|-----------|--------|------------------------------------------------------------------------------------|
| floating_ip | Yes       | Object | Specifies the floating IP address. For details, see <a href="#">Table 10-124</a> . |

**Table 10-124** floating\_ip objects

| Parameter   | Mandatory | Type   | Description                                          |
|-------------|-----------|--------|------------------------------------------------------|
| fixed_ip    | Yes       | String | Specifies a private IP address.                      |
| id          | Yes       | String | Specifies the floating IP address ID in UUID format. |
| instance_id | Yes       | String | Specifies the ID of a bound ECS in UUID format.      |
| ip          | Yes       | String | Specifies the floating IP address.                   |

| Parameter | Mandatory | Type   | Description                                                                        |
|-----------|-----------|--------|------------------------------------------------------------------------------------|
| pool      | Yes       | String | Specifies the name of a network resource pool that provides floating IP addresses. |

## Example Request

```
GET https://{endpoint}/v2.1/e73621affb8f44e1bc01898747ca09d4/os-floating-ips/05f71f43-f3c9-47ef-ac8d-9f02aef66418
```

## Example Response

```
{
 "floating_ip": {
 "id": "05f71f43-f3c9-47ef-ac8d-9f02aef66418",
 "pool": "external",
 "ip": "10.154.51.235",
 "fixed_ip": "192.168.1.2",
 "instance_id": "8b380f68-5057-4aa2-a33a-170b37218fa8"
 }
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.9.6 Releasing a Floating IP Address (Discarded)

### Function

This API is used to release a floating IP address.

This API has been discarded. Use the API described in [Deleting a Floating IP Address](#).

### URI

```
DELETE /v2.1/{project_id}/os-floating-ips/{floating_ip_id}
```

[Table 10-125](#) describes the parameters in the URI.

**Table 10-125** Parameter description

| Parameter      | Mandatory | Description                                                                                                       |
|----------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id     | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| floating_ip_id | Yes       | Specifies the ID of the floating IP address.                                                                      |



## Request

None

## Response

None

## Example Request

```
DELETE https://{endpoint}/v2.1/e73621affb8f44e1bc01898747ca09d4/os-floating-ips/05f71f43-f3c9-47ef-ac8d-9f02aef66418
```

## Example Response

None

## Returned Values

See [Returned Values for General Requests](#).

# 10.9.7 Querying Floating IP Address Pools (Discarded)

## Function

This API is used to query floating IP address pools.

This API has been discarded. Use the API described in [Querying Networks](#).

## Constraints

The API parameter is as follows: router:external=True

```
GET /networks?router:external=True //Name in the result is returned.
```

## URI

```
GET /v2.1/{project_id}/os-floating-ip-pools
```

[Table 10-126](#) describes the parameters in the URI.

**Table 10-126** Parameter description

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

## Request

None

## Response

[Table 10-127](#) describes the response parameters.

**Table 10-127** Response parameters

| Parameter         | Mandatory | Type             | Description                                         |
|-------------------|-----------|------------------|-----------------------------------------------------|
| floating_ip_pools | Yes       | Array of objects | Specifies the floating IP address pool.             |
| name              | Yes       | String           | Specifies the name of the floating IP address pool. |

## Example Request

```
GET https://{endpoint}/v2.1/e73621affb8f44e1bc01898747ca09d4/os-floating-ip-pools
```

## Example Response

```
{
 "floating_ip_pools": [
 {
 "name": "pool1"
 },
 {
 "name": "pool2"
 }
]
}
```

## Returned Values

See [Returned Values for General Requests](#).

# 10.10 Snapshot Management (OpenStack Nova APIs)

## 10.10.1 Creating a Snapshot (Discarded)

### Function

This API is used to create a snapshot for a volume.

This API has been discarded. Use the API described in [Creating an EVS Snapshot \(OpenStack Cinder API v2\)](#).

### Constraints

A snapshot name cannot be prefixed with **autobk\_snapshot**.

### URI

```
POST /v2.1/{project_id}/os-snapshots
```

[Table 10-128](#) describes the parameters in the URI.

**Table 10-128** Parameter description

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

## Request

[Table 10-129](#) describes the request parameters.

**Table 10-129** Request parameters

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| display_description | No        | String  | Specifies the snapshot description.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| volume_id           | Yes       | String  | Specifies the volume ID.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| display_name        | No        | String  | Specifies the name of the EVS snapshot.<br>The value contains a maximum of 255 bytes.<br><b>NOTE</b><br>When creating a backup for an EVS disk through VBS, a snapshot will be created and named with prefix <b>autobk_snapshot_</b> . The EVS console has imposed operation restrictions on snapshots with prefix <b>autobk_snapshot_</b> . Therefore, you are advised to not use <b>autobk_snapshot_</b> as the name prefix for the snapshots you created. Otherwise, the snapshots cannot be used normally. |
| force               | No        | Boolean | Specifies whether a snapshot is to be forcibly created.<br>If the value is <b>true</b> , a snapshot for the volume in use can be created.                                                                                                                                                                                                                                                                                                                                                                      |

## Response

[Table 10-130](#) describes the response parameters.

**Table 10-130** Response parameters

| Parameter          | Mandatory | Type    | Description                                              |
|--------------------|-----------|---------|----------------------------------------------------------|
| id                 | Yes       | String  | Specifies the disk snapshot ID in UUID format.           |
| status             | Yes       | String  | Specifies the volume snapshot status.                    |
| displayName        | No        | String  | Specifies the volume snapshot name.                      |
| displayDescription | No        | String  | Specifies the volume snapshot description.               |
| createdAt          | Yes       | String  | Specifies the time when the volume snapshot was created. |
| volumeId           | Yes       | String  | Specifies the disk ID in UUID format for the snapshot.   |
| size               | Yes       | Integer | Specifies the volume snapshot size.                      |

## Example Request

```
POST https://{endpoint}/v2.1/d6c277ba8820452e83df36f33c9fa561/os-snapshots
{
 "snapshot": {
 "display_name": "test",
 "display_description": null,
 "volume_id": "ba5730ea-8621-4ae8-b702-ff0ffc12c209"
 }
}
```

## Example Response

```
{
 "snapshot": {
 "createdAt": "2016-05-20T16:54:14.981520",
 "displayDescription": null,
 "id": "b836dc3d-4e10-4ea4-a34c-8f6b0460a583",
 "displayName": "test",
 "size": 1,
 "status": "creating",
 "volumeId": "ba5730ea-8621-4ae8-b702-ff0ffc12c209"
 }
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.10.2 Querying Snapshots (Discarded)

### Function

This API is used to query information about a volume snapshot.

This API has been discarded. Use the API described in [Querying Details About an EVS Snapshot \(OpenStack Cinder API v2\)](#).

### URI

GET /v2.1/{project\_id}/os-snapshots/{snapshot\_id}

[Table 10-131](#) describes the parameters in the URI.

**Table 10-131** Parameter description

| Parameter   | Mandatory | Description                                                                                                       |
|-------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id  | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| snapshot_id | Yes       | Specifies the volume snapshot ID.                                                                                 |

### Response

#### Response parameters

[Table 10-132](#) describes the response parameters.

