



FUJITSU Cloud Service K5 IaaS API Reference (Foundation Service)

Version 1.12
FUJITSU LIMITED

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Preface

Structure of the manuals

Manual Title	Purposes and Methods of Use
IaaS API Reference • Foundation Service (this document) • Network • Application Platform Service • Management Administration • Contract Management	Detailed reference for using the REST API.
IaaS Features Handbook	Explains the features provided by this service.
IaaS API User Guide	Explains how to use the REST API, how to build the API runtime environment, and sample scripts according to usage sequences, etc.
IaaS Heat Template Specifications	This document explains the format of the Heat Orchestration Template (HOT) that you create in order to use the orchestration function.
IaaS Service Portal User Guide	This document explains how to use the functions provided by this service via Service Portal (Web GUI).
K5 Portal User Guide	This document explains how to use the functions, including registration and user information management, provided by K5 Portal.

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Revision History

Edition	Date of Update	Location	Overview
1.6	July 1, 2016	Bare Metal Server	Description deleted
1.7	July 29, 2016	Create network resource on page 181	Description added
		List network resources on page 183	Description modified
		List images on page 206	Description modified
		Get an Image on page 207	Description modified
		API list on page 254	Description added
		API error codes on page 255	Description added
		Bulk operation POST /v1/{account}?bulk-delete on page 304	Description added
1.8	September 1, 2016	API list on page 192	Description modified
		Get an Image on page 207	Description modified
1.9	October 6, 2016	1.6 Virtual server imports/exports	Title modified
		Virtual server imports/exports on page 121	Title modified
		API list on page 121	Description added
		Image export on page 130	Article added
		Retrieve image export status on page 132	Article added
		Retrieve the status of the image export list on page 135	Article added
		Cancel image export on page 138	Article added
1.10	October 24, 2016	Create server on page 16	Description added
		Create server with scheduler hints on page 42	Description added
		Create multiple servers on page 47	Description added
		Create server on page 60	Description added
		Create server with configuration drive on page 72	Description added

Edition	Date of Update	Location	Overview
		Create server with OS-EXT-IPS-MAC:mac_addr extended attribute on page 80	Description added
		Create server on page 88	Description added
		Bulk operation POST /v1/{account}?bulk-delete on page 304	Description modified
1.11	December 13, 2016	Create server on page 16	Description modified
		Create server with scheduler hints on page 42	Description modified
		Create multiple servers on page 47	Description modified
		Create server on page 60	Description modified
		Create server with configuration drive on page 72	Description modified
		Create server with OS-EXT-IPS-MAC:mac_addr extended attribute on page 80	Description modified
		Create server on page 88	Description modified
		Register image on page 121	Description modified
		Retrieve image registration status on page 125	Description modified
		Generate URLs when using APIs on page 192	Description modified
		API list on page 192	Description modified
1.12	January 16, 2017	Update image member on page 212	Description modified
		Generate URLs when using APIs on page 192	Description modified
		API list on page 192	Description modified
		Update image member on page 212	Description modified
		Get VNC console for an instance on page 213	Article added

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Part 1: Compute

Topics:

- *Location service*
- *Virtual servers*
- *Dedicated instances*
- *Provisioning script*
- *Auto scale*
- *Virtual server imports/exports*
- *Virtual servers for SAP*
- *Other (common)*

1.1 Location service

1.1.1 Generate URLs when using APIs

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

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

https://hostNamev2/{tenant_id}

Host portion Path portion

Create the URL in one of the following formats:

- If you remember the tenant_id:
Join the path name of each API in the host section of the end point URL
- If you do not remember the tenant_id:
The endpoint URL and the path name of each API with "/v2/{tenant_id}" removed from the beginning

1.1.2 API list

Servers with extended availability zones

Item	API name	Description
1	GET /v2/{tenant_id}/servers/{server_id} Show server	Displays information of the specified server with availability zones
2	GET /v2/{tenant_id}/servers/detail List details for servers	Lists details for servers with current availability zones

1.1.3 Request header

Header	Specified value
Accept	application/json
Content-Type	application/json
X-Auth-Token	Authentication token

1.1.4 API error codes

Error code	Description
500, other codes possible	Server Error, cloudServersFault
400	badRequest
401	unauthorized
403	Forbidden, resizeNotAllowed
404	itemNotFound
405	badMethod
409	conflictingRequest
413	overLimit
415	badMediaType
501	notImplemented
503	serviceUnavailable

1.1.5 Notes

When an API (show instance list, etc.) used to display a list of resources is executed, only some of the availability zone information may be returned. If this happens, it is assumed that infrastructure maintenance is in progress, so wait for a few moments (at least one minute) and then execute the API again.

1.1.6 API details

1.1.6.1 Show server

Method	URI	Description
GET	/v2/{tenant_id}/servers/{server_id}	Shows information for a specified server, including its availability zone.

Normal response codes: 200

Request

This table shows the URI parameters for the show server request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.

This operation does not require a request body.

Response

Example. Show server: JSON response

```
{
  "server": {
    "OS-EXT-AZ:availability_zone": "nova",
    "accessIPv4": "",
    "accessIPv6": "",
    "addresses": {
      "private": [
        {
          "addr": "192.168.0.3",
          "version": 4
        }
      ]
    },
    "created": "2013-01-30T13:38:47Z",
    "flavor": {
      "id": "1",
      "links": [
        {
          "href": "http://openstack.example.com/openstack/flavors/1",
          "rel": "bookmark"
        }
      ]
    },
    "hostId": "d38ea49a033b0efaf80c165de63f4805c886dfb94dc0fe731227eccb",
    "id": "fb7babfd-elal-4add-90e6-3558180983c7",
    "image": {
      "id": "70a599e0-31e7-49b7-b260-868f441e862b",
      "links": [
        {
          "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
          "rel": "bookmark"
        }
      ]
    },
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/servers/fb7babfd-
elal-4add-90e6-3558180983c7",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/servers/fb7babfd-
elal-4add-90e6-3558180983c7",
        "rel": "bookmark"
      }
    ],
    "metadata": {
      "My Server Name": "Apache1"
    },
    "name": "new-server-test",
    "progress": 0,
    "status": "ACTIVE",
    "tenant_id": "openstack",
    "updated": "2013-01-30T13:38:49Z",
    "user_id": "fake"
  }
}
```

1.1.6.2 List details for servers

Method	URI	Description
GET	/v2/{tenant_id}/servers/detail	Lists details for servers, including their current availability zone.

Normal response codes: 200

Request

This table shows the URI parameters for the list details for servers request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This operation does not require a request body.

Response

Example. List details for servers: JSON response

```
{
  "servers": [
    {
      "OS-EXT-AZ:availability_zone": "nova",
      "accessIPv4": "",
      "accessIPv6": "",
      "addresses": {
        "private": [
          {
            "addr": "192.168.0.3",
            "version": 4
          }
        ]
      },
      "created": "2013-01-30T13:26:51Z",
      "flavor": {
        "id": "1",
        "links": [
          {
            "href": "http://openstack.example.com/openstack/flavors/1",
            "rel": "bookmark"
          }
        ]
      },
      "hostId":
        "60c988a84401fa15888a32833e5848e9caa99a45778310ba7b363165",
      "id": "3dbf5b00-dabc-41ff-b6ab-4409568fae9d",
      "image": {
        "id": "70a599e0-31e7-49b7-b260-868f441e862b",
        "links": [
          {
            "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
            "rel": "bookmark"
          }
        ]
      },
      "links": [
        {
```

```
    "href": "http://openstack.example.com/v2/openstack/servers/3dbf5b00-  
dabc-41ff-b6ab-4409568fae9d",  
    "rel": "self"  
  },  
  {  
    "href": "http://openstack.example.com/openstack/servers/3dbf5b00-  
dabc-41ff-b6ab-4409568fae9d",  
    "rel": "bookmark"  
  }  
],  
"metadata": {  
  "My Server Name": "Apache1"  
},  
"name": "new-server-test",  
"progress": 0,  
"status": "ACTIVE",  
"tenant_id": "openstack",  
"updated": "2013-01-30T13:26:52Z",  
"user_id": "fake"  
}  
]  
}
```

1.2 Virtual servers

1.2.1 Generate URLs when using APIs

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

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

https://hostName/v2/{tenant_id}

Host portion Path portion

Create the URL in one of the following formats:

- If you remember the tenant_id:
Join the path name of each API in the host section of the end point URL
- If you do not remember the tenant_id:
The endpoint URL and the path name of each API with "/v2/{tenant_id}" removed from the beginning

1.2.2 API list

Servers

Item	API	Description
1	GET /v2/{tenant_id}/servers List servers	Lists the IDs and names of all servers
2	GET /v2/{tenant_id}/servers{?changes-since,image,flavor,name,status,host} List servers	Lists the specified server name information
3	GET /v2/{tenant_id}/servers{?changes-since,image,flavor,name,status,host} List servers	Lists the specified server ID information
4	POST /v2/{tenant_id}/servers Create server	Creates a server
5	POST /v2/{tenant_id}/servers Create server	Creates a specific server
6	GET /v2/{tenant_id}/servers/detail{?changes-since,image,flavor,name,status,host} Get server details	Lists all server details

Item	API	Description
7	GET /v2/{tenant_id}/servers/detail{?changes-since,image,flavor,name,status,host} Get server details	Lists details of servers with specified status
8	GET /v2/{tenant_id}/servers/{server_id} Get server details	Retrieves detailed information of the specified server
9	PUT /v2/{tenant_id}/servers/{server_id}] Update server	Updates the current instance name
10	PUT /v2/{tenant_id}/servers/{server_id} Update server	Updates the IP address of the current instance
11	DELETE /v2/{tenant_id}/servers/{server_id} Delete server	Deletes the specified server

Server actions

Item	API	Description
1	POST /v2/{tenant_id}/servers/{server_id}/action Reboot server	Uses the SOFT type to restart the specified server
2	POST /v2/{tenant_id}/servers/{server_id}/action Rebuild server	Rebuilds the specified server
3	POST /v2/{tenant_id}/servers/{server_id}/action Resize server	Resizes the specified server
4	POST /v2/{tenant_id}/servers/{server_id}/action Confirm resized server	Checks the resized server
5	POST /v2/{tenant_id}/servers/{server_id}/action Revert resized server	Reverts the resized server to its original size
6	POST /v2/{tenant_id}/servers/{server_id}/action Shelves a running server	Shelves the specified server
7	POST /v2/{tenant_id}/servers/{server_id}/action Restores a shelved server	Restores a server specified for shelving

Images

Item	API	Description
1	GET /v2/{tenant_id}/images/detail{?changes-since,server,name,status,type} List images details	Lists the details of available images
2	GET /v2/{tenant_id}/images/detail{?changes-since,server,name,status,type} List images details	Lists the details of available specified images
3	GET /v2/{tenant_id}/images/{image_id} Get image details	Retrieves the details of the specified image
4	DELETE /v2/{tenant_id}/images/{image_id} Delete image	Deletes the specified image

Metadata

Item	API	Description
1	GET /v2/{tenant_id}/images/{image_id}/metadata Show image metadata	Displays the metadata of the specified images
2	POST /v2/{tenant_id}/images/{image_id}/metadata Create or replace image metadata	Creates or replaces metadata for the specified image
3	PUT /v2/{tenant_id}/images/{image_id}/metadata Update image metadata items	Updates the metadata of images identified by key
4	GET /v2/{tenant_id}/images/{image_id}/metadata/{key} Show image metadata item details	Displays the metadata item (identified by key) of the specified image
5	PUT /v2/{tenant_id}/images/{image_id}/metadata/{key} Create or update image metadata item	Creates or updates the metadata item identified by key
6	DELETE /v2/{tenant_id}/images/{image_id}/metadata/{key} Delete image metadata item	Deletes the metadata item identified by key

Servers with scheduler hints

Item	API	Description
1	POST /v2/{tenant_id}/servers Create server with scheduler hints	Creates a server using scheduler instructions that were passed directly to the scheduler.