**Table 10-132** Response parameters

| Parameter          | Type   | Description                                              |
|--------------------|--------|----------------------------------------------------------|
| id                 | String | Specifies the disk snapshot ID in UUID format.           |
| status             | String | Specifies the volume snapshot status.                    |
| displayName        | String | Specifies the volume snapshot name.                      |
| displayDescription | String | Specifies the volume snapshot description.               |
| createdAt          | String | Specifies the time when the volume snapshot was created. |
| volumeId           | String | Specifies the disk ID in UUID format for the snapshot.   |

| Parameter | Type    | Description                         |
|-----------|---------|-------------------------------------|
| size      | Integer | Specifies the volume snapshot size. |

## Example Request

```
GET https://{endpoint}/v2.1/d6c277ba8820452e83df36f33c9fa561/os-snapshots/b836dc3d-4e10-4ea4-a34c-8f6b0460a583
```

## Example Response

```
{
 "snapshot": {
 "createdAt": "2016-05-20T16:54:14.981520",
 "displayDescription": null,
 "id": "b836dc3d-4e10-4ea4-a34c-8f6b0460a583",
 "displayName": "test",
 "size": 1,
 "status": "creating",
 "volumeId": "ba5730ea-8621-4ae8-b702-ff0ffc12c209"
 }
}
```

## Returned Values

See [Returned Values for General Requests](#).

## 10.10.3 Deleting a Snapshot (Discarded)

### Function

This API is used to delete a volume snapshot.

This API has been discarded. Use the API described in [Deleting an EVS Snapshot \(OpenStack Cinder API v2\)](#).

### URI

DELETE /v2.1/{project\_id}/os-snapshots/{snapshot\_id}

[Table 10-133](#) describes the parameters in the URI.

**Table 10-133** Parameter description

| Parameter   | Mandatory | Description                                                                                                       |
|-------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| project_id  | Yes       | Specifies the project ID.<br>For details about how to obtain the ID, see <a href="#">Obtaining a Project ID</a> . |
| snapshot_id | Yes       | Specifies the volume snapshot ID.                                                                                 |

## Request

None

## Response

None

## Example Request

```
DELETE https://{endpoint}/v2.1/d6c277ba8820452e83df36f33c9fa561/os-snapshots/
74bfbbdd-7af5-4ed5-81b2-0aed668441d6
```

## Example Response

None

## Returned Values

See [Returned Values for General Requests](#).

# A Appendix

---

## A.1 HTTP Status Codes

| Normal Status Code | Description |
|--------------------|-------------|
| 200                | OK          |
| 201                | Created     |
| 202                | Accepted    |
| 204                | No Content  |

| Error Status Code | Description              |
|-------------------|--------------------------|
| 400               | Bad Request              |
| 401               | Unauthorized             |
| 403               | Forbidden                |
| 404               | Not Found                |
| 405               | Method Not Allowed       |
| 409               | Conflict                 |
| 413               | Request Entity Too Large |
| 415               | Unsupported Media Type   |
| 429               | Too Many Requests        |
| 500               | Internal Server Error    |
| 501               | Not Implemented          |
| 503               | Service Unavailable      |



## A.2 Error Codes

### Context

- An error code returned by an API does not correspond to one error message. The following table lists only common error messages.
- Most ECS APIs are asynchronous. Some error codes are displayed in the returned messages for task viewing requests. HTTP status codes may not be accurate.
- The ECS service is strongly dependent on other services, such as network and storage. If the reported error messages contain information about ECS-depended services, contact technical support for troubleshooting.
- If the system displays an error code when you perform operations on the management console, see "How Do I Handle Error Messages Displayed on the Management Console?" in *Elastic Cloud Server User Guide* for troubleshooting.

### Error Codes

If an error code starting with **APIGW** is returned after you call an API, rectify the fault by referring to the instructions provided in [API Gateway Error Codes](#).

| HTTP Status Code | Error Code | Error Message                                                             | Description                                         | Solution                                                                                        |
|------------------|------------|---------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------|
| 400              | Ecs.0000   | Request error. Try again later or contact customer service.               | Request error.                                      | Check the request body according to the returned error message.                                 |
| 400              | Ecs.0001   | Insufficient ECS quota. Contact customer service to increase quota.       | The number of ECSs has reached the maximum allowed. | Apply for a higher quota of the corresponding resource according to the returned error message. |
| 400              | Ecs.0002   | A system exception occurred. Try again later or contact customer service. | Failed to submit the task.                          | Contact technical support to locate the fault.                                                  |

| HTTP Status Code | Error Code | Error Message                                                                                        | Description                                                 | Solution                                                                                                             |
|------------------|------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| 403              | Ecs.0003   | You do not have permission to perform this operation. Contact customer service to obtain permission. | You do not have permission or your balance is insufficient. | Check whether the account balance is insufficient and the account is frozen according to the returned error message. |
| 400              | Ecs.0004   | A system exception occurred. Try again later or contact customer service.                            | Authentication failed.                                      | For details, see the returned error message or contact technical support.                                            |
| 400              | Ecs.0005   | Invalid parameter values. Contact customer service.                                                  | Invalid parameters.                                         | Check whether the request body is of the correct JSON structure according to the API reference.                      |
| 400              | Ecs.0006   | Invalid parameter values. Contact customer service.                                                  | No product ID in the Marketplace image.                     | Check image parameter.                                                                                               |
| 400              | Ecs.0007   | A system exception occurred. Try again later or contact customer service.                            | Invalid image attributes.                                   | Adjust the specifications or image type.                                                                             |
| 400              | Ecs.0008   | A system exception occurred. Try again later or contact customer service.                            | Invalid flavor attributes.                                  | Contact technical support to check whether the flavor registration is valid.                                         |
| 400              | Ecs.0009   | Another flavor must be used for resizing.                                                            | The flavor is not changed.                                  | Select a flavor different from the current flavor.                                                                   |
| 400              | Ecs.0010   | The private IP address is already being used. Select another IP address.                             | The private IP address is already in use.                   | Change the port.                                                                                                     |
| 400              | Ecs.0011   | Ensure the password meets the password complexity requirements.                                      | Failed to meet password complexity requirements.            | Check the password length and change the password.                                                                   |

| HTTP Status Code | Error Code | Error Message                                                                                            | Description                                                                                                                                                                                                          | Solution                                                            |
|------------------|------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 400              | Ecs.0012   | The subnet does not contain enough IP addresses. Release some IP addresses or select a different subnet. | The number of IP addresses in the subnet is insufficient.                                                                                                                                                            | Check whether the floating IP addresses of the subnet are used up.  |
| 400              | Ecs.0013   | The current EIP quota limit has been reached. Apply to increase the quota.                               | Insufficient EIP quota.                                                                                                                                                                                              | Apply for a higher EIP quota because the EIP quota is insufficient. |
| 400              | Ecs.0014   | Incorrect VPC, subnet, or security group parameter values.                                               | Invalid VPC parameters.                                                                                                                                                                                              | Check whether the subnets belong to the same VPC.                   |
| 400              | Ecs.0015   | Invalid disk type for this type of ECS. Select a valid disk type and try again.                          | The disk of this type is not applicable to the ECS.                                                                                                                                                                  | Check whether the disk type is supported by the flavor.             |
| 400              | Ecs.0016   | You do not have permission to access this AZ. Request OBT permission and try again.                      | <ol style="list-style-type: none"><li>1. You do not have the OBT permission to create ECSs of the selected flavor.</li><li>2. You do not have the OBT permission to modify the ECS to the selected flavor.</li></ol> | Apply for the OBT permission or change to another flavor.           |

| HTTP Status Code | Error Code | Error Message                                                                                                                 | Description                                                                        | Solution                                                                                                                                                             |
|------------------|------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 400              | Ecs.0017   | The status of the selected disk does not meet the attachment requirements on the ECS. Select an available disk for attaching. | The ECS is not the target one that the system disk or data disk is to be attached. | Check whether the <code>__system_server_id</code> value in disk metadata is the same as the UUID of the ECS to which the system disk or data disk is to be attached. |
| 400              | Ecs.0018   | The selected flavor has been sold out. Try another flavor.                                                                    | Flavor sold out.                                                                   | Change another flavor.                                                                                                                                               |
| 400              | Ecs.0019   | The selected flavor has been canceled. Try another flavor.                                                                    | Flavor abandoned.                                                                  | Change another flavor.                                                                                                                                               |
| 400              | Ecs.0021   | Insufficient EVS disk quota. Contact customer service to increase quota.                                                      | Insufficient EVS disk quota.                                                       | Apply for a higher EVS disk quota.                                                                                                                                   |
| 400              | Ecs.0022   | Insufficient ECS group quota. Contact customer service to increase quota.                                                     | The number of ECSs in the ECS group exceeded the upper limit.                      | Apply for a higher ECS quota for an ECS group.                                                                                                                       |
| 400              | Ecs.0023   | <code>project_id</code> in token mismatches with <code>project_id</code> in url.                                              | Invalid token, or the project ID in the token is different from that in the URL.   | Apply for a valid token or check the project ID in the URL.                                                                                                          |
| 400              | Ecs.0025   | EVS is not authorized to obtain KMS keys for encrypting EVS disks.                                                            | EVS is not authorized to obtain KMS keys for encrypting EVS disks.                 | Authorize EVS to obtain KMS keys for encrypting EVS disks.                                                                                                           |
| 400              | Ecs.0027   | The ECSs of this flavor cannot be created.                                                                                    | Private flavor, which cannot be used.                                              | Change another flavor.                                                                                                                                               |
| 400              | Ecs.0028   | The ECSs of this flavor cannot be created.                                                                                    | The blacklisted user configured in the flavor is not allowed to use the flavor.    | Change another flavor.                                                                                                                                               |

| HTTP Status Code | Error Code | Error Message                                                             | Description                                                          | Solution                                                                |
|------------------|------------|---------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------|
| 400              | Ecs.0029   | The flavor does not exist.                                                | The flavor does not exist or has been abandoned.                     | Change another flavor.                                                  |
| 400              | Ecs.0030   | The ECS has been frozen and does not support specifications modification. | The ECS has been frozen.                                             | Check whether the account has been frozen or contact technical support. |
| 400              | Ecs.0031   | The image does not exist.                                                 | The image does not exist.                                            | Change another image.                                                   |
| 400              | Ecs.0032   | The image is not in Active state.                                         | The image is not in <b>Active</b> state.                             | Change another image.                                                   |
| 400              | Ecs.0034   | The full-ECS backup does not exist or has been deleted.                   | The full-ECS backup does not exist or has been deleted.              | Change another image.                                                   |
| 400              | Ecs.0036   | The flavor does not support automatic recovery.                           | The flavor does not support automatic recovery.                      | Change another flavor.                                                  |
| 400              | Ecs.0037   | The flavor does not support SCSI disks.                                   | The flavor does not support SCSI disks.                              | Change another flavor or type.                                          |
| 400              | Ecs.0038   | The subnet does not exist.                                                | The subnet does not exist.                                           | Adjust network parameter settings.                                      |
| 400              | Ecs.0039   | The specified IP address does not belong to the subnet.                   | The specified IP address does not belong to the subnet.              | Change the specified private IP address.                                |
| 400              | Ecs.0041   | Invalid description field.                                                | Invalid description field.                                           | Modify the service description field.                                   |
| 400              | Ecs.0042   | The number of attached data disks exceeds the maximum allowed limit.      | The number of attached data disks exceeds the maximum allowed limit. | Adjust the number of attached data disks.                               |

| HTTP Status Code | Error Code | Error Message                                                                                                                                          | Description                                                               | Solution                              |
|------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------|
| 400              | Ecs.0043   | The disk type does not exist.                                                                                                                          | The disk type does not exist.                                             | Change the disk type.                 |
| 400              | Ecs.0044   | The disk of this type has been sold out.                                                                                                               | The disk of this type has been sold out.                                  | Change the disk type.                 |
| 400              | Ecs.0045   | The bandwidth exceeds the maximum allowed limit.                                                                                                       | The bandwidth exceeds the maximum size allowed.                           | Adjust the bandwidth.                 |
| 400              | Ecs.0046   | When creating an ECS using an image, ensure that the type of the attached data disk is the same as that required by the image.                         | The disk type of the ECS is different from that of the snapshot image.    | Change the disk type.                 |
| 400              | Ecs.0048   | Ensure that the image status is Normal and that the status of the CSBS backup associated with the image is Available or Creating, and try again later. | The full-ECS image is unavailable.                                        | Check the full-ECS image.             |
| 400              | Ecs.0049   | The selected enterprise project has been disabled. Enable the project or select another project.                                                       | Invalid enterprise project status.                                        | Change the enterprise project status. |
| 400              | Ecs.0050   | The number of NICs attached to the ECS exceeds the quota.                                                                                              | The number of NICs attached to the ECS exceeds the maximum value allowed. | Adjust the number of NICs.            |
| 400              | Ecs.0051   | Only SCSI disks can be attached to the ECSs of this flavor.                                                                                            | The attached disk is not of SCSI type.                                    | Adjust the disk type.                 |

| HTTP Status Code | Error Code | Error Message                                                                               | Description                                                           | Solution                                                                         |
|------------------|------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 400              | Ecs.0052   | Only SCSI system disks can be attached to the ECSs of this flavor.                          | The attached system disk is not of SCSI type.                         | Change the system disk type.                                                     |
| 400              | Ecs.0053   | Only SCSI data disks can be attached to the ECSs of this flavor.                            | The attached data disk is not of SCSI type.                           | Change the data disk type.                                                       |
| 400              | Ecs.0057   | The disk has already been attached to the ECS and you cannot repeatedly attach it.          | The disk has been attached to the ECS.                                | Attach a new disk to the ECS.                                                    |
| 400              | Ecs.0058   | You do not have permission to use a third-party image to create ECSs.                       | The <b>providedId</b> of the image does not match the account ID.     | Check the account permission and image.                                          |
| 400              | Ecs.0062   | The flavor does not support the driver mode.                                                | The flavor does not allow settings of the NIC driver type.            | Change another flavor.                                                           |
| 400              | Ecs.0064   | The VPC ID in the request is inconsistent with that in the main subnet ID.                  | Inconsistent VPC ID in the request body from that in the primary NIC. | Adjust the NIC parameter settings.                                               |
| 403              | Ecs.0066   | This operation cannot be performed because real-name authentication has not been completed. | Restricted due to lack of real-name authentication.                   | Check whether the account is restricted due to lack of real-name authentication. |
| 403              | Ecs.0067   | Insufficient account balance.                                                               | Restricted due to insufficient balance.                               | Check whether the account is restricted due to insufficient balance.             |