Server multiple creation

Item	API	Description
1	POST /v2/{tenant_id}/servers Create multiple servers	Creates one or more servers that have the optional booking ID
2	POST /v2/{tenant_id}/servers Create multiple servers	Creates one or more servers with the optional minimum count
3	POST /v2/{tenant_id}/servers Create multiple servers	Creates one or more servers with the optional maximum count

Server extended status

Item	API	Description
1	GET /v2/{tenant_id}/servers/{server_id} Show server extended status	Displays the extended status attributes of specified servers
2	GET /v2/{tenant_id}/servers/detail List extended status for servers	Lists the details of the extended status attributes of all servers

Server extended attributes

Item	API	Description
1	GET /v2/{tenant_id}/servers List servers with extended server attributes	Lists the details of the extended server attributes of all servers
2	GET /v2/{tenant_id}/servers/{server_id} Show extended server attributes	Displays the extended server attributes of specified servers

Server IP type

Item	API	Description
1	GET /v2/{tenant_id}/servers/detail List servers with IP type	Lists the fixed and floating IP addresses by type for all servers

Servers and images with disk config

Item	API	Description
1	POST /v2/{tenant_id}/servers Create server	Creates a server
2	GET /v2/{tenant_id}/servers/{server_id} Show server information	Displays information about the specified server
3	GET /v2/{tenant_id}/servers/detail	Lists the servers

Item	API	Description
	List servers	
4	GET /v2/{tenant_id}/images/{image_id} Get image information	Retrieves information about the specified image
5	GET /v2/{tenant_id}/images/detail List images	Lists the images

Configuration drive

Item	API	Description
1	POST /v2/{tenant_id}/servers Create server with configuration drive	Creates a server using extended attributes of the driver settings
2	GET /v2/{tenant_id}/servers/{server_id} Get server information with configuration drive	Displays information about the specified server, including extended attributes of the driver settings
3	GET /v2/{tenant_id}/servers/detail Get server details with configuration drive	Displays detailed information about all servers, including extended attributes of the driver settings

Server OS-EXT-IPS-MAC:mac_addr extended attribute

Item	API	Description
1	POST /v2/{tenant_id}/servers CreateserverwithOS-EXT-IPS-MAC:mac_addrextended attribute	Creates a server using OS-EXT-IPS-MAC:mac_addr
2	GET /v2/{tenant_id}/servers/{server_id} Show server information	Displays information about the specified server (including OS-EXT-IPS-MAC:mac_addr)
3	GET /v2/{tenant_id}/servers/detail Get server details	Lists details of all servers (including OS-EXT-IPS-MAC:mac_addr)

Servers with block device mapping format

Item	API	Description
1	POST /v2/{tenant_id}/servers Create server	Creates a server using block device mapping
2	GET /v2/{tenant_id}/servers{?changes-since,image,flavor,name,status,host} List servers	Lists the ID, name and link of all servers

Volume attachment

Item	API	Description
1	POST /v2/{tenant_id}/servers/{server_id}/os-volume_attachments Attach volume	Attaches a volume to the specified server
2	GET /v2/{tenant_id}/servers/{server_id}/os-volume_attachments List volume attachments	Lists the volumes of the specified server
3	GET /v2/{tenant_id}/servers/{server_id}/os-volume_attachments/{attachment_id} Show volume attachment details	Displays details of the specified volume
4	DELETE /v2/{tenant_id}/servers/{server_id}/os-volume_attachments/{attachment_id} Delete volume attachment	Detaches the specified volume from the specified server

Server start and stop

Item	API	Description
1	POST /v2/{tenant_id}/servers/{server_id}/action Start server	Sets the status to ACTIVE, and starts the server
2	POST /v2/{tenant_id}/servers/{server_id}/action Stop server	Sets the status to STOPPED, and stops the server

Flavor access

Item	API	Description
1	GET /v2/{tenant_id}/flavors List flavors with access type	Lists the flavors and access types
2	GET /v2/{tenant_id}/flavors/{flavor_id} Show flavor access type	Retrieves the flavor access type

Attach interfaces

Item	API	Description
1	POST /v2/{tenant_id}/servers/{server_id}/os-interface Create interface	Creates and uses a port for connecting to a server instance
2	GET /v2/{tenant_id}/servers/{server_id}/os-interface	Lists the ports

Item	API	Description
	List interfaces	
3	GET /v2/{tenant_id}/servers/{server_id}/os-interface/{attachment_id} Show attached interface information	Displays information related to the specified port
4	DELETE /v2/{tenant_id}/servers/{server_id}/os-interface/{attachment_id} Detach interface	Detaches the specified port

Server groups (os-server-groups)

Item	API	Description
1	GET /v2/{tenant_id}/os-server-groups Lists server groups	Lists the server groups
2	POST /v2/{tenant_id}/os-server-groups Creates a server group	Creates a server group
3	GET /v2/{tenant_id}/os-server-groups/{ServerGroup_id} Shows server group details	Retrieves detailed information about the specified server group
4	DELETE /v2/{tenant_id}/os-server-groups/{ServerGroup_id} Deletes server group	Deletes the server group

Server metadata

Item	API	Description
1	POST /v2/{tenant_id}/servers/{server_id}/metadata Update server metadata items	Updates the metadata item (identified by key) of the specified server

1.2.3 Request header

Header	Specified value
Accept	application/json
Content-Type	application/json
X-Auth-Token	Valid authentication token

1.2.4 API error codes

Error code	Description
500, other codes possible	Server Error, cloudServersFault
400	badRequest
401	unauthorized
403	Forbidden, resizeNotAllowed
404	itemNotFound
405	badMethod
409	conflictingRequest, buildInProgress
413	overLimit
415	badMediaType
422	HTTPUnprocessableEntity
501	notImplemented
503	serviceUnavailable

1.2.5 Notes

- When an API (show instance list, etc.) used to display a list of resources is executed, only some of the availability zone information may be returned. If this happens, it is assumed that infrastructure maintenance is in progress, so wait for a few moments (at least one minute) and then execute the API again.
- Description of API error code
The response code 500 is returned when execution of the APIs below is not approved under the operator privileges (role).
 - GET /v2/{tenant_id}/images/{image_id}
 - GET /v2/{tenant_id}/images/{image_id}/metadata
 - GET /v2/{tenant_id}/images/{image_id}/metadata/{key}
 - POST /v2/{tenant_id}/images/{image_id}/metadata
 - PUT /v2/{tenant_id}/images/{image_id}/metadata
 - PUT /v2/{tenant_id}/images/{image_id}/metadata/{key}
 - DELETE /v2/{tenant_id}/images/{image_id}/metadata/{key}

1.2.6 API details

1.2.6.1 List servers

Method	URI	Description
GET	/v2/{tenant_id}/servers{?changessince,image,flavor,name,status,host}	Lists IDs, names, and links for all servers.

Normal response codes: 200, 203

Request

This table shows the URI parameters for the list servers request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.

This table shows the query parameters for the list servers request:

Name	Type	Description
changes-since	DateTime (Optional)	A time/date stamp for when the server last changed status.
image	AnyURI (Optional)	Name of the image in URL format.
flavor	AnyURI (Optional)	Name of the flavor in URL format.
name	String (Optional)	Name of the server as a string.
status	Server Status (Optional)	Value of the status of the server so that you can filter on "ACTIVE" for example.
host	String (Optional)	Name of the host as a string.

Response

Example. List servers: JSON 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"
}
]
}

```

1.2.6.2 Create server

Method	URI	Description
POST	/v2/{tenant_id}/servers	Creates a server.

Normal response codes: 202



Caution

- When an instance created using a Linux image is started or restarted, the sshd settings are initialized, and it may no longer be possible to log in to the instance. Refer to ["Reboot server" on page 27](#) for details on the required tasks.
- When the password of the user who registered (imported) the image is changed, the image can no longer be used. In such a case, convey either of the following to the operator and request a change of image.
 - The location of the image following the change of image UUID and user authentication information
 - The image UUID that was registered (imported) following the change of image UUID and user authentication information
- If the following message is displayed after instance creation as a "message" for the instance whose "status" is "ERROR" or "fault", please re-create an instance according to the described procedure.

"Block Device Mapping is Invalid: Volume <Volume uuid> did not finish being created even after we waited <Elapsed time (seconds)> seconds or <Volume status confirmation frequency> attempts."

The procedure for re-creating an instance is as below.

- Wait for the "status" of the volume indicated by <Volume uuid> in the message to change to "available".

Confirm the volume status using ["Show volume information" on page 222](#).

- Delete the failed instance.

Delete the failed instance using ["Delete server" on page 26](#). Confirm that only the instance was deleted using the following procedure.

- Confirm that only the instance was deleted.

Confirm that the instance was deleted using ["Show server information" on page 65](#).

- Confirm that the volume of 1) exists even after instance deletion.

Confirm that the volume exists using ["Show volume information" on page 222](#).

- Create an instance specifying the volume from 1.

Specify "volume" as "source_type" in "block_device_mapping_v2" and the reused <Volume uuid> as the "uuid" to create an instance.

Request

This table shows the URI parameters for the create server request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.

This table shows the body parameters for the create server request:

Name	Type	Description
security_group	string (Optional)	One or more security_group objects. Specify the name of the security group in the name attribute. If you omit this attribute, the server is created in the default security group. Specify a security group for which TCP communication is permitted for the following IP address and port number. IP address: 169.254.169.254 Port number: 80 If TCP communication is not permitted, the host name (computer name) and administrator password may not be set when creating an instance.
user_data	string (Optional)	Configuration information or scripts to use upon launch. Must be Base64 encoded. The main formats that are supported are as follows: - Linux: - Shell script (begins with #!) - Windows: - PowerShell (begins with #ps1_sysnative or #ps1_x86) - Windows batch (begins with rem cmd) If Linux, cloud-config files can also be specified, but since verification has not been completed, we recommend using Shell scripts.
availability_zone	string (Optional)	The availability zone in which to launch the server.
server	ServerForCreate	server.
imageRef	String	The image reference for the desired image for your server instance. Specify as an ID or full URL.
flavorRef	String	The flavor reference for the desired flavor for your server instance.

Name	Type	Description
		Specify as an ID or full URL.
key_name	string (Optional)	Assigns the public key of the named keypair to the server.
networks	string (Optional)	A networks object. By default, the server instance is provisioned with all isolated networks for the tenant. Optionally, you can create one or more NICs on the server. To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object. To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. You can specify multiple NICs on the server. Ensure that the network is specified. To set the following information for a virtual server, a virtual router must be connected to the network that the virtual server will be connected to. • Host name (computer name) • Administrator password • Authentication key (key pair)
uuid	string (Optional)	To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object. Required if you omit the port attribute. If the network includes multiple subnets, IP addresses will be allocated from any subnet. To allocate an IP address of a specific subnet, create a port in advance, and specify the uuid of that port in port.
port	string (Optional)	To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. Required if you omit the uuid attribute.
fixed_ip	string (Optional)	A fixed IPv4 address for the NIC. Valid with a neutron or nova-networks network.
name	string	The server name. This information is also used as the computer name/host name. If 64 characters or more are specified: • Windows: The computer name is the default name set by Windows. • Linux:

Name	Type	Description
		The host name will be "host-<i>fixedIpAddressOfEth0</i>". The string set for the computer name/host name is changed as follows: • Spaces () and underscores (_) are replaced with hyphens (-) • Uppercase letters are replaced with lowercase letters • Symbols other than periods (.) and hyphens (-) are removed • Periods (.) are removed from the beginning and end of the string, and strings consisting of hyphens (-) are removed • In Windows, if the string contains a period (.) anywhere other than at the beginning or end, then the characters preceding the period (.) will be used for the name.
metadata	string (Optional)	Metadata key and value pairs. The maximum size of the metadata key and value is 255 bytes each. • Windows: To specify a password of an instance, specify the "admin_pass" key. The specified password will be set for users specified in cloudbase-init. Check with the image provider regarding users who are specified for cloudbase-init. Example setting: "metadata": {"admin_pass": "<i>passwordSetForInstance</i>"} • To use the automatic failover feature, specify "fcx.autofailover": "true". However, instances that satisfy the following conditions are excluded from recovery by the operator. Users must either re-create such instances, or delete them. • "fcx.autofailover": "false" has been set, or, • the instance is a target of auto scaling, or, • the status of the instance is ERROR
block_device_mapping_v2	string	Enables booting the server from a volume when additional parameters are given.
device_name	string	Describes a path to the device for the volume you want to use to boot the server. Specify this item in /dev/vd<i>deviceName</i> format. /dev/vd is fixed, and for <i>deviceName</i>, specify characters that are valid as a device name. When creating an instance that is allocated multiple volumes, for the boot volume, specify the character with highest priority among the device names of all volumes.

Name	Type	Description
		The order of priority is a > b > c > ...
source_type	string	Describes the volume source type for the volume. Choices are "snapshot", "volume", or "image".
destination_type	string	Specifies the connection destination ("volume").
delete_on_termination	bool (Optional)	Specifies whether volumes created during the instance creation will be deleted when the instance is deleted. When "True" is specified, volumes during instance creation will also be deleted when the instance is deleted. When "False" is specified, the volumes created during instance creation will not be deleted when the instance is deleted. If not specified, "False" (do not delete) will be used. The volume where snapshots are collected will not be deleted even if "True" is specified.
boot_index	String	Specifies the device start order. Specify sequential values, starting from 0. For the boot disk, specify "0".
config_drive	String (Optional)	Only "false" can be specified.
uuid	uuid	Specifies the UUID of the resource specified for source_type.
volume_size	String	Specify the volume size in GB. This item must be specified when "image" is specified for source_type. Specify a value equal to or higher than the min_disk parameter of the image to be used. If the min_disk parameter of the image to be used has not been specified or is "0", check the minimum size with the image provider and specify the value accordingly. If "volume" was specified for source_type, this item will be ignored even if a value is specified. If "snapshot" was specified for source_type, and this item is omitted, the volume size of the snapshot collection source will be used.

Example. Create server: JSON request