| HTTP Status Code | Error Code | Error Message                                                                                | Description                                                                     | Solution                                                                     |
|------------------|------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 403              | Ecs.0068   | This operation cannot be performed by partners.                                              | Restricted due to a non-partner.                                                | Check whether the account is restricted due to a non-partner.                |
| 403              | Ecs.0069   | You have not associated a payment method with your account.                                  | Restricted due to incomplete payment information.                               | Check whether the payment information of the account is complete.            |
| 403              | Ecs.0070   | Insufficient budget. Contact the enterprise administrator and request for a budget increase. | Restricted because account budget of the enterprise department is insufficient. | Check whether the budget of the enterprise department account is sufficient. |
| 403              | Ecs.0071   | This operation cannot be performed because your account has been suspended.                  | Restricted due to a malicious account.                                          | Check whether the account is malicious.                                      |
| 400              | Ecs.0073   | The system disk is being backed up. Wait until the execution is complete and try again.      | The system disk is being backed up.                                             | You are not allowed to delete a system disk that is being backed up.         |
| 400              | Ecs.0076   | The spot block specification does not support the selected predefined duration.              | The validity period of the spot price ECS has exceeded the upper limit.         | Adjust the validity period of the spot price ECS.                            |
| 400              | Ecs.0077   | The number of durations exceeds the maximum limit of the spot block ECS.                     | The number of spot price ECSs has exceeded the upper limit.                     | Adjust the number of spot price ECSs.                                        |
| 400              | Ecs.0081   | Scheduled deletion is not supported.                                                         | Scheduled ECS termination is not allowed.                                       | Check the request body according to the returned error message.              |



| HTTP Status Code | Error Code | Error Message                                                                                 | Description                                                                                             | Solution                                                                       |
|------------------|------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 400              | Ecs.0082   | Incorrect time format.                                                                        | Incorrect format of automatic ECS termination. The UTC time in format yyyy-MM-ddTHH:mm:ssZ is required. | Check the request body according to the returned error message.                |
| 403              | Ecs.0083   | The scheduled time has been reached.                                                          | The automatic termination time has been reached.                                                        | Check the request body according to the returned error message.                |
| 400              | Ecs.0084   | Scheduled deletion is not supported.                                                          | The value of <b>auto_terminate_time</b> of a yearly/monthly ECS must be left blank.                     | Check the request body according to the returned error message.                |
| 400              | Ecs.0085   | The server does not have the interface.                                                       | The ECS does not have the NIC.                                                                          | Replace a NIC.                                                                 |
| 400              | Ecs.0086   | The interface is not the primary interface.                                                   | The NIC is not the primary NIC.                                                                         | Replace a NIC.                                                                 |
| 400              | Ecs.0100   | The ECS status does not meet requirements. Make the ECS in the required status and try again. | The ECS status does not meet requirements.                                                              | The ECS in the current state does not support this operation. Try again later. |
| 400              | Ecs.0101   | The system disk is currently unresponsive. Try again later or contact customer service.       | Abnormal system disk status.                                                                            | For details, contact technical support.                                        |
| 400              | Ecs.0102   | The data disk is currently unresponsive. Try again later or contact customer service.         | The system disk status does not allow the disk to be detached.                                          | Check the system disk status.                                                  |

| HTTP Status Code | Error Code | Error Message                                                                                                                                              | Description                                                 | Solution                                                                                                                                      |
|------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 400              | Ecs. 0103  | The disk can be attached to a server only if it exists and the state must be in the available. Make sure the disk state is available and try again.        | The disk is unavailable.                                    | Check the disk status or contact technical support to change the disk status.                                                                 |
| 400              | Ecs. 0104  | The number of EVS disks that can be attached to the ECS exceeds the maximum number allowed. Decrease the number of EVS disks to be attached and try again. | Insufficient ECS disk quota for attaching more disks.       | Adjust the number of attached disks.                                                                                                          |
| 400              | Ecs. 0105  | No system disk found. Attach the system disk to the ECS and try again.                                                                                     | Failed to query the ECS system disk.                        | Check whether the ECS has a system disk attached.                                                                                             |
| 400              | Ecs. 0106  | A network exception occurred. Try again later or contact customer service.                                                                                 | Abnormal network status.                                    | Contact technical support for fault locating.                                                                                                 |
| 403              | Ecs. 0110  | Contact the main account to obtain permission.                                                                                                             | Operations are prohibited on the client due to permissions. | You do not have the permission to perform such an operation. Check token permissions. For details, see the error message returned by the API. |
| 400              | Ecs. 0111  | The EVS disk has been detached from the ECS. Refresh the disk list and check the disk.                                                                     | The disk is not in the attachment list.                     | Check whether the selected disk has been attached to the ECS, or replace the disk.                                                            |

| HTTP Status Code | Error Code | Error Message                                                                                         | Description                                                                              | Solution                                                                       |
|------------------|------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 400              | Ecs.0112   | The ECS is not billed on a pay-per-use basis.                                                         | The ECS is not of pay-per-use type, and it cannot be migrated.                           | For details, contact technical support.                                        |
| 404              | Ecs.0114   | The ECS does not exist.                                                                               | The ECS cannot be detected.                                                              | Check whether the ECS has been created.                                        |
| 400              | Ecs.0118   | The number of ECSs exceeds the maximum allowed limit.                                                 | The number of tasks in a batch is greater than the upper limit.                          | Check the number of ECSs in the batch.                                         |
| 400              | Ecs.0119   | An encrypted disk with an unavailable key cannot be attached to an ECS.                               | An ECS cannot be attached with an encrypted disk with a disabled key.                    | Change the key status.                                                         |
| 400              | Ecs.0120   | The yearly/monthly ECS cannot be rebuilt.                                                             | Yearly/Monthly ECSs cannot be rebuilt.                                                   | Yearly/Monthly ECSs cannot be rebuilt. For details, contact technical support. |
| 400              | Ecs.0121   | The disk cannot be attached to the ECS because the disk and the ECS are in different failure domains. | Failed to attach the disk because the ECS and the disk are in different failure domains. | Select a disk that is in the same failure domain as that of the target ECS.    |
| 400              | Ecs.0201   | Failed to create the NIC. Try again later or contact customer service.                                | Failed to create the NIC.                                                                | For details, see the returned error message or contact technical support.      |
| 400              | Ecs.0202   | Failed to create the system disk. Try again later or contact customer service.                        | Failed to create the system disk.                                                        | For details, see the returned error message or contact technical support.      |
| 400              | Ecs.0203   | Failed to create the data disk. Try again later or contact customer service.                          | Failed to create the data disk.                                                          | For details, see the returned error message or contact technical support.      |

| HTTP Status Code | Error Code | Error Message                                                                         | Description                                            | Solution                                                                  |
|------------------|------------|---------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------|
| 400              | Ecs. 0204  | Failed to create the ECS. Try again later or contact customer service.                | Failed to create the ECS.                              | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0205  | Failed to attach the data disk. Try again later or contact customer service.          | Failed to attach the data disk.                        | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0207  | Failed to modify the ECS specifications. Try again later or contact customer service. | Failed to modify ECS specifications.                   | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0208  | A system exception occurred. Try again later or contact customer service.             | Failed to update the image metadata.                   | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0209  | Failed to modify the ECS specifications. Try again or contact customer service.       | Failed to confirm the ECS specifications modification. | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0210  | A system exception occurred. Try again later or contact customer service.             | Failed to assign the floating IP address.              | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0211  | Failed to create the NIC. Try again later or contact customer service.                | Failed to create the NIC.                              | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0212  | Failed to assign the private IP address. Try again later or contact customer service. | Failed to allocate the private IP address.             | For details, contact technical support.                                   |
| 400              | Ecs. 0213  | Failed to update the port attributes. Try again later or contact customer service.    | Failed to update the port attributes.                  | For details, see the returned error message or contact technical support. |

| HTTP Status Code | Error Code | Error Message                                                                             | Description                                  | Solution                                                                     |
|------------------|------------|-------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------|
| 400              | Ecs. 0214  | Failed to create the network. Try again later or contact customer service.                | Failed to create the network.                | For details, see the returned error message or contact technical support.    |
| 400              | Ecs. 0216  | Failed to create the subnet. Try again later or contact customer service.                 | Failed to create the subnet.                 | For details, see the returned error message or contact technical support.    |
| 400              | Ecs. 0217  | Failed to attach the NIC. Try again later or contact customer service.                    | Failed to attach the NIC.                    | For details, see the returned error message or contact technical support.    |
| 400              | Ecs. 0219  | Failed to create the ECS. Try again later or contact customer service.                    | Failed to create the ECS.                    | For details, see the returned error message or contact technical support.    |
| 400              | Ecs. 0221  | Cold migration from a dedicated host to the same dedicated host is not supported.         | Failed to migrate the ECS.                   | For details, see the returned error message or contact technical support.    |
| 400              | Ecs. 0226  | Failed to start.                                                                          | Failed to start the ECS.                     | For details, see the returned error message or contact technical support.    |
| 400              | Ecs. 0227  | Failed to reboot.                                                                         | Failed to restart the ECS.                   | Modify according to the returned error message or contact technical support. |
| 400              | Ecs. 0301  | Failed to query the ECS. Try again later or contact customer service.                     | Failed to query the ECS.                     | For details, see the returned error message or contact technical support.    |
| 400              | Ecs. 0302  | Failed to query the ECS quota of the tenant. Try again later or contact customer service. | Failed to query the ECS quota of the tenant. | For details, see the returned error message or contact technical support.    |

| HTTP Status Code | Error Code | Error Message                                                                             | Description                                  | Solution                                                                                                     |
|------------------|------------|-------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 400              | Ecs.0303   | Failed to query the ECS specifications. Try again later or contact customer service.      | Failed to query the flavor.                  | For details, see the returned error message or contact technical support.                                    |
| 400              | Ecs.0304   | Failed to query the image. Try again later or contact customer service.                   | Failed to query the image.                   | Contact technical support to check whether the image has been correctly registered or to check other causes. |
| 400              | Ecs.0306   | Failed to query the backup. Try again later or contact customer service.                  | Failed to query the backup.                  | For details, see the returned error message or contact technical support.                                    |
| 400              | Ecs.0307   | Failed to query the port. Try again later or contact customer service.                    | Failed to query the port.                    | For details, see the returned error message or contact technical support.                                    |
| 400              | Ecs.0308   | Failed to query the ECS quota of the tenant. Try again later or contact customer service. | Failed to query the ECS quota of the tenant. | For details, see the returned error message or contact technical support.                                    |
| 400              | Ecs.0309   | Failed to create the NIC. Try again later or contact customer service.                    | Failed to query the NIC QoS.                 | For details, see the returned error message or contact technical support.                                    |
| 400              | Ecs.0310   | A system exception occurred. Try again later or contact customer service.                 | Failed to view the network information.      | For details, see the returned error message or contact technical support.                                    |
| 400              | Ecs.0311   | Failed to obtain the disk type. Try again later or contact customer service.              | Failed to query the disk type.               | For details, see the returned error message or contact technical support.                                    |
| 400              | Ecs.0313   | ECS group query failed.                                                                   | Failed to query the ECS group.               | For details, see the returned error message or contact technical support.                                    |

| HTTP Status Code | Error Code | Error Message                                                                   | Description                                                | Solution                                                                  |
|------------------|------------|---------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------|
| 400              | Ecs. 0314  | The key pair does not exist. Refresh the key pair list and check key pair       | Failed to obtain the key pair.                             | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0315  | Failed to call the nova API to query the auto recovery status.                  | Failed to obtain the automatic recovery status.            | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0319  | Insufficient resources for this flavor. Try another flavor.                     | Insufficient flavor capacity.                              | Apply for expanding the flavor capacity.                                  |
| 400              | Ecs. 0320  | AZ query failed.                                                                | Failed to obtain AZs.                                      | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0321  | Console logs query failed.                                                      | Failed to query ECS console logs.                          | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0322  | Subnet query failed.                                                            | Failed to query details of the subnet.                     | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0323  | Failed to query the NIC attached to the ECS.                                    | Failed to query the NIC attachment to an ECS.              | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0401  | Failed to release the port. Try again later or contact customer service.        | Failed to undo the operation performed on the port.        | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0402  | Failed to release the system disk. Try again later or contact customer service. | Failed to undo the operation performed on the system disk. | For details, see the returned error message or contact technical support. |
| 400              | Ecs. 0403  | Failed to release the ECS. Try again later or contact customer service.         | Failed to undo the operation performed on the ECS.         | Contact technical support to locate the fault.                            |

| HTTP Status Code | Error Code | Error Message                                                                         | Description                                                  | Solution                                                                                                     |
|------------------|------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 400              | Ecs.0405   | Failed to release the data disk. Try again later or contact customer service.         | Failed to undo the operation performed on the data disk.     | For details, see the returned error message or contact technical support.                                    |
| 400              | Ecs.0501   | Failed to delete the ECS. Try again later or contact customer service.                | Failed to delete the ECS.                                    | Try again later.                                                                                             |
| 400              | Ecs.0502   | Failed to delete the private IP address. Try again later or contact customer service. | Failed to delete the private IP address.                     | For details, see the returned error message or contact technical support.                                    |
| 400              | Ecs.0503   | Failed to obtain the system disk. Try again later or contact customer service.        | Failed to query the system disk.                             | For details, see the returned error message or contact technical support.                                    |
| 400              | Ecs.0507   | Failed to delete the NIC. Try again later or contact customer service.                | Failed to delete the NIC.                                    | Check the NIC type.                                                                                          |
| 400              | Ecs.0510   | Yearly/Monthly ECSs do not support changing OSs.                                      | Yearly/Monthly ECSs do not support changing OSs.             | The ECSs created using a Marketplace image and billed on a yearly/monthly basis do not support changing OSs. |
| 400              | Ecs.0513   | server %s is the cycle order and not be deleted by ordinary user                      | Common users are not allowed to delete yearly/monthly ECSs.  | Unsubscribe from the ECS.                                                                                    |
| 501              | Ecs.0603   | The commands are being executed. Try again later.                                     | Other commands are being executed. Try again 1 minute later. | Try again 1 minute later.                                                                                    |
| 400              | Ecs.0605   | ECS locked.                                                                           | The ECS is locked.                                           | Check whether the ECS is locked. If so, unlock it.                                                           |