```
{
  "server": {
    "name": "server-test-1",
    "imageRef": "b5660a6e-4b46-4be3-9707-6b47221b454f",
    "flavorRef": "2",
    "key_name": "keypair1",
    "networks": [
      {
        "uuid": "d32019d3-bc6e-4319-9c1d-6722fc136a22"
      }
    ]
  }
}
```

```

    },
    {
      "port": "2f2eab14-5c2f-4111-871f-f752c73ca3bf"
    }
  ],
  "security_groups": [
    {
      "name": "default"
    },
    {
      "name": "another-secgroup-name"
    }
  ],
  "block_device_mapping_v2": [
    {
      "device_name": "/dev/vda",
      "source_type": "image",
      "destination_type": "volume",
      "volume_size": "20",
      "boot_index": "0",
      "uuid": "6cbf9710-87e3-4a36-8116-9b3396882621",
      "delete_on_termination": "True"
    },
    {
      "device_name": "/dev/vdb",
      "source_type": "volume",
      "destination_type": "volume",
      "boot_index": "1",
      "uuid": "0a273d8d-c5e1-4886-bd93-1d1779283fa3",
      "delete_on_termination": "True"
    },
    {
      "device_name": "/dev/vdc",
      "source_type": "snapshot",
      "destination_type": "volume",
      "volume_size": "30",
      "boot_index": "2",
      "uuid": "492eac4d-6c12-4828-b0ec-75d3bfff0bd4b",
      "delete_on_termination": "True"
    }
  ]
}

```

Response

Example. Create server: JSON response

```

{
  "server": {
    "security_groups": [
      {
        "name": "default"
      }
    ],
    "OS-DCF:diskConfig": "MANUAL",
    "id": "c6d04159-9bfc-4ab8-823d-0d5ca2abe152",
    "links": [
      {
        "href": "http://166.78.46.130:8774/v2/4fd44f30292945e481c7b8a0c8908869/servers/c6d04159-9bfc-4ab8-823d-0d5ca2abe152",
        "rel": "self"
      },
      {
        "href": "http://166.78.46.130:8774/4fd44f30292945e481c7b8a0c8908869/servers/c6d04159-9bfc-4ab8-823d-0d5ca2abe152",

```

```

    "rel": "bookmark"
  }
],
"adminPass": "aabbccddeeff"
}
}

```

1.2.6.3 Get server details

Method	URI	Description
GET	/v2/{tenant_id}/servers/{server_id}	Gets details for a specified server.

Normal response codes: 200, 203

Request

This table shows the URI parameters for the get server details request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server.

This operation does not require a request body.

Response

Example. Get server details: JSON response

```

{
  "server": {
    "accessIPv4": "",
    "accessIPv6": "",
    "addresses": {
      "private": [
        {
          "addr": "192.168.0.3",
          "version": 4
        }
      ]
    },
    "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": {
      "id": "70a599e0-31e7-49b7-b260-868f441e862b",
      "links": [
        {
          "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
          "rel": "bookmark"
        }
      ]
    }
  }
}

```

```

    ],
    "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": {
      "My Server Name": "Apache1"
    },
    "name": "new-server-test",
    "progress": 0,
    "status": "ACTIVE",
    "tenant_id": "openstack",
    "updated": "2012-08-20T21:11:09Z",
    "user_id": "fake"
  }
}

```

1.2.6.4 Update server

Method	URI	Description
PUT	/v2/{tenant_id}/servers/{server_id}	Updates the editable attributes of the specified server.

Normal response codes: 200

Request

This table shows the URI parameters for the update server request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server.

Example. Update Server Name Request: JSON

```

{
  "server": {
    "name": "new-server-test"
  }
}

```

Example. Update Server IP Addresses Request: JSON

```

{
  "server": {
    "accessIPv4": "67.23.10.132",
    "accessIPv6": "::babe:67.23.10.132"
  }
}

```

Response

Example. Update Server Name Response: JSON

```
{
  "server": {
    "id": "52415800-8b69-11e0-9b19-734f565bc83b",
    "tenant_id": "1234",
    "user_id": "5678",
    "name": "new-server-test",
    "created": "2010-11-11T12:00:00Z",
    "updated": "2010-11-12T12:44:44Z",
    "hostId": "e4d909c290d0fb1ca068ffaddf22cbd0",
    "accessIPv4": "67.23.10.138",
    "accessIPv6": "::babe:67.23.10.138",
    "progress": 0,
    "status": "ACTIVE",
    "image": {
      "id": "52415800-8b69-11e0-9b19-734f6f006e54",
      "name": "CentOS 5.2",
      "links": [
        {
          "rel": "self",
          "href": "http://servers.api.openstack.org/v2/1234/images/52415800-8b69-11e0-9b19-734f6f006e54"
        },
        {
          "rel": "bookmark",
          "href": "http://servers.api.openstack.org/1234/images/52415800-8b69-11e0-9b19-734f6f006e54"
        }
      ]
    },
    "flavor": {
      "id": "52415800-8b69-11e0-9b19-734f1195ff37",
      "name": "256 MB Server",
      "links": [
        {
          "rel": "self",
          "href": "http://servers.api.openstack.org/v2/1234/flavors/52415800-8b69-11e0-9b19-734f1195ff37"
        },
        {
          "rel": "bookmark",
          "href": "http://servers.api.openstack.org/1234/flavors/52415800-8b69-11e0-9b19-734f1195ff37"
        }
      ]
    },
    "metadata": {
      "My Server Name": "Apache1"
    },
    "addresses": {
      "public": [
        {
          "version": 4,
          "addr": "67.23.10.138"
        },
        {
          "version": 6,
          "addr": "::babe:67.23.10.138"
        }
      ],
      "private": [
        {
          "version": 4,
          "addr": "10.176.42.19"
        }
      ]
    }
  }
}
```

```

    },
    {
      "version": 6,
      "addr": "::babe:10.176.42.19"
    }
  ],
  "links": [
    {
      "rel": "self",
      "href": "http://servers.api.openstack.org/v2/1234/servers/52415800-8b69-11e0-9b19-734f565bc83b"
    },
    {
      "rel": "bookmark",
      "href": "http://servers.api.openstack.org/1234/servers/52415800-8b69-11e0-9b19-734f565bc83b"
    }
  ]
}

```

Example. Update Server IP Addresses Response: JSON

```

{
  "server": {
    "id": "52415800-8b69-11e0-9b19-734f565bc83b",
    "tenant_id": "1234",
    "user_id": "5678",
    "name": "new-server-test",
    "created": "2010-11-11T12:00:00Z",
    "updated": "2010-11-12T12:55:55Z",
    "hostId": "e4d909c290d0fb1ca068ffaddf22cbd0",
    "accessIPv4": "67.23.10.132",
    "accessIPv6": "::babe:67.23.10.132",
    "progress": 0,
    "status": "ACTIVE",
    "image": {
      "id": "52415800-8b69-11e0-9b19-734f6f006e54",
      "name": "CentOS 5.2",
      "links": [
        {
          "rel": "self",
          "href": "http://servers.api.openstack.org/v2/1234/images/52415800-8b69-11e0-9b19-734f6f006e54"
        },
        {
          "rel": "bookmark",
          "href": "http://servers.api.openstack.org/1234/images/52415800-8b69-11e0-9b19-734f6f006e54"
        }
      ]
    },
    "flavor": {
      "id": "52415800-8b69-11e0-9b19-734f1195ff37",
      "name": "256 MB Server",
      "links": [
        {
          "rel": "self",
          "href": "http://servers.api.openstack.org/v2/1234/flavors/52415800-8b69-11e0-9b19-734f1195ff37"
        },
        {
          "rel": "bookmark",
          "href": "http://servers.api.openstack.org/1234/flavors/52415800-8b69-11e0-9b19-734f1195ff37"
        }
      ]
    }
  }
}

```

```

    }
  ],
  },
  "metadata": {
    "My Server Name": "Apache1"
  },
  "addresses": {
    "public": [
      {
        "version": 4,
        "addr": "67.23.10.138"
      },
      {
        "version": 6,
        "addr": "::babe:67.23.10.138"
      }
    ],
    "private": [
      {
        "version": 4,
        "addr": "10.176.42.19"
      },
      {
        "version": 6,
        "addr": "::babe:10.176.42.19"
      }
    ]
  },
  "links": [
    {
      "rel": "self",
      "href": "http://servers.api.openstack.org/v2/1234/servers/52415800-8b69-11e0-9b19-734fcede0043"
    },
    {
      "rel": "bookmark",
      "href": "http://servers.api.openstack.org/1234/servers/52415800-8b69-11e0-9b19-734fcede0043"
    }
  ]
}

```

1.2.6.5 Delete server

Method	URI	Description
DELETE	/v2/{tenant_id}/servers/{server_id}	Deletes a specified server.

Normal response codes: 204

Request

This table shows the URI parameters for the delete server request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server.

This operation does not accept a request body and does not return a response body.

1.2.6.6 Reboot server

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/action	Reboots the specified server. Specify the reboot action in the request body.

Normal response codes: 202



Caution

- When an instance created using a Linux image is restarted, the sshd settings are initialized, and it may no longer be possible to log in to the instance. If the sshd settings have been changed, execute the following commands with administrator privileges before restarting the instance.

```
# chkconfig cloud-init-local off
# chkconfig cloud-init off
# chkconfig cloud-config off
# chkconfig cloud-final off
```

- If retrieval of metadata fails, the initial user password may be locked.

By configuring the setting below, the password will no longer be locked from the next restart.

- Deploy the cloud-init configuration file.

```
# cat << EOF > /etc/cloud/cloud.cfg.d/datasource.cfg
datasource_list: ['OpenStack']
EOF
```

Request

This table shows the URI parameters for the reboot server request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server.

This table shows the body parameters for the reboot server request:

Name	Type	Description
type	string	Specifies SOFT or HARD reboot. A SOFT reboot signals the operating system to restart, which allows for graceful shutdown of all processes. A HARD reboot is equivalent to power cycling the server. This parameter is ignored in Compute where a HARD reboot is always performed.

Example. Reboot server: JSON request

```
{
  "reboot": {
    "type": "SOFT"
  }
}
```

Response

This operation does not return a response body.

1.2.6.7 Rebuild server

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/action	Rebuilds the specified server. Specify the rebuild action in the request body.

Normal response codes: 202

Request

This table shows the URI parameters for the rebuild server request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server.

This table shows the body parameters for the rebuild server request:

Name	Type	Description
name	string	The name for the new server.
metadata	string	Metadata key and value pairs. The maximum size of the metadata key and value is 255 bytes each.

Example. Rebuild server: JSON request

```
{
  "rebuild": {
    "name": "foobar",
    "adminPass": "seekr3t",
    "accessIPv4": "1.2.3.4",
    "accessIPv6": "fe80::100",
    "metadata": {
      "meta var": "meta val"
    }
  }
}
```

Response

This table shows the header parameters for the rebuild server response:

Name	Type	Description
Location	AnyURI (Required)	Specific URL of the server you want to rebuild.

Example. Rebuild server: JSON response

```
{
  "server": {
    "accessIPv4": "1.2.3.4",
    "accessIPv6": "fe80::100",
    "addresses": {
      "private": [
        {
          "addr": "192.168.0.3",
          "version": 4
        }
      ]
    },
    "adminPass": "seekr3t",
    "created": "2012-09-12T17:20:36Z",
    "flavor": {
      "id": "1",
      "links": [
        {
          "href": "http://openstack.example.com/openstack/flavors/1",
          "rel": "bookmark"
        }
      ]
    },
    "hostId": "1e3da81662354c25560b7e5ea6d8123031f67168b6992f20bb84df69",
    "id": "075e40fe-9f03-4652-ba8e-5f8e2547899a",
    "image": {
      "id": "70a599e0-31e7-49b7-b260-868f441e862b",
      "links": [
        {
          "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
          "rel": "bookmark"
        }
      ]
    },
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/
servers/075e40fe-9f03-4652-ba8e-5f8e2547899a",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/
servers/075e40fe-9f03-4652-ba8e-5f8e2547899a",
        "rel": "bookmark"
      }
    ],
    "metadata": {
      "meta var": "meta val"
    },
    "name": "foobar",
    "progress": 0,
    "status": "ACTIVE",
    "tenant_id": "openstack",
    "updated": "2012-09-12T17:20:37Z",
    "user_id": "fake"
  }
}
```

1.2.6.8 Resize server

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/action	Resizes the specified server. Specify the resize action in the request body.

Normal response codes: 202



Caution

- To confirm changes, execute "Confirm resized server" after changes are completed.
 1. Check that the server status is VERIFY_RESIZE.
 2. Execute "Confirm resized server".

Refer to "[Get server details](#) on page 22" for details on the API for checking the server status. Refer to "[Confirm resized server](#) on page 31" for details on how to confirm a resize action.

- If retrieval of metadata fails, the initial user password may be locked.

By configuring the setting below, the password will no longer be locked from the next restart.

- Deploy the cloud-init configuration file.