| HTTP Status Code | Error Code | Error Message                                                                       | Description                                                     | Solution                                                                                |
|------------------|------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 400              | Ecs. 0611  | Batch operation failed.                                                             | Requesting for a batch operation failed.                        | Rectify the fault based on the returned error information and submit the request again. |
| 400              | Ecs. 0612  | Failed to check whether plug-ins have been installed.                               | Failed to check whether plug-ins have been installed on an ECS. | Try again later or contact technical support.                                           |
| 400              | Ecs. 0613  | The ECS has no plug-ins installed.                                                  | No plug-ins have been installed on the ECS.                     | Install desired plug-ins.                                                               |
| 404              | Ecs. 0614  | The ECS does not exist.                                                             | The ECS cannot be detected.                                     | Check whether the ECS exists.                                                           |
| 500              | Ecs. 0615  | The thread list is empty.                                                           | An error has occurred in the request from an ECS.               | An internal system error occurred.<br>Contact technical support to locate the fault.    |
| 400              | Ecs. 0616  | Failed to update the ECS name.                                                      | Failed to modify the ECS.                                       | Try again later or contact technical support.                                           |
| 400              | Ecs. 0617  | Failed to modify attribute. Please try again later or contact customer service.     | Failed to modify the attributes of the disk attached to an ECS. | For details, see the returned error message or contact technical support.               |
| 400              | Ecs. 0618  | Failed to change the IP address of the ECS NIC.                                     | Failed to change the IP address of the ECS NIC.                 | For details, see the returned error message or contact technical support.               |
| 400              | Ecs. 0701  | Failed to obtain the order or product. Try again later or contact customer service. | Failed to query the order or product.                           | Contact technical support to locate the fault.                                          |

| HTTP Status Code | Error Code | Error Message                                                                              | Description                                                               | Solution                                                                                                           |
|------------------|------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| 400              | Ecs.0702   | Failed to get the demand price or spot price. Try again later or contact customer service. | Failed to query the price.                                                | An error has occurred when calling the API to query prices. Contact technical support.                             |
| 400              | Ecs.0703   | The single instance price limit cannot be less than the spot price.                        | The price provided by the user is less than the current price.            | The price provided by the user is less than the market price of the spot ECS. Increase the price for the spot ECS. |
| 400              | Ecs.0704   | Spot ECSs do not support specifications modification.                                      | Spot ECS specifications cannot be modified.                               | The specifications of a spot ECS cannot be modified.                                                               |
| 400              | Ecs.0705   | Automatic recovery cannot be enabled on spot ECSs.                                         | Automatic recovery cannot be enabled on a spot ECS.                       | Automatic recovery cannot be enabled on a spot ECS.                                                                |
| 400              | Ecs.0706   | RIs cannot be split or combined.                                                           | Failed to combine or split reserved instances.                            | Contact technical support to locate the fault.                                                                     |
| 400              | Ecs.0707   | The product has not been registered.                                                       | The product does not exist.                                               | Contact technical support to locate the fault.                                                                     |
| 400              | Ecs.0802   | The specifications of an ECS created using a Red Hat image cannot be modified.             | The ECS does not support specifications modification.                     | Do not modify the specifications of an ECS created using a specified image.                                        |
| 400              | Ecs.0803   | When modifying the specifications of an ECS created on a DeH, specify the DeH.             | Modifying specifications of an ECS deployed on a DeH requires the DeH ID. | Modify the request body for specifications modification.                                                           |

| HTTP Status Code | Error Code | Error Message                                                                                         | Description                                                                    | Solution                                                                  |
|------------------|------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 400              | Ecs.0804   | The ECS flavor cannot be switched to the target flavor. Change the target flavor.                     | The ECS does not support the target flavor.                                    | Change another flavor.                                                    |
| 400              | Ecs.0805   | A large-memory ECS cannot be switched to a general computing ECS.                                     | A large-memory ECS cannot be changed to a general computing ECS.               | A large-memory ECS cannot be changed to a general computing ECS.          |
| 400              | Ecs.0806   | H2 ECSs do not support specifications modification.                                                   | An H2 ECS does not support specifications modification.                        | An H2 ECS does not support specifications modification.                   |
| 400              | Ecs.0807   | The number of ECS NICs exceeds the maximum number allowed on the target ECS. Uninstall excess NICs.   | The number of ECS NICs exceeded the upper limit.                               | Uninstall extra NICs.                                                     |
| 400              | Ecs.0808   | The Xen ECS created using a UEFI image does not support specifications modification.                  | The specifications of a Xen ECS created using a UEFI image cannot be modified. | Do not modify the specifications of a Xen ECS created using a UEFI image. |
| 400              | Ecs.0809   | The number of VBD disks exceeds the maximum number allowed on the target ECS. Uninstall excess disks. | The number of VBD disks exceeded the upper limit.                              | Uninstall undesired disks.                                                |
| 400              | Ecs.0810   | The ECS flavor is the same as the target flavor.                                                      | The target specifications are the same as the current ECS specifications.      | Change another specifications.                                            |

| HTTP Status Code | Error Code | Error Message                                                       | Description                                            | Solution                           |
|------------------|------------|---------------------------------------------------------------------|--------------------------------------------------------|------------------------------------|
| 400              | Ecs.0811   | Install the required drivers on the ECS and then change Xen to KVM. | The flavor cannot be switched from Xen to KVM.         | Install a driver script.           |
| 400              | Ecs.0901   | Yearly/Monthly DeHs cannot be allocated.                            | Yearly/Monthly DeHs are not supported.                 | Change another flavor.             |
| 400              | Ecs.0902   | Spot ECSs do not support Marketplace images.                        | Spot ECSs do not support Marketplace images.           | Change another image.              |
| 400              | Ecs.0903   | Spot ECSs do not support automatic recovery.                        | Spot ECSs do not support automatic recovery.           | Change another flavor.             |
| 400              | Ecs.0904   | UEFI images cannot be used to create Xen ECSs.                      | UEFI images cannot be used to create Xen ECSs.         | Change another flavor.             |
| 400              | Ecs.0905   | The number of tags exceeds the maximum allowed limit.               | The number of tags exceeds the maximum number allowed. | Decrease the number of tags.       |
| 400              | Ecs.0906   | Failed to comply with tag character set specifications.             | Invalid tag attribute.                                 | Create a tag again.                |
| 400              | Ecs.0907   | Invalid tag character set.                                          | Invalid tag character set.                             | Create a tag again.                |
| 400              | Ecs.0908   | The tag key cannot be duplicate.                                    | Duplicate tag key.                                     | Create a tag again.                |
| 400              | Ecs.0909   | The flavor does not support the disk type.                          | The flavor does not support the disk type.             | Change the flavor or disk type.    |
| 400              | Ecs.0910   | Invalid NIC settings for creating a HANA ECS.                       | Invalid NIC parameters for creating a HANA ECS.        | Adjust the NIC parameter settings. |

| HTTP Status Code | Error Code | Error Message                                                             | Description                                                         | Solution                                                                      |
|------------------|------------|---------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 400              | Ecs. 0911  | Invalid dedicated storage type of the disk.                               | Invalid dedicated storage type of the disk.                         | Modify parameter settings for the dedicated storage type.                     |
| 400              | Ecs. 0912  | Invalid disk encryption key.                                              | Invalid disk encryption attribute.                                  | Modify parameter settings for the disk encryption attribute.                  |
| 400              | Ecs. 0913  | The number of ECSs to be created exceeds the maximum allowed limit        | The number of ECSs to be created exceeds the maximum allowed limit. | Decrease the number of ECSs to be created.                                    |
| 400              | Ecs. 0914  | The length of the ECS name exceeds the maximum allowed limit.             | The length of the ECS name exceeds the maximum allowed limit.       | Change the ECS name.                                                          |
| 400              | Ecs. 0915  | The length of the ECS name exceeds the maximum allowed limit.             | The ECS name contains invalid characters.                           | Change the ECS name.                                                          |
| 400              | Ecs. 0919  | The NIC has been attached to another instance.                            | The port does not allow attaching.                                  | Change the port.                                                              |
| 400              | Ecs. 1000  | A system exception occurred. Try again later or contact customer service. | Failed to call the Nova API.                                        | Internal calling error. Try again later or contact technical support.         |
| 400              | Ecs. 1001  | A system exception occurred. Try again later or contact customer service. | OpenStack access error.                                             | The ECS is abnormal due to an OpenStack exception. Contact technical support. |
| 400              | Ecs. 1002  | A system exception occurred. Try again later or contact customer service. | OpenStack access timed out.                                         | Internal system processing timed out. For details, contact technical support. |
| 400              | Ecs. 1100  | A system exception occurred. Try again later or contact customer service. | Failed to access IAM.                                               | For details, see the returned error message or contact technical support.     |

| HTTP Status Code | Error Code    | Error Message                                                                                                                                                                                    | Description                 | Solution                                                                                                                                                                 |
|------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 400              | Ecs. 1200     | A system exception occurred. Try again later or contact customer service.                                                                                                                        | Failed to access the VPC.   | For details, see the returned error message or contact technical support.                                                                                                |
| 400              | Ecs. 1201     | A system exception occurred. Try again later or contact customer service.                                                                                                                        | VPC access timed out.       | The task timed out. For details, contact technical support.                                                                                                              |
| 400              | Ecs. 1300     | A system exception occurred. Try again later or contact customer service.                                                                                                                        | EVS access timed out.       | For details, see the returned error message or contact technical support.                                                                                                |
| 400              | Ecs. 7000     | Check whether your account balance is sufficient for the order, whether there are orders pending payment, and whether the order is being processed. Try again later or contact customer service. | Failed to create an order.  | Check whether the account balance is sufficient for the order, whether there is an order to be paid, whether the order is being processed, or contact technical support. |
| 403              | Pdp. 0001     | Policy does not allow %s to be performed.                                                                                                                                                        | API authentication failed.  | Add permissions on IAM. For details, see API permissions.                                                                                                                |
| 202              | Comm on. 0024 | exceeds flow over limit                                                                                                                                                                          | Limited by traffic control. | The number of concurrent requests has exceeded the upper limit. Try again later.                                                                                         |
| 400              | Comm on. 0002 | The request body cannot be left blank.                                                                                                                                                           | Empty request body.         | Check the request body.                                                                                                                                                  |
| 400              | Comm on. 0011 | Failed to query system tasks.                                                                                                                                                                    | Invalid job ID.             | Check whether the source of the job ID is correct.                                                                                                                       |

| HTTP Status Code | Error Code    | Error Message                                                             | Description                                                                      | Solution                                           |
|------------------|---------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------|
| 400              | Comm on. 0018 | The project ID in the URL is different from that in the token.            | Invalid token, or the project ID in the token is different from that in the URL. | Check whether the tenant token is correct.         |
| 400              | Comm on. 0020 | A system exception occurred. Try again later or contact customer service. | Failed to retry the task.                                                        | Contact technical support.                         |
| 400              | Comm on. 0021 | Subjob fails.                                                             | An error has occurred in job query.                                              | Try again later or contact technical support.      |
| 400              | Comm on. 0022 | Mission fails.                                                            | An error has occurred in job submission.                                         | Contact technical support.                         |
| 400              | Comm on. 0999 | The system was broken, exit.                                              | Task terminated.                                                                 | Contact technical support.                         |
| 400              | Comm on. 0025 | Query job Error because %s.                                               | An error has occurred in task query.                                             | Try again later or contact technical support.      |
| 400              | Comm on. 0026 | Fail to get Region Info                                                   | An error occurred in AZ query.                                                   | Try again later or contact technical support.      |
| 401              | Comm on. 0013 | Invalid token.                                                            | Invalid token.                                                                   | Check whether the tenant token is correct.         |
| 500              | Comm on. 0001 | A system exception occurred. Try again later or contact customer service. | A system exception occurred.                                                     | Contact technical support.                         |
| 503              | Comm on. 1503 | Api flow control Error because %s.                                        | Limited by API traffic control.                                                  | Too many APIs are being executed. Try again later. |

## A.3 ECS Statuses

An ECS can be in one of the following statuses specified in ECS APIs:

- **status**: specifies an ECS status, which is generated by **OS-EXT-STS:vm\_state** and **OS-EXT-STS:task\_state**.
- **OS-EXT-STS:vm\_state**: indicates that the ECS is in a stable state after an operation is performed. This is an extended attribute.
- **OS-EXT-STS:task\_state**: indicates an intermediate status in which the ECS is processing an operation performed on it. This is an extended attribute.

**Table A-1** Statuses

| Status            | Description                                                                                             |
|-------------------|---------------------------------------------------------------------------------------------------------|
| BUILD             | The ECS has been created but is not running.                                                            |
| REBOOT            | The ECS is being restarted.                                                                             |
| HARD_REBOOT       | The ECS is being forcibly restarted.                                                                    |
| REBUILD           | The ECS is being rebuilt.                                                                               |
| MIGRATING         | The ECS is being live migrated.                                                                         |
| RESIZE            | The ECS has received a specifications modification request and has started to perform the modification. |
| ACTIVE            | The ECS is running properly.                                                                            |
| SHUTOFF           | The ECS has been properly stopped.                                                                      |
| REVERT_RESIZE     | The ECS is rolling back resizing.                                                                       |
| VERIFY_RESIZE     | The ECS is verifying the modified configuration.                                                        |
| ERROR             | An error has occurred on the ECS.                                                                       |
| DELETED           | The ECS has been deleted.                                                                               |
| SHELVED           | The ECS boot from an image is shelved.                                                                  |
| SHELVED_OFFLOADED | The ECS boot from a volume is shelved.                                                                  |
| UNKNOWN           | The ECS status is unknown.                                                                              |

**Table A-2** OS-EXT-STS:vm\_state statuses

| Status   | Description                                  |
|----------|----------------------------------------------|
| building | The ECS has been created but is not running. |
| active   | The ECS is running properly.                 |
| stopped  | The ECS has been properly stopped.           |
| resized  | The ECS specifications have been modified.   |
| error    | An error has occurred on the ECS.            |



| Status            | Description                            |
|-------------------|----------------------------------------|
| deleted           | The ECS has been deleted.              |
| shelved           | The ECS boot from an image is shelved. |
| shelved_offloaded | The ECS boot from a volume is shelved. |