```
# cat << EOF > /etc/cloud/cloud.cfg.d/datasource.cfg
datasource_list: ['OpenStack']
EOF
```

Request

This table shows the URI parameters for the resize server request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server.

This table shows the body parameters for the resize server request:

Name	Type	Description
flavorRef	string	Reference to the flavor.

Example. Resize server: JSON request

```
{
  "resize": {
    "flavorRef": "2"
  }
}
```

Response

This operation does not return a response body.

1.2.6.9 Confirm resized server

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/action	Confirms a pending resize action. Specify the confirmResize action in the request body.

Normal response codes: 204

Request

This table shows the URI parameters for the confirm resized server request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server.

Example. Confirm resized server: JSON request

```
{
  "confirmResize": null
}
```

Response

This operation does not return a response body.

1.2.6.10 Revert resized server

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/action	Cancels and reverts a pending resize action. Specify the revertResize action in the request body.

Normal response codes: 202

Request

This table shows the URI parameters for the revert resized server request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server.

Example. Revert resized server: JSON request

```
{
  "revertResize": null
}
```

```
}
```

Response

This operation does not return a response body.

1.2.6.11 List images details

Method	URI	Description
GET	/v2/{tenant_id}/images/detail{?changes-since,server,name,status,type}	Lists all details for available images.

Normal response codes: 200, 203

Request

This table shows the URI parameters:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.

This table shows the query parameters for the list images details request:

Name	Type	Description
changes-since	DateTime (Optional)	A time/date stamp for when the image last changed status.
server	AnyURI (Optional)	Name of the server in URL format.
name	String (Optional)	Name of the image as a string.
status	Image Status (Optional)	Value of the status of the image so that you can filter on "ACTIVE" for example.
type	String (Optional)	Value of the type of image, such as BASE, SERVER, or ALL. Possible values: BASE, SERVER, ALL. Default: ALL.

Response

Example. List images details: JSON response

```
{
  "images": [
    {
      "created": "2011-01-01T01:02:03Z",
      "id": "70a599e0-31e7-49b7-b260-868f441e862b",
```

```

    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
        "rel": "bookmark"
      },
      {
        "href": "http://glance.openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
        "rel": "alternate",
        "type": "application/vnd.openstack.image"
      }
    ],
    "metadata": {
      "architecture": "x86_64",
      "auto_disk_config": "True",
      "kernel_id": "nokernel",
      "ramdisk_id": "nokernel"
    },
    "minDisk": 0,
    "minRam": 0,
    "name": "fakeimage7",
    "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  },
  {
    "created": "2011-01-01T01:02:03Z",
    "id": "155d900f-4e14-4e4c-a73d-069cbf4541e6",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/
images/155d900f-4e14-4e4c-a73d-069cbf4541e6",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/
images/155d900f-4e14-4e4c-a73d-069cbf4541e6",
        "rel": "bookmark"
      },
      {
        "href": "http://glance.openstack.example.com/openstack/
images/155d900f-4e14-4e4c-a73d-069cbf4541e6",
        "rel": "alternate",
        "type": "application/vnd.openstack.image"
      }
    ],
    "metadata": {
      "architecture": "x86_64",
      "kernel_id": "nokernel",
      "ramdisk_id": "nokernel"
    },
    "minDisk": 0,
    "minRam": 0,
    "name": "fakeimage123456",
    "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  },
  {
    "created": "2011-01-01T01:02:03Z",
    "id": "a2459075-d96c-40d5-893e-577ff92e721c",
    "links": [

```

```

    {
      "href": "http://openstack.example.com/v2/openstack/images/a2459075-
d96c-40d5-893e-577ff92e721c",
      "rel": "self"
    },
    {
      "href": "http://openstack.example.com/openstack/images/a2459075-
d96c-40d5-893e-577ff92e721c",
      "rel": "bookmark"
    },
    {
      "href": "http://glance.openstack.example.com/openstack/images/a2459075-
d96c-40d5-893e-577ff92e721c",
      "rel": "alternate",
      "type": "application/vnd.openstack.image"
    }
  ],
  "metadata": {
    "kernel_id": "nokernel",
    "ramdisk_id": "nokernel"
  },
  "minDisk": 0,
  "minRam": 0,
  "name": "fakeimage123456",
  "progress": 100,
  "status": "ACTIVE",
  "updated": "2011-01-01T01:02:03Z"
},
{
  "created": "2011-01-01T01:02:03Z",
  "id": "a440c04b-79fa-479c-bed1-0b816eae379",
  "links": [
    {
      "href": "http://openstack.example.com/v2/openstack/images/
a440c04b-79fa-479c-bed1-0b816eae379",
      "rel": "self"
    },
    {
      "href": "http://openstack.example.com/openstack/images/
a440c04b-79fa-479c-bed1-0b816eae379",
      "rel": "bookmark"
    },
    {
      "href": "http://glance.openstack.example.com/openstack/images/
a440c04b-79fa-479c-bed1-0b816eae379",
      "rel": "alternate",
      "type": "application/vnd.openstack.image"
    }
  ],
  "metadata": {
    "architecture": "x86_64",
    "auto_disk_config": "False",
    "kernel_id": "nokernel",
    "ramdisk_id": "nokernel"
  },
  "minDisk": 0,
  "minRam": 0,
  "name": "fakeimage6",
  "progress": 100,
  "status": "ACTIVE",
  "updated": "2011-01-01T01:02:03Z"
},
{
  "created": "2011-01-01T01:02:03Z",
  "id": "c905cedb-7281-47e4-8a62-f26bc5fc4c77",
  "links": [
    {

```

```

    "href": "http://openstack.example.com/v2/openstack/images/
c905cedb-7281-47e4-8a62-f26bc5fc4c77",
    "rel": "self"
  },
  {
    "href": "http://openstack.example.com/openstack/images/
c905cedb-7281-47e4-8a62-f26bc5fc4c77",
    "rel": "bookmark"
  },
  {
    "href": "http://glance.openstack.example.com/openstack/images/
c905cedb-7281-47e4-8a62-f26bc5fc4c77",
    "rel": "alternate",
    "type": "application/vnd.openstack.image"
  }
],
"metadata": {
  "kernel_id": "155d900f-4e14-4e4c-a73d-069cbf4541e6",
  "ramdisk_id": null
},
"minDisk": 0,
"minRam": 0,
"name": "fakeimage123456",
"progress": 100,
"status": "ACTIVE",
"updated": "2011-01-01T01:02:03Z"
},
{
  "created": "2011-01-01T01:02:03Z",
  "id": "cedef40a-ed67-4d10-800e-17455edce175",
  "links": [
    {
      "href": "http://openstack.example.com/v2/openstack/images/cedef40a-
ed67-4d10-800e-17455edce175",
      "rel": "self"
    },
    {
      "href": "http://openstack.example.com/openstack/images/cedef40a-
ed67-4d10-800e-17455edce175",
      "rel": "bookmark"
    },
    {
      "href": "http://glance.openstack.example.com/openstack/images/cedef40a-
ed67-4d10-800e-17455edce175",
      "rel": "alternate",
      "type": "application/vnd.openstack.image"
    }
  ],
  "metadata": {
    "kernel_id": "nokernel",
    "ramdisk_id": "nokernel"
  },
  "minDisk": 0,
  "minRam": 0,
  "name": "fakeimage123456",
  "progress": 100,
  "status": "ACTIVE",
  "updated": "2011-01-01T01:02:03Z"
},
{
  "created": "2011-01-01T01:02:03Z",
  "id": "76fa36fc-c930-4bf3-8c8a-ea2a2420deb6",
  "links": [
    {
      "href": "http://openstack.example.com/v2/openstack/images/76fa36fc-
c930-4bf3-8c8a-ea2a2420deb6",
      "rel": "self"
    }
  ],

```

```

    {
      "href": "http://openstack.example.com/openstack/images/76fa36fc-
c930-4bf3-8c8a-ea2a2420deb6",
      "rel": "bookmark"
    },
    {
      "href": "http://glance.openstack.example.com/openstack/images/76fa36fc-
c930-4bf3-8c8a-ea2a2420deb6",
      "rel": "alternate",
      "type": "application/vnd.openstack.image"
    }
  ],
  "metadata": {
    "kernel_id": "nokernel",
    "ramdisk_id": "nokernel"
  },
  "minDisk": 0,
  "minRam": 0,
  "name": "fakeimage123456",
  "progress": 100,
  "status": "ACTIVE",
  "updated": "2011-01-01T01:02:03Z"
}
]
}

```

1.2.6.12 Get image details

Method	URI	Description
GET	/v2/{tenant_id}/images/{image_id}	Gets details for a specified image.

Normal response codes: 200, 203

Request

This table shows the URI parameters for the get image details request:

Name	Type	Description
{image_id}	UUID	The UUID for the image.
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.

This operation does not require a request body.

Response

Example. Get image details: JSON response

```

{
  "image": {
    "created": "2011-01-01T01:02:03Z",
    "id": "70a599e0-31e7-49b7-b260-868f441e862b",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
        "rel": "self"
      },
      {

```

```

    "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
    "rel": "bookmark"
  },
  {
    "href": "http://glance.openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
    "rel": "alternate",
    "type": "application/vnd.openstack.image"
  }
],
"metadata": {
  "architecture": "x86_64",
  "auto_disk_config": "True",
  "kernel_id": "nokernel",
  "ramdisk_id": "nokernel"
},
"minDisk": 0,
"minRam": 0,
"name": "fakeimage7",
"progress": 100,
"status": "ACTIVE",
"updated": "2011-01-01T01:02:03Z"
}
}

```

1.2.6.13 Delete image

Method	URI	Description
DELETE	/v2/{tenant_id}/images/{image_id}	Deletes a specified image.

Normal response codes: 204



Caution

If the password of the user who registered (imported) the image was changed, image deletion will fail. In such a case, convey the image UUID to the operator and request deletion of the image.

Request

This table shows the URI parameters for the delete image request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{image_id}	UUID	The UUID for the image.

This operation does not accept a request body and does not return a response body.

1.2.6.14 Show image metadata

Method	URI	Description
GET	/v2/{tenant_id}/images/{image_id}/ metadata	Shows metadata for a specified image.

Normal response codes: 200, 203

Request

This table shows the URI parameters for the show image metadata request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{image_id}	UUID	The UUID for the image.

This operation does not require a request body.

Response

Example. Show image metadata: JSON response

```
{
  "metadata": {
    "architecture": "x86_64",
    "auto_disk_config": "True",
    "kernel_id": "nokernel",
    "ramdisk_id": "nokernel"
  }
}
```

1.2.6.15 Create or replace image metadata

Method	URI	Description
PUT	/v2/{tenant_id}/images/{image_id}/metadata	Creates or replaces metadata for a specified image.

Replaces items that match the specified keys. If you omit a key that already exists, this key retains its value.

If the number of metadata items exceeds the quota for metadata items, an overLimit (413) fault might be thrown.

Normal response codes: 200



Caution Metadata cannot be changed for images that do not have a checksum set. Refer to ["Update image" on page 205](#) for details on how to change the metadata for images that do not have a checksum set.

Request

This table shows the URI parameters for the create or replace image metadata request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{image_id}	UUID	The UUID for the image.

Example. Create or replace image metadata: JSON request

```
{
  "metadata": {
```

```
"auto_disk_config": "True",
"label": "Changed"
}
```

Response

Example. Create or replace image metadata: JSON response

```
{
  "metadata": {
    "label": "Changed",
    "auto_disk_config": "True"
  }
}
```

1.2.6.16 Update image metadata items

Method	URI	Description
POST	/v2/{tenant_id}/images/{image_id}/metadata	Updates the metadata items (identified by key) of the specified image.

Replaces items that match the specified keys and does not modify items not specified in the request.

An overLimit (413) fault might be thrown if the operation causes the quota for metadata items to be exceeded.

Normal response codes: 200



Metadata cannot be set for images that do not have a checksum set. Refer to "[Update image](#) on page 205" for details on how to set the metadata for images that do not have a checksum set.

Request

This table shows the URI parameters for the update image metadata items request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{image_id}	UUID	The UUID for the image.

This table shows the body parameters for the update image metadata items request:

Name	Type	Description
metadata	hash	Set of key/value pairs. These pairs replace any existing key/value pairs in the resources metadata with matching keys. Key/value pairs in the parameter with keys that do not occur in the existing resource metadata are added to the resources metadata.

Example. Update image metadata items: JSON request

```
{
  "metadata": {
    "kernel_id": "False",
    "Label": "UpdatedImage"
  }
}
```

Response

Example. Update image metadata items: JSON response

```
{
  "metadata": {
    "Label": "UpdatedImage",
    "architecture": "x86_64",
    "auto_disk_config": "True",
    "kernel_id": "False",
    "ramdisk_id": "nokernel"
  }
}
```

1.2.6.17 Show image metadata item details

Method	URI	Description
GET	/v2/{tenant_id}/images/{image_id}/metadata/{key}	Shows details for a metadata item by key for a specified image.

Normal response codes: 200, 203

Request

This table shows the URI parameters for the show image metadata item details request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{image_id}	UUID	The UUID for the image.
{key}	Image Metadata Key	A string. Maximum length is 255 characters.

This operation does not require a request body.

Response

Example. Show image metadata item details: JSON response

```
{
  "meta": {
    "architecture": "x86_64",
    "auto_disk_config": "True",
```

```
"kernel_id": "nokernel",
"ramdisk_id": "nokernel"
}
}
```

1.2.6.18 Create or update image metadata item

Method	URI	Description
PUT	/v2/{tenant_id}/images/{image_id}/metadata/{key}	Creates or updates the metadata items (identified by key) of the specified image.

An overLimit (413) fault might be thrown if the operation causes the quota for metadata items to be exceeded.

Normal response codes: 200



Caution Metadata cannot be changed for images that do not have a checksum set. Refer to ["Update image" on page 205](#) for details on how to change the metadata for images that do not have a checksum set.

Request

This table shows the URI parameters for the create or update image metadata item

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{image_id}	UUID	The UUID for the image.
{key}	Image Metadata Key	A string. Maximum length is 255 characters.

Example. Create or update image metadata item: JSON request

```
{
  "meta": {
    "auto_disk_config": "True",
    "Label": "Changed"
  }
}
```

Response

Example. Create or update image metadata item: JSON response

```
{
  "meta": {
    "Label": "Changed",
    "auto_disk_config": "True"
  }
}
```

1.2.6.19 Delete image metadata item

Method	URI	Description
DELETE	/v2/{tenant_id}/images/{image_id}/metadata/{key}	Deletes a metadata item by key for a specified image.

Normal response codes: 204

Request

This table shows the URI parameters for the delete image metadata item request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{image_id}	UUID	The UUID for the image.
{key}	Image Metadata Key	A string. Maximum length is 255 characters.

This operation does not accept a request body and does not return a response body.

1.2.6.20 Create server with scheduler hints

Method	URI	Description
POST	/v2/{tenant_id}/servers	Creates a server with scheduler hints that are passed directly to the scheduler.

Normal response codes: 202



Caution

- When an instance created using a Linux image is started or restarted, the sshd settings are initialized, and it may no longer be possible to log in to the instance. Refer to ["Reboot server" on page 27](#) for details on the required tasks.
- When the password of the user who registered (imported) the image is changed, the image can no longer be used. In such a case, convey either of the following to the operator and request a change of image.
 - The location of the image following the change of image UUID and user authentication information
 - The image UUID that was registered (imported) following the change of image UUID and user authentication information
- If the following message is displayed after instance creation as a "message" for the instance whose "status" is "ERROR" or "fault", please re-create an instance according to the procedure described in ["Create server" on page 16](#).

"Block Device Mapping is Invalid: Volume <Volume uuid> did not finish being created even after we waited <Elapsed time (seconds)> seconds or <Volume status confirmation frequency> attempts."

Request

This table shows the URI parameters for the create server with scheduler hints request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This table shows the body parameters for the create server with scheduler hints request:

Name	Type	Description
security_group	string (Optional)	One or more security_group objects. Specify the name of the security group in the name attribute. If you omit this attribute, the server is created in the default security group. Specify a security group for which TCP communication is permitted for the following IP address and port number. IP address: 169.254.169.254 Port number: 80 If TCP communication is not permitted, the host name (computer name) and administrator password may not be set when creating an instance.
user_data	string (Optional)	Configuration information or scripts to use upon launch. Must be Base64 encoded. The main formats that are supported are as follows: - Linux: - Shell script (begins with #!) - Windows: - PowerShell (begins with #ps1_sysnative or #ps1_x86) - Windows batch (begins with rem cmd) If Linux, cloud-config files can also be specified, but since verification has not been completed, we recommend using Shell scripts.
availability_zone	string (Optional)	The availability zone in which to launch the server.
server	ServerForCreate	server.
imageRef	string	The image reference for the desired image for your server instance. Specify as an ID or full URL.
flavorRef	string	The flavor reference for the desired flavor for your server instance. Specify as an ID or full URL.
key_name	string	Assigns the public key of the named keypair to the server.

Name	Type	Description
	(Optional)	
networks	string (Optional)	A networks object. By default, the server instance is provisioned with all isolated networks for the tenant. Optionally, you can create one or more NICs on the server. To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object. To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. You can specify multiple NICs on the server. Ensure that the network is specified. To set the following information for a virtual server, a virtual router must be connected to the network that the virtual server will be connected to. • Host name (computer name) • Administrator password • Authentication key (key pair)
uuid	string (Optional)	To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object. Required if you omit the port attribute. If the network includes multiple subnets, IP addresses will be allocated from any subnet. To allocate an IP address of a specific subnet, create a port in advance, and specify the uuid of that port in port.
port	string (Optional)	To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. Required if you omit the uuid attribute.
fixed_ip	string (Optional)	A fixed IPv4 address for the NIC. Valid with a neutron or nova-networks network.
name	string (Optional)	The server name. This information is also used as the computer name/host name. If 64 characters or more are specified: • Windows: The computer name is the default name set by Windows. • Linux: The host name will be "host-fixedIpAddressOfEth0".

Name	Type	Description
		The string set for the computer name/host name is changed as follows: • Spaces () and underscores (_) are replaced with hyphens (-) • Uppercase letters are replaced with lowercase letters • Symbols other than periods (.) and hyphens (-) are removed • Periods (.) are removed from the beginning and end of the string, and strings consisting of hyphens (-) are removed • In Windows, if the string contains a period (.) anywhere other than at the beginning or end, then the characters preceding the period (.) will be used for the name.
metadata	string (Optional)	Metadata key and value pairs. The maximum size of the metadata key and value is 255 bytes each. • Windows: To specify a password of an instance, specify the "admin_pass" key. The specified password will be set for users specified in cloudbase-init. Check with the image provider regarding users who are specified for cloudbase-init. Example setting: "metadata": {"admin_pass": "passwordSetForInstance"} • To use the automatic failover feature, specify "fcx.autofailover": "true". However, instances that satisfy the following conditions are excluded from recovery by the operator. Users must either re-create such instances, or delete them. • "fcx.autofailover": "false" has been set, or, • the instance is a target of auto scaling, or, • the status of the instance is ERROR
block_device_mapping_v2	string	Enables booting the server from a volume when additional parameters are given.
device_name	string	Describes a path to the device for the volume you want to use to boot the server. Specify this item in /dev/vd<i>deviceName</i> format. /dev/vd is fixed, and for <i>deviceName</i>, specify characters that are valid as a device name. When creating an instance that is allocated multiple volumes, for the boot volume, specify the character with highest priority among the device names of all volumes. The order of priority is a > b > c > ...

Name	Type	Description
source_type	string	Describes the volume source type for the volume. Choices are "snapshot", "volume", or "image".
destination_type	string	Specifies the connection destination ("volume").
delete_on_termination	bool (Optional)	Specifies whether volumes created during the instance creation will be deleted when the instance is deleted. When "True" is specified, volumes during instance creation will also be deleted when the instance is deleted. When "False" is specified, the volumes created during instance creation will not be deleted when the instance is deleted. If not specified, "False" (do not delete) will be used. The volume where snapshots are collected will not be deleted even if "True" is specified.
boot_index	string	Specifies the device start order. Specify sequential values, starting from 0. For the boot disk, specify "0".
config_drive	String (Optional)	Only "false" can be specified.
uuid	uuid	Specifies the UUID of the resource specified for source_type.
volume_size	string	Specify the volume size in GB. This item must be specified when "image" is specified for source_type. Specify a value equal to or higher than the min_disk parameter of the image to be used. If the min_disk parameter of the image to be used has not been specified or is "0", check the minimum size with the image provider and specify the value accordingly. If "volume" was specified for source_type, this item will be ignored even if a value is specified. If "snapshot" was specified for source_type, and this item is omitted, the volume size of the snapshot collection source will be used.
os:scheduler_hints	dict	Dictionary of data to send to the scheduler. When trying to create an instance with the server group UUID of "anti-affinity" but there is no VM host where it can be created, its status becomes ERROR after the creation request is received. If using the dedicated instance feature, specify "fcx.dedicated": "true". This will be ignored if the request body does not specify the correct hierarchy (that is, the same hierarchy as the server).

Example. Create server with scheduler hints: JSON request

```
{
  "server": {
    "name": "new-server-test",
    "imageRef": "70a599e0-31e7-49b7-b260-868f441e862b",
    "flavorRef": "1",
    "key_name": "keypair1"
  },
  "os:scheduler_hints": {
    "group": "2b7c42eb-7736-4a0f-afab-f23969a35ada"
  }
}
```

Response

Example. Create server with scheduler hints: JSON response

```
{
  "server": {
    "adminPass": "yjzytFHB7XHc",
    "id": "f8f4f3ce-f6e0-4e05-8f79-bf984fdfce45",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/servers/f8f4f3ce-f6e0-4e05-8f79-bf984fdfce45",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/servers/f8f4f3ce-f6e0-4e05-8f79-bf984fdfce45",
        "rel": "bookmark"
      }
    ]
  }
}
```

1.2.6.21 Create multiple servers

Method	URI	Description
POST	/v2/{tenant_id}/servers	Creates one or more servers with an optional reservation ID.

Normal response codes: 202



Caution

- When an instance created using a Linux image is started or restarted, the sshd settings are initialized, and it may no longer be possible to log in to the instance. Refer to ["Reboot server" on page 27](#) for details on the required tasks.
- When the password of the user who registered (imported) the image is changed, the image can no longer be used. In such a case, convey either of the following to the operator and request a change of image.
 - The location of the image following the change of image UUID and user authentication information
 - The image UUID that was registered (imported) following the change of image UUID and user authentication information

- If the following message is displayed after instance creation as a "message" for the instance whose "status" is "ERROR" or "fault", please re-create an instance according to the procedure described in "[Create server](#)" on page 16".

"Block Device Mapping is Invalid: Volume <Volume uuid> did not finish being created even after we waited <Elapsed time (seconds)> seconds or <Volume status confirmation frequency> attempts."

Request

This table shows the URI parameters for the create multiple servers request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This table shows the request body parameters for the create multiple servers request:

Name	Type	Description
security_group	string (Optional)	One or more security_group objects. Specify the name of the security group in the name attribute. If you omit this attribute, the server is created in the default security group. Specify a security group for which TCP communication is permitted for the following IP address and port number. IP address: 169.254.169.254 Port number: 80 If TCP communication is not permitted, the host name (computer name) and administrator password may not be set when creating an instance.
user_data	string (Optional)	Configuration information or scripts to use upon launch. Must be Base64 encoded. The main formats that are supported are as follows: • Linux: • Shell script (begins with #!) • Windows: • PowerShell (begins with #ps1_sysnative or #ps1_x86) • Windows batch (begins with rem cmd) If Linux, cloud-config files can also be specified, but since verification has not been completed, we recommend using Shell scripts.
availability_zone	string (Optional)	The availability zone in which to launch the server.
server	ServerForCreate	server.

Name	Type	Description
imageRef	string	The image reference for the desired image for your server instance. Specify as an ID or full URL.
flavorRef	string	The flavor reference for the desired flavor for your server instance. Specify as an ID or full URL.
key_name	string (Optional)	Assigns the public key of the named keypair to the server.
networks	string (Optional)	A networks object. By default, the server instance is provisioned with all isolated networks for the tenant. Optionally, you can create one or more NICs on the server. To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object. To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. You can specify multiple NICs on the server. Ensure that the network is specified. To set the following information for a virtual server, a virtual router must be connected to the network that the virtual server will be connected to. • Host name (computer name) • Administrator password • Authentication key (key pair)
uuid	string (Optional)	To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object. Required if you omit the port attribute. If the network includes multiple subnets, IP addresses will be allocated from any subnet. To allocate an IP address of a specific subnet, create a port in advance, and specify the uuid of that port in port.
port	string (Optional)	To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. Required if you omit the uuid attribute.
fixed_ip	string (Optional)	A fixed IPv4 address for the NIC. Valid with a neutron or nova-networks network.
name	string	The server name. This information is also used as the computer name/host name. If 64 characters or more are specified:

Name	Type	Description
		- Windows: The computer name will be the default name set by Windows. - Linux: The host name will be <code>"host-fixedIpAddressOfEth0"</code>. The string set for the computer name/host name is changed as follows: - Spaces () and underscores (_) are replaced with hyphens (-) - Uppercase letters are replaced with lowercase letters - Symbols other than periods (.) and hyphens (-) are removed - Periods (.) are removed from the beginning and end of the string, and strings consisting of hyphens (-) are removed - In Windows, if the string contains a period (.) anywhere other than at the beginning or end, then the characters preceding the period (.) will be used for the name.
metadata	string (Optional)	Metadata key and value pairs. The maximum size of the metadata key and value is 255 bytes each. - Windows: To specify a password of an instance, specify the <code>"admin_pass"</code> key. The specified password will be set for users specified in <code>cloudbase-init</code>. Check with the image provider regarding users who are specified for <code>cloudbase-init</code>. Example setting: <code>"metadata": {"admin_pass": "passwordSetForInstance"}</code> - To use the automatic failover feature, specify <code>"fcx.autofailover": "true"</code>. However, instances that satisfy the following conditions are excluded from recovery by the operator. Users must either re-create such instances, or delete them. <code>"fcx.autofailover": "false"</code> has been set, or, - the instance is a target of auto scaling, or, - the status of the instance is ERROR
block_device_mapping_v2	string	Enables booting the server from a volume when additional parameters are given.
device_name	string	Describes a path to the device for the volume you want to use to boot the server. Specify this item in <code>/dev/vddeviceName</code> format. <code>/dev/vd</code> is fixed, and for <code>deviceName</code>, specify characters that are valid as a device name.

Name	Type	Description
		When creating an instance that is allocated multiple volumes, for the boot volume, specify the character with highest priority among the device names of all volumes. The order of priority is a > b > c > ...
source_type	string	Describes the volume source type for the volume. Choices are "snapshot", "volume", or "image".
destination_type	string	Specifies the connection destination ("volume").
delete_on_termination	bool (Optional)	Specifies whether volumes created during the instance creation will be deleted when the instance is deleted. When "True" is specified, volumes during instance creation will also be deleted when the instance is deleted. When "False" is specified, the volumes created during instance creation will not be deleted when the instance is deleted. If not specified, "False" (do not delete) will be used. The volume where snapshots are collected will not be deleted even if "True" is specified.
boot_index	String	Specifies the device start order. Specify sequential values, starting from 0. For the boot disk, specify "0".
config_drive	String (Optional)	Only "false" can be specified.
uuid	uuid	Specifies the UUID of the resource specified for source_type.
volume_size	String	Specify the volume size in GB. This item must be specified when "image" is specified for source_type. Specify a value equal to or higher than the min_disk parameter of the image to be used. If the min_disk parameter of the image to be used has not been specified or is "0", check the minimum size with the image provider and specify the value accordingly. If "volume" was specified for source_type, this item will be ignored even if a value is specified. If "snapshot" was specified for source_type, and this item is omitted, the volume size of the snapshot collection source will be used.
return_reservation_id	string (Optional)	Set to True to generate a reservation ID for each server. Omit this attribute to create servers without a reservation ID. This extended attribute is enabled when the service provider enables multiple server launch.

Name	Type	Description
min_count	string (Optional)	The minimum number of servers to launch when the service provider enables multiple server launch. An error will occur if unable to create the specified minimum number of servers. If this item is omitted, the 1 will be used
max_count	string (Optional)	The maximum number of servers to launch when the service provider enables multiple server launch. The system will try to create the specified number of servers. If this item is omitted, min_count will be used.

Example. Create multiple servers: JSON request

Creates one or more servers with an optional reservation ID.

```
{
  "server": {
    "name": "new-server-test",
    "imageRef": "9f033140-ea8c-41fe-a432-e832799aa47f",
    "flavorRef": "1",
    "key_name": "keypair1",
    "metadata": {
      "My Server Name": "Apache1"
    },
    "return_reservation_id": true
  }
}
```

Creates one or more servers with an optional min count.

```
{
  "server": {
    "name": "new-server-test",
    "imageRef": "9f033140-ea8c-41fe-a432-e832799aa47f",
    "flavorRef": "08ef25d1-9616-46b6-bad3-3835efccf3a5",
    "metadata": {
      "My Server Name": "Apache1"
    },
    "min_count": 1
  }
}
```

Creates one or more servers with an optional max count.

```
{
  "server": {
    "name": "new-server-test",
    "imageRef": "9f033140-ea8c-41fe-a432-e832799aa47f",
    "flavorRef": "08ef25d1-9616-46b6-bad3-3835efccf3a5",
    "metadata": {
      "My Server Name": "Apache1"
    },
    "max_count": 1
  }
}
```

Response

Example. Create multiple servers: JSON response

```
{
  "server": {
    "adminPass": "wfksH3GTTseP",
    "id": "440cf918-3ee0-4143-b289-f63e1d2000e6",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/servers/440cf918-3ee0-4143-b289-f63e1d2000e6",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/servers/440cf918-3ee0-4143-b289-f63e1d2000e6",
        "rel": "bookmark"
      }
    ]
  }
}
```

Example. Create multiple servers: JSON response

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

1.2.6.22 Show server extended status

Method	URI	Description
GET	/v2/{tenant_id}/servers/{server_id}	Shows the extended status attributes in the response for a specified server.

The extended status attributes are vm_state, power_state, and task_state.

Normal response codes: 200

Request

This table shows the URI parameters for the show server extended status request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.

This operation does not require a request body.

Response

Example. Show server extended status: JSON response

```

{
  "server": {
    "OS-EXT-STS:power_state": 1,
    "OS-EXT-STS:task_state": null,
    "OS-EXT-STS:vm_state": "active",
    "accessIPv4": "",
    "accessIPv6": "",
    "addresses": {
      "private": [
        {
          "addr": "192.168.0.3",
          "version": 4
        }
      ]
    },
    "created": "2013-02-07T19:35:09Z",
    "flavor": {
      "id": "1",
      "links": [
        {
          "href": "http://openstack.example.com/openstack/flavors/1",
          "rel": "bookmark"
        }
      ]
    },
    "hostId": "570eff4776ab310707d11d181037337197086998a8b3305c90bf87c8",
    "id": "ecb5e433-fa75-4db2-af3d-a29ae8618edc",
    "image": {
      "id": "70a599e0-31e7-49b7-b260-868f441e862b",
      "links": [
        {
          "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
          "rel": "bookmark"
        }
      ]
    },
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/servers/ecb5e433-
fa75-4db2-af3d-a29ae8618edc",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/servers/ecb5e433-
fa75-4db2-af3d-a29ae8618edc",
        "rel": "bookmark"
      }
    ],
    "metadata": {
      "My Server Name": "Apache1"
    },
    "name": "new-server-test",
    "progress": 0,
    "status": "ACTIVE",
    "tenant_id": "openstack",
    "updated": "2013-02-07T19:35:10Z",
    "user_id": "fake"
  }
}

```

1.2.6.23 List extended status for servers

Method	URI	Description
GET	/v2/{tenant_id}/servers/detail	Lists the extended status attributes in the detailed response for all servers.

The extended status attributes are vm_state, power_state, and task_state.

Normal response codes: 200

Request

This table shows the URI parameters for the list extended status for servers request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This operation does not require a request body.

Response

Example. List extended status for servers: JSON response

```
{
  "servers": [
    {
      "OS-EXT-STS:power_state": 1,
      "OS-EXT-STS:task_state": null,
      "OS-EXT-STS:vm_state": "active",
      "accessIPv4": "",
      "accessIPv6": "",
      "addresses": {
        "private": [
          {
            "addr": "192.168.0.3",
            "version": 4
          }
        ]
      },
      "created": "2012-12-05T07:34:10Z",
      "flavor": {
        "id": "1",
        "links": [
          {
            "href": "http://openstack.example.com/openstack/flavors/1",
            "rel": "bookmark"
          }
        ]
      },
      "hostId":
      "585aa01f94eca692eff9f77ffe3eab866d8a819e97397e28c5c7df12",
      "id": "030758aa-5c41-41c6-8fb4-29d44eb96a85",
      "image": {
        "id": "70a599e0-31e7-49b7-b260-868f441e862b",
        "links": [
          {
            "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
            "rel": "bookmark"
          }
        ]
      }
    }
  ]
}
```

```

    ],
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/
servers/030758aa-5c41-41c6-8fb4-29d44eb96a85",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/
servers/030758aa-5c41-41c6-8fb4-29d44eb96a85",
        "rel": "bookmark"
      }
    ],
    "metadata": {
      "My Server Name": "Apache1"
    },
    "name": "new-server-test",
    "progress": 0,
    "status": "ACTIVE",
    "tenant_id": "openstack",
    "updated": "2012-12-05T07:34:10Z",
    "user_id": "fake"
  }
]
}

```

1.2.6.24 List servers with extended server attributes

Method	URI	Description
GET	/v2/{tenant_id}/servers	Lists detailed extended server attribute information for all servers.

Normal response codes: 200

Request

This table shows the URI parameters for the request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.

This operation does not require a request body.

Response

Example. List servers with extended server attributes: JSON 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"
},
{
    "id": "c7eae895-2b11-4d01-ad89-b729835e743d",
    "links": [
        {
            "href": "http://openstack.example.com/v2/openstack/servers/
c7eae895-2b11-4d01-ad89-b729835e743d",
            "rel": "self"
        },
        {
            "href": "http://openstack.example.com/openstack/servers/
c7eae895-2b11-4d01-ad89-b729835e743d",
            "rel": "bookmark"
        }
    ],
    "name": "new-server-test2"
}
]
}

```

1.2.6.25 Show extended server attributes

Method	URI	Description
GET	/v2/{tenant_id}/servers/{server_id}	Shows extended server attributes for a specified server.

Normal response codes: 200

Request

This table shows the URI parameters for the show extended server attributes request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.

This operation does not require a request body.

Response

Example. Show extended server attributes: JSON response

```

{
  "server": {
    "OS-EXT-SRV-ATTR:host": "1169a68456af48238da47b1d5957a714",
    "OS-EXT-SRV-ATTR:hypervisor_hostname": "fake-mini",
    "OS-EXT-SRV-ATTR:instance_name": "instance-00000001",
    "accessIPv4": "",
    "accessIPv6": "",
    "addresses": {
      "private": [
        {
          "addr": "192.168.0.3",

```

```

    "version": 4
  }
],
},
"created": "2012-11-15T19:27:04Z",
"flavor": {
  "id": "1",
  "links": [
    {
      "href": "http://openstack.example.com/openstack/flavors/1",
      "rel": "bookmark"
    }
  ]
},
"hostId": "2dfce43c41dd288cfac3a5b4251742b3bd2b37c12eb5927e757d9b4c",
"id": "1fc2392e-5727-46af-bc21-317a4a3eb04c",
"image": {
  "id": "70a599e0-31e7-49b7-b260-868f441e862b",
  "links": [
    {
      "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
      "rel": "bookmark"
    }
  ]
},
"links": [
  {
    "href": "http://openstack.example.com/v2/openstack/
servers/1fc2392e-5727-46af-bc21-317a4a3eb04c",
    "rel": "self"
  },
  {
    "href": "http://openstack.example.com/openstack/
servers/1fc2392e-5727-46af-bc21-317a4a3eb04c",
    "rel": "bookmark"
  }
],
"metadata": {
  "My Server Name": "Apache1"
},
"name": "new-server-test",
"progress": 0,
"status": "ACTIVE",
"tenant_id": "openstack",
"updated": "2012-11-15T19:27:04Z",
"user_id": "fake"
}
}

```

1.2.6.26 List servers with IP type

Method	URI	Description
GET	/v2/{tenant_id}/servers/detail	Lists all servers showing their IPs by type, either fixed or floating.

Normal response codes: 200

Request

This table shows the URI parameters for the list servers with ip type request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This operation does not require a request body.

Response

Example. List servers with IP type: JSON response

```
{
  "servers": [
    {
      "accessIPv4": "",
      "accessIPv6": "",
      "addresses": {
        "private": [
          {
            "OS-EXT-IPS:type": "fixed",
            "addr": "192.168.0.3",
            "version": 4
          }
        ]
      },
      "created": "2013-02-07T18:40:59Z",
      "flavor": {
        "id": "1",
        "links": [
          {
            "href": "http://openstack.example.com/openstack/flavors/1",
            "rel": "bookmark"
          }
        ]
      },
      "hostId":
      "fe866a4962fe3bdb6c2db9c8f7dcdb9555aca73387e72b5cb9c45bd3",
      "id": "76908712-653a-4d16-807e-d89d41435d24",
      "image": {
        "id": "70a599e0-31e7-49b7-b260-868f441e862b",
        "links": [
          {
            "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
            "rel": "bookmark"
          }
        ]
      },
      "links": [
        {
          "href": "http://openstack.example.com/v2/openstack/
servers/76908712-653a-4d16-807e-d89d41435d24",
          "rel": "self"
        },
        {
          "href": "http://openstack.example.com/openstack/
servers/76908712-653a-4d16-807e-d89d41435d24",
          "rel": "bookmark"
        }
      ],
      "metadata": {
        "My Server Name": "Apache1"
      },
      "name": "new-server-test",
      "progress": 0,
      "status": "ACTIVE",
    }
  ]
}
```

```

    "tenant_id": "openstack",
    "updated": "2013-02-07T18:40:59Z",
    "user_id": "fake"
  }
]
}

```

1.2.6.27 Create server

Method	URI	Description
POST	/v2/{tenant_id}/servers	Creates a server.

Normal response codes: 202



Caution

- When an instance created using a Linux image is started or restarted, the sshd settings are initialized, and it may no longer be possible to log in to the instance. Refer to ["Reboot server" on page 27](#) for details on the required tasks.
- When the password of the user who registered (imported) the image is changed, the image can no longer be used. In such a case, convey either of the following to the operator and request a change of image.
 - The location of the image following the change of image UUID and user authentication information
 - The image UUID that was registered (imported) following the change of image UUID and user authentication information
- If the following message is displayed after instance creation as a "message" for the instance whose "status" is "ERROR" or "fault", please re-create an instance according to the procedure described in ["Create server" on page 16](#).
 "Block Device Mapping is Invalid: Volume <Volume uuid> did not finish being created even after we waited <Elapsed time (seconds)> seconds or <Volume status confirmation frequency> attempts."

Request

This table shows the URI parameters for the create server request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This table shows the body parameters for the create server request:

Name	Type	Description
security_group	string (Optional)	One or more security_group objects. Specify the name of the security group in the name attribute. If you omit this attribute, the server is created in the default security group. Specify a security group for which TCP communication is permitted for the following IP address and port number. IP address: 169.254.169.254

Name	Type	Description
		Port number: 80 If TCP communication is not permitted, the host name (computer name) and administrator password may not be set when creating an instance.
user_data	string (Optional)	Configuration information or scripts to use upon launch. Must be Base64 encoded. The main formats that are supported are as follows: - Linux: - Shell script (begins with #!) - Windows: - PowerShell (begins with #ps1_sysnative or #ps1_x86) - Windows batch (begins with rem cmd) If Linux, cloud-config files can also be specified, but since verification has not been completed, we recommend using Shell scripts.
availability_zone	string (Optional)	The availability zone in which to launch the server.
server	ServerForCreate	server.
imageRef	string	The image reference for the desired image for your server instance. Specify as an ID or full URL.
flavorRef	string	The flavor reference for the desired flavor for your server instance. Specify as an ID or full URL.
key_name	string (Optional)	Assigns the public key of the named keypair to the server.
networks	string (Optional)	A networks object. By default, the server instance is provisioned with all isolated networks for the tenant. Optionally, you can create one or more NICs on the server. To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object. To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. You can specify multiple NICs on the server. Ensure that the network is specified. To set the following information for a virtual server, a virtual router must be connected to the

Name	Type	Description
		network that the virtual server will be connected to. • Host name (computer name) • Administrator password • Authentication key (key pair)
uuid	string (Optional)	To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object. Required if you omit the port attribute. If the network includes multiple subnets, IP addresses will be allocated from any subnet. To allocate an IP address of a specific subnet, create a port in advance, and specify the uuid of that port in port.
port	string (Optional)	To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. Required if you omit the uuid attribute.
fixed_ip	string (Optional)	A fixed IPv4 address for the NIC. Valid with a neutron or nova-networks network.
name	string	The server name. This information is also used as the computer name/host name. If 64 characters or more are specified: • Windows: The computer name is the default name set by Windows. • Linux: The host name will be "host-fixedIpAddressOfEth0". The string set for the computer name/host name is changed as follows: • Spaces () and underscores () are replaced with hyphens (-) • Uppercase letters are replaced with lowercase letters • Symbols other than periods (.) and hyphens (-) are removed • Periods (.) are removed from the beginning and end of the string, and strings consisting of hyphens (-) are removed • In Windows, if the string contains a period (.) anywhere other than at the beginning or end, then the characters preceding the period (.) will be used for the name.
metadata	string (Optional)	Metadata key and value pairs. The maximum size of the metadata key and value is 255 bytes each.

Name	Type	Description
		- Windows: To specify a password of an instance, specify the "admin_pass" key. The specified password will be set for users specified in cloudbase-init. Check with the image provider regarding users who are specified for cloudbase-init. Example setting: "metadata": {"admin_pass": "passwordSetForInstance"} - To use the automatic failover feature, specify "fcx.autofailover": "true". However, instances that satisfy the following conditions are excluded from recovery by the operator. Users must either re-create such instances, or delete them. "fcx.autofailover": "false" has been set, or, - the instance is a target of auto scaling, or, - the status of the instance is ERROR
block_device_mapping_v2	string	Enables booting the server from a volume when additional parameters are given.
device_name	string	Describes a path to the device for the volume you want to use to boot the server. Specify this item in /dev/vd<i>deviceName</i> format. /dev/vd is fixed, and for <i>deviceName</i>, specify characters that are valid as a device name. When creating an instance that is allocated multiple volumes, for the boot volume, specify the character with highest priority among the device names of all volumes. The order of priority is a > b > c > ...
source_type	string	Describes the volume source type for the volume. Choices are "snapshot", "volume", or "image".
destination_type	string	Specifies the connection destination ("volume").
delete_on_termination	bool (Optional)	Specifies whether volumes created during the instance creation will be deleted when the instance is deleted. When "True" is specified, volumes during instance creation will also be deleted when the instance is deleted. When "False" is specified, the volumes created during instance creation will not be deleted when the instance is deleted. If not specified, "False" (do not delete) will be used. The volume where snapshots are collected will not be deleted even if "True" is specified.

Name	Type	Description
boot_index	string	Specifies the device start order. Specify sequential values, starting from 0. For the boot disk, specify "0".
config_drive	String (Optional)	Only "false" can be specified.
uuid	uuid	Specifies the UUID of the resource specified for source_type.
volume_size	string	Specify the volume size in GB. This item must be specified when "image" is specified for source_type. Specify a value equal to or higher than the min_disk parameter of the image to be used. If the min_disk parameter of the image to be used has not been specified or is "0", check the minimum size with the image provider and specify the value accordingly. If "volume" was specified for source_type, this item will be ignored even if a value is specified. If "snapshot" was specified for source_type, and this item is omitted, the volume size of the snapshot collection source will be used.

Example. Create server: JSON request

```
{
  "server": {
    "name": "new-server-test",
    "imageRef": "b5660a6e-4b46-4be3-9707-6b47221b454f",
    "flavorRef": "2",
    "key_name": "keypair1",
    "metadata": {
      "My Server Name": "Apache1"
    }
  }
}
```

Response

Example. Create server: JSON response

```
{
  "server": {
    "OS-DCF:diskConfig": "AUTO",
    "adminPass": "CQH9gWzgkVno",
    "id": "324dfb7d-f4a9-419a-9a19-237df04b443b",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/servers/324dfb7d-f4a9-419a-9a19-237df04b443b",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/servers/324dfb7d-f4a9-419a-9a19-237df04b443b",

```

```

    "rel": "bookmark"
  }
]
}
}

```

1.2.6.28 Show server information

Method	URI	Description
GET	/v2/{tenant_id}/servers/{server_id}	Shows information for a specified server.

Normal response codes: 200

Request

This table shows the URI parameters for the show server information request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.

This operation does not require a request body.

Response

Example. Show server information: JSON response

```

{
  "server": {
    "OS-DCF:diskConfig": "AUTO",
    "accessIPv4": "",
    "accessIPv6": "",
    "addresses": {
      "private": [
        {
          "addr": "192.168.0.3",
          "version": 4
        }
      ]
    },
    "created": "2012-12-02T02:11:55Z",
    "flavor": {
      "id": "1",
      "links": [
        {
          "href": "http://openstack.example.com/openstack/flavors/1",
          "rel": "bookmark"
        }
      ]
    },
    "hostId": "c949ab4256cea23b6089b710aa2df48bf6577ed915278b62e33ad8bb",
    "id": "5046e2f2-3b33-4041-b3cf-e085f73e78e7",
    "image": {
      "id": "70a599e0-31e7-49b7-b260-868f441e862b",
      "links": [
        {
          "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",

```

```

    "rel": "bookmark"
  }
]
},
"links": [
  {
    "href": "http://openstack.example.com/v2/openstack/servers/5046e2f2-3b33-4041-b3cf-e085f73e78e7",
    "rel": "self"
  },
  {
    "href": "http://openstack.example.com/openstack/servers/5046e2f2-3b33-4041-b3cf-e085f73e78e7",
    "rel": "bookmark"
  }
],
"metadata": {
  "My Server Name": "Apache1"
},
"name": "new-server-test",
"progress": 0,
"status": "ACTIVE",
"tenant_id": "openstack",
"updated": "2012-12-02T02:11:55Z",
"user_id": "fake"
}
}

```

1.2.6.29 List servers

Method	URI	Description
GET	/v2/{tenant_id}/servers/detail	Lists servers.

Normal response codes: 200, 203

Request

This table shows the URI parameters for the list servers request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This operation does not require a request body.

Response

Example. List servers: JSON response

```

{
  "servers": [
    {
      "OS-DCF:diskConfig": "AUTO",
      "accessIPv4": "",
      "accessIPv6": "",
      "addresses": {
        "private": [
          {
            "addr": "192.168.0.3",

```

```

    "version": 4
  }
],
},
"created": "2012-12-02T02:11:55Z",
"flavor": {
  "id": "1",
  "links": [
    {
      "href": "http://openstack.example.com/openstack/
flavors/1",
      "rel": "bookmark"
    }
  ]
},
"hostId":
"99428f32351a5d89d0f7727c6eec68c1777c545a0972aaac645508dc",
"id": "05372e62-05b9-4ee2-9343-9a1fdf2a5fda",
"image": {
  "id": "70a599e0-31e7-49b7-b260-868f441e862b",
  "links": [
    {
      "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
      "rel": "bookmark"
    }
  ]
},
},
"links": [
  {
    "href": "http://openstack.example.com/v2/openstack/
servers/05372e62-05b9-4ee2-9343-9a1fdf2a5fda",
    "rel": "self"
  },
  {
    "href": "http://openstack.example.com/openstack/
servers/05372e62-05b9-4ee2-9343-9a1fdf2a5fda",
    "rel": "bookmark"
  }
],
"metadata": {
  "My Server Name": "Apache1"
},
"name": "new-server-test",
"progress": 0,
"status": "ACTIVE",
"tenant_id": "openstack",
"updated": "2012-12-02T02:11:56Z",
"user_id": "fake"
}
]
}

```

1.2.6.30 Get image information

Method	URI	Description
GET	/v2/{tenant_id}/images/{image_id}	Gets information for a specified image.

Normal response codes: 200

Request

This table shows the URI parameters for the get image information request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{image_id}	String	The UUID for the image of interest to you.

This operation does not require a request body.

Response

Example. Get image information: JSON response

```
{
  "image": {
    "OS-DCF:diskConfig": "AUTO",
    "created": "2011-01-01T01:02:03Z",
    "id": "70a599e0-31e7-49b7-b260-868f441e862b",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
        "rel": "bookmark"
      },
      {
        "href": "http://glance.openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
        "rel": "alternate",
        "type": "application/vnd.openstack.image"
      }
    ],
    "metadata": {
      "architecture": "x86_64",
      "auto_disk_config": "True",
      "kernel_id": "nokernel",
      "ramdisk_id": "nokernel"
    },
    "minDisk": 0,
    "minRam": 0,
    "name": "fakeimage7",
    "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  }
}
```

1.2.6.31 List images

Method	URI	Description
GET	/v2/{tenant_id}/images/detail	Lists images.

Normal response codes: 200

Request

This table shows the URI parameters for the list images request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This operation does not require a request body.

Response

Example. List images: JSON response

```
{
  "images": [
    {
      "OS-DCF:diskConfig": "AUTO", "created": "2011-01-01T01:02:03Z",
      "id": "70a599e0-31e7-49b7-b260-868f441e862b",
      "links": [
        {
          "href": "http://openstack.example.com/v2/openstack/images/70a599e0-31e7-49b7-b260-868f441e862b",
          "rel": "self"
        },
        {
          "href": "http://openstack.example.com/openstack/images/70a599e0-31e7-49b7-b260-868f441e862b",
          "rel": "bookmark"
        },
        {
          "href": "http://glance.openstack.example.com/openstack/images/70a599e0-31e7-49b7-b260-868f441e862b",
          "rel": "alternate",
          "type": "application/vnd.openstack.image"
        }
      ],
      "metadata": {
        "architecture": "x86_64", "auto_disk_config": "True", "kernel_id": "nokernel", "ramdisk_id": "nokernel"
      },
      "minDisk": 0,
      "minRam": 0,
      "name": "fakeimage7", "progress": 100, "status": "ACTIVE",
      "updated": "2011-01-01T01:02:03Z"
    },
    {
      "created": "2011-01-01T01:02:03Z",
      "id": "155d900f-4e14-4e4c-a73d-069cbf4541e6",
      "links": [
        {
          "href": "http://openstack.example.com/v2/openstack/images/155d900f-4e14-4e4c-a73d-069cbf4541e6",
          "rel": "self"
        },
        {
          "href": "http://openstack.example.com/openstack/images/155d900f-4e14-4e4c-a73d-069cbf4541e6",
          "rel": "bookmark"
        },
        {
          "href": "http://glance.openstack.example.com/openstack/images/155d900f-4e14-4e4c-a73d-069cbf4541e6",
          "rel": "alternate",
          "type": "application/vnd.openstack.image"
        }
      ]
    }
  ]
}
```

```

    },
    ],
    "metadata": {
      "architecture": "x86_64", "kernel_id": "nokernel", "ramdisk_id":
"nokernel"
    },
    "minDisk": 0,
    "minRam": 0,
    "name": "fakeimage123456", "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  },
  {
    "created": "2011-01-01T01:02:03Z",
    "id": "a2459075-d96c-40d5-893e-577ff92e721c",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/images/ a2459075-
d96c-40d5-893e-577ff92e721c",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/images/ a2459075-
d96c-40d5-893e-577ff92e721c",
        "rel": "bookmark"
      },
      {
        "href": "http://glance.openstack.example.com/openstack/ images/
a2459075-d96c-40d5-893e-577ff92e721c",
        "rel": "alternate",
        "type": "application/vnd.openstack.image"
      }
    ],
    "metadata": {
      "kernel_id": "nokernel", "ramdisk_id": "nokernel"
    },
    "minDisk": 0,
    "minRam": 0,
    "name": "fakeimage123456",
    "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  },
  {
    "OS-DCF:diskConfig": "MANUAL", "created": "2011-01-01T01:02:03Z",
    "id": "a440c04b-79fa-479c-bed1-0b816eae379", "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/images/
a440c04b-79fa-479c-bed1-0b816eae379",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/images/
a440c04b-79fa-479c-bed1-0b816eae379",
        "rel": "bookmark"
      },
      {
        "href": "http://glance.openstack.example.com/openstack/ images/
a440c04b-79fa-479c-bed1-0b816eae379",
        "rel": "alternate",
        "type": "application/vnd.openstack.image"
      }
    ],
    "metadata": {
      "architecture": "x86_64", "auto_disk_config": "False", "kernel_id":
"nokernel", "ramdisk_id": "nokernel"
    },
    "minDisk": 0,

```

```

    "minRam": 0,
    "name": "fakeimage6", "progress": 100, "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  },
  {
    "created": "2011-01-01T01:02:03Z",
    "id": "c905cedb-7281-47e4-8a62-f26bc5fc4c77", "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/images/
c905cedb-7281-47e4-8a62-f26bc5fc4c77",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/images/
c905cedb-7281-47e4-8a62-f26bc5fc4c77",
        "rel": "bookmark"
      },
      {
        "href": "http://glance.openstack.example.com/openstack/ images/
c905cedb-7281-47e4-8a62-f26bc5fc4c77",
        "rel": "alternate",
        "type": "application/vnd.openstack.image"
      }
    ],
    "metadata": {
      "kernel_id": "155d900f-4e14-4e4c-a73d-069cbf4541e6", "ramdisk_id": null
    },
    "minDisk": 0,
    "minRam": 0,
    "name": "fakeimage123456", "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  },
  {
    "created": "2011-01-01T01:02:03Z",
    "id": "cedef40a-ed67-4d10-800e-17455edce175", "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/images/ cedef40a-
ed67-4d10-800e-17455edce175",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/images/ cedef40a-
ed67-4d10-800e-17455edce175",
        "rel": "bookmark"
      },
      {
        "href": "http://glance.openstack.example.com/openstack/ images/
cedef40a-ed67-4d10-800e-17455edce175",
        "rel": "alternate",
        "type": "application/vnd.openstack.image"
      }
    ],
    "metadata": {
      "kernel_id": "nokernel", "ramdisk_id": "nokernel"
    },
    "minDisk": 0,
    "minRam": 0,
    "name": "fakeimage123456", "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  },
  {
    "created": "2011-01-01T01:02:03Z",
    "id": "76fa36fc-c930-4bf3-8c8a-ea2a2420deb6", "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/images/ 76fa36fc-
c930-4bf3-8c8a-ea2a2420deb6",

```

```

    "rel": "self"
  },
  {
    "href": "http://openstack.example.com/openstack/images/ 76fa36fc-
c930-4bf3-8c8a-ea2a2420deb6",
    "rel": "bookmark"
  },
  {
    "href": "http://glance.openstack.example.com/openstack/ images/76fa36fc-
c930-4bf3-8c8a-ea2a2420deb6",
    "rel": "alternate",
    "type": "application/vnd.openstack.image"
  }
],
"metadata": {
  "kernel_id": "nokernel", "ramdisk_id": "nokernel"
},
"minDisk": 0,
"minRam": 0,
"name": "fakeimage123456", "progress": 100,
"status": "ACTIVE",
"updated": "2011-01-01T01:02:03Z"
}
]
}

```

1.2.6.32 Create server with configuration drive

Method	URI	Description
POST	/v2/{tenant_id}/servers	Creates a server with the configuration drive extended attribute.

Normal response codes: 202



Caution

- When an instance created using a Linux image is started or restarted, the sshd settings are initialized, and it may no longer be possible to log in to the instance. Refer to ["Reboot server" on page 27](#) for details on the required tasks.
- When the password of the user who registered (imported) the image is changed, the image can no longer be used. In such a case, convey either of the following to the operator and request a change of image.
 - The location of the image following the change of image UUID and user authentication information
 - The image UUID that was registered (imported) following the change of image UUID and user authentication information
- If the following message is displayed after instance creation as a "message" for the instance whose "status" is "ERROR" or "fault", please re-create an instance according to the procedure described in ["Create server" on page 16](#).

"Block Device Mapping is Invalid: Volume <Volume uuid> did not finish being created even after we waited <Elapsed time (seconds)> seconds or <Volume status confirmation frequency> attempts."

Request

This table shows the URI parameters for the create server with configuration drive request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This table shows the body parameters for the create server with configuration drive request:

Name	Type	Description
security_group	string (Optional)	One or more security_group objects. Specify the name of the security group in the name attribute. If you omit this attribute, the server is created in the default security group. Specify a security group for which TCP communication is permitted for the following IP address and port number. IP address: 169.254.169.254 Port number: 80 If TCP communication is not permitted, the host name (computer name) and administrator password may not be set when creating an instance.
user_data	string (Optional)	Configuration information or scripts to use upon launch. Must be Base64 encoded. The main formats that are supported are as follows: - Linux: - Shell script (begins with #!) - Windows: - PowerShell (begins with #ps1_sysnative or #ps1_x86) - Windows batch (begins with rem cmd) If Linux, cloud-config files can also be specified, but since verification has not been completed, we recommend using Shell scripts.
availability_zone	string (Optional)	The availability zone in which to launch the server.
server	ServerForCreate	server.
imageRef	string	The image reference for the desired image for your server instance. Specify as an ID or full URL.
flavorRef	string	The flavor reference for the desired flavor for your server instance. Specify as an ID or full URL.
key_name	string (Optional)	Assigns the public key of the named keypair to the server.

Name	Type	Description
networks	string (Optional)	A networks object. By default, the server instance is provisioned with all isolated networks for the tenant. Optionally, you can create one or more NICs on the server. To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object. To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. You can specify multiple NICs on the server. Ensure that the network is specified. To set the following information for a virtual server, a virtual router must be connected to the network that the virtual server will be connected to. • Host name (computer name) • Administrator password • Authentication key (key pair)
uuid	string (Optional)	To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object. Required if you omit the port attribute. If the network includes multiple subnets, IP addresses will be allocated from any subnet. To allocate an IP address of a specific subnet, create a port in advance, and specify the uuid of that port in port.
port	string (Optional)	To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. Required if you omit the uuid attribute.
fixed_ip	string (Optional)	A fixed IPv4 address for the NIC. Valid with a neutron or nova-networks network.
name	string	The server name. This information is also used as the computer name/host name. If 64 characters or more are specified: • Windows: The computer name is the default name set by Windows. • Linux: The host name will be "host-fixedIpAddressOfEth0". The string set for the computer name/host name is changed as follows:

Name	Type	Description
		- Spaces () and underscores (_) are replaced with hyphens (-) - Uppercase letters are replaced with lowercase letters - Symbols other than periods (.) and hyphens (-) are removed - Periods (.) are removed from the beginning and end of the string, and strings consisting of hyphens (-) are removed - In Windows, if the string contains a period (.) anywhere other than at the beginning or end, then the characters preceding the period (.) will be used for the name.
metadata	string (Optional)	Metadata key and value pairs. The maximum size of the metadata key and value is 255 bytes each. - Windows: To specify a password of an instance, specify the "admin_pass" key. The specified password will be set for users specified in cloudbase-init. Check with the image provider regarding users who are specified for cloudbase-init. Example setting: "metadata": {"admin_pass": "passwordSetForInstance"} - To use the automatic failover feature, specify "fcx.autofailover": "true". However, instances that satisfy the following conditions are excluded from recovery by the operator. Users must either re-create such instances, or delete them. "fcx.autofailover": "false" has been set, or, - the instance is a target of auto scaling, or, - the status of the instance is ERROR
block_device_mapping_v2	string	Enables booting the server from a volume when additional parameters are given.
device_name	string	Describes a path to the device for the volume you want to use to boot the server. Specify this item in /dev/vd<i>deviceName</i> format. /dev/vd is fixed, and for <i>deviceName</i>, specify characters that are valid as a device name. When creating an instance that is allocated multiple volumes, for the boot volume, specify the character with highest priority among the device names of all volumes. The order of priority is a > b > c > ...
source_type	string	Describes the volume source type for the volume. Choices are "snapshot", "volume", or "image".
destination_type	string	Specifies the connection destination ("volume").

Name	Type	Description
delete_on_termination	bool (Optional)	Specifies whether volumes created during the instance creation will be deleted when the instance is deleted. When "True" is specified, volumes during instance creation will also be deleted when the instance is deleted. When "False" is specified, the volumes created during instance creation will not be deleted when the instance is deleted. If not specified, "False" (do not delete) will be used. The volume where snapshots are collected will not be deleted even if "True" is specified.
boot_index	string	Specifies the device start order. Specify sequential values, starting from 0. For the boot disk, specify "0".
config_drive	string (Optional)	Only "false" can be specified.
uuid	string	Specifies the UUID of the resource specified for source_type.
volume_size	string	Specify the volume size in GB. This item must be specified when "image" is specified for source_type. Specify a value equal to or higher than the min_disk parameter of the image to be used. If the min_disk parameter of the image to be used has not been specified or is "0", check the minimum size with the image provider and specify the value accordingly. If "volume" was specified for source_type, this item will be ignored even if a value is specified. If "snapshot" was specified for source_type, and this item is omitted, the volume size of the snapshot collection source will be used.
OS-DCF:diskConfig	string (Optional)	A valid value is AUTO or MANUAL.

Example 3.394. Create server with configuration drive: JSON request

```
{
  "server": {
    "name": "new-server-test",
    "imageRef": "b5660a6e-4b46-4be3-9707-6b47221b454f",
    "flavorRef": "2",
    "key_name": "keypair1",
    "metadata": {
      "My Server Name": "Apache1"
    }
  }
}
```

Response

Example. Create server with configuration drive: JSON response

```
{
  "server": {
    "adminPass": "am5LKVsBVQ4s",
    "id": "58da039c-dc81-4d8f-8688-a2f819e2f750",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/servers/58da039c-dc81-4d8f-8688-a2f819e2f750",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/servers/58da039c-dc81-4d8f-8688-a2f819e2f750",
        "rel": "bookmark"
      }
    ]
  }
}
```

1.2.6.33 Get server information with configuration drive

Method	URI	Description
GET	/v2/{tenant_id}/servers/{server_id}	Shows information for a specified server including the configuration drive extended attribute.

Normal response codes: 200

Request

This table shows the URI parameters for the get server information with configuration drive request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	Uuid	The UUID for the server of interest to you.

This operation does not require a request body.

Response

Example. Get server information with configuration drive: JSON response

```
{
  "server": {
    "accessIPv4": "",
    "accessIPv6": "",
    "addresses": {
```

```

    "private": [
      {
        "addr": "192.168.0.3",
        "version": 4
      }
    ],
    "config_drive": "",
    "created": "2013-02-04T13:17:50Z",
    "flavor": {
      "id": "1",
      "links": [
        {
          "href": "http://openstack.example.com/openstack/flavors/1",
          "rel": "bookmark"
        }
      ]
    },
    "hostId": "8725fb615b191d8249a40f3e90d1efde88d914412e4edb2719176afd",
    "id": "dd3b0715-a3fc-43d8-bbd2-2720beb226fb",
    "image": {
      "id": "70a599e0-31e7-49b7-b260-868f441e862b",
      "links": [
        {
          "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
          "rel": "bookmark"
        }
      ]
    },
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/servers/dd3b0715-
a3fc-43d8-bbd2-2720beb226fb",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/servers/dd3b0715-
a3fc-43d8-bbd2-2720beb226fb",
        "rel": "bookmark"
      }
    ],
    "metadata": {
      "My Server Name": "Apache1"
    },
    "name": "new-server-test",
    "progress": 0,
    "status": "ACTIVE",
    "tenant_id": "openstack",
    "updated": "2013-02-04T13:17:51Z",
    "user_id": "fake"
  }
}

```

1.2.6.34 Get server details with configuration drive

Method	URI	Description
GET