**Table A-3 OS-EXT-STS:task\_state** statuses

| Status                       | Description                                                                              |
|------------------------------|------------------------------------------------------------------------------------------|
| scheduling                   | The ECS is being created.                                                                |
| block_device_mapping         | The ECS is being created, and disks are being prepared for the ECS.                      |
| networking                   | The ECS is being created, and network resources are being prepared for the ECS.          |
| spawning                     | The ECS is being created.                                                                |
| rebooting                    | The ECS is being restarted.                                                              |
| reboot_pending               | A restarting command has been issued to an ECS, and the ECS is to be restarted.          |
| reboot_started               | The ECS is being restarted.                                                              |
| rebooting_hard               | The ECS is being forcibly restarted.                                                     |
| reboot_pending_hard          | A forcible restarting command has been issued to an ECS, and the ECS is to be restarted. |
| reboot_started_hard          | The ECS is being forcibly restarted.                                                     |
| rebuilding                   | The ECS is being rebuilt.                                                                |
| rebuild_block_device_mapping | The ECS is being rebuilt, and disks are being prepared for the ECS.                      |
| rebuild_spawning             | The ECS is being rebuilt.                                                                |
| migrating                    | The ECS is being live migrated.                                                          |
| resize_prep                  | The ECS specifications are to be modified, and resources are being prepared for the ECS. |
| resize_migrating             | The specifications of the ECS are being modified, and it is being migrated.              |
| resize_migrated              | The specifications of the ECS are being modified, and it has been migrated.              |

| Status                        | Description                                                      |
|-------------------------------|------------------------------------------------------------------|
| resize_finish                 | The specifications of the ECS are being modified.                |
| resize_reverting              | The specifications modification of the ECS is being rolled back. |
| powering-off                  | The ECS is stopped.                                              |
| powering-on                   | The ECS is being started.                                        |
| deleting                      | The ECS is being deleted.                                        |
| shelving                      | The ECS boot from an image is being shelved.                     |
| shelving_offloading           | The ECS boot from a volume is being shelved.                     |
| shelving_image_pending_upload | A shelving image is pending uploaded.                            |
| shelving_image_uploading      | A shelving image is pending uploaded.                            |
| unshelving                    | The ECS is being unshelved.                                      |

**Table A-4** Mapping between statuses

| vm_state | task_state                                                           | status      |
|----------|----------------------------------------------------------------------|-------------|
| building | scheduling<br>block_device_mapping<br>networking<br>spawning<br>null | BUILD       |
| active   | rebooting<br>reboot_pending<br>reboot_started                        | REBOOT      |
|          | rebooting_hard<br>reboot_pending_hard<br>reboot_started_hard         | HARD_REBOOT |
|          | rebuilding<br>rebuild_block_device_mapping<br>rebuild_spawning       | REBUILD     |
|          | migrating                                                            | MIGRATING   |

| vm_state          | task_state                                                                                  | status            |
|-------------------|---------------------------------------------------------------------------------------------|-------------------|
|                   | powering-off<br>deleting<br>null                                                            | ACTIVE            |
| stopped           | resize_prep<br>resize_migrating<br>resize_migrated<br>resize_finish                         | RESIZE            |
|                   | rebuilding<br>rebuild_block_device_mapping<br>rebuild_spawning                              | REBUILD           |
|                   | powering-on<br>deleting<br>null                                                             | SHUTOFF           |
| resized           | resize_reverting                                                                            | REVERT_RESIZE     |
|                   | null                                                                                        | VERIFY_RESIZE     |
| error             | rebuilding<br>rebuild_block_device_mapping<br>rebuild_spawning                              | REBUILD           |
|                   | deleting<br>null                                                                            | ERROR             |
| deleted           | null                                                                                        | DELETED           |
| shelved           | shelving<br>shelving_image_pending_upload<br>shelving_image_uploading<br>unshelving<br>null | SHELVED           |
| shelved_offloaded | shelving_offloading<br>unshelving<br>null                                                   | SHELVED_OFFLOADED |

 **NOTE**

If the status is not included in [Table A-4](#), the status is UNKNOWN.

## A.4 Network APIs

For details about network APIs, see [Virtual Private Cloud API Reference](#).

## A.5 Idempotent Requests

Idempotency is important in APIs because a resource may be called multiple times if an operation times out or encounters other server issues before it completes. If the original request and the subsequent retries are successful, the operation is completed multiple times. This means that you might create more resources than you intended.

To solve this problem, idempotent request identifiers are introduced to distinguish the first attempt from subsequent attempts. With an idempotent request, if the original request completes successfully, any subsequent retries complete successfully without performing any further actions.

### Idempotency

An idempotent operation produces the same result even when the operation is repeated many times.

### Idempotency in ECS APIs

When sending a request, the client can add **X-Client-Token** to the HTTP header as the idempotency identifier. For details, see [Table A-5](#).

**Table A-5** Idempotency identifier message header

| Parameter      | Description                                                                                                                             | Mandatory | Example Value                        |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------|
| X-Client-Token | Identifier that ensures idempotency of client requests<br>It is a 32-bit UUID and is generated by the client. The value must be unique. | No        | 46436810-d999-454c-bd85-e515fd258600 |

Generally, the client resends the request only when the response status code is 5xx due to an internal server exception or connection timeout or when the response result cannot be obtained. If the retry request uses the same idempotent identifier and request parameters, the server will return the same result as the original request.

Description about idempotency identifiers:

- An idempotency identifier is a case-sensitive 32-bit UUID in the format of xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx (8-4-4-4-12), where each x is a hexadecimal number ranging from 0 to 9 or a to f. If you provide an identifier that is not in UUID format, the server returns error code Ecs.0123.
- Idempotency identifiers must be unique. If you reuse an identifier with different parameters, the server returns error code Ecs.0122.
- Idempotent identifiers remain valid for eight hours. If an identifier has expired, the server returns error code Ecs.0124.
- After an idempotency identifier is used:
  - If the returned status code is 2xx, subsequent retries will return the same result as the original one without affecting the server status.
  - If the returned status code is 4xx, subsequent retries will fail. You need to rectify the fault based on the error information and retry the request.

## Idempotent APIs

The following APIs are idempotent with **X-Client-Token**:

- [Creating ECSs](#)
- [Creating an ECS \(Pay-per-Use\)](#)

# B Change History

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| Released On | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2023-05-26  | <p>This issue is the second official release.</p> <p>Modified the following content:</p> <ul style="list-style-type: none"><li>• Modified the description of the <b>hw:cpu_threads</b> parameter in <a href="#">Querying Details About an ECS</a>.</li><li>• Modified the description of the <b>status</b> parameter in <a href="#">Querying Details About ECSs</a>.</li><li>• Added error codes Ecs.0227 and Ecs.0089 in <a href="#">Error Codes</a>.</li></ul> |
| 2022-09-15  | <p>This issue is the first official release.</p>                                                                                                                                                                                                                                                                                                                                                                                                                 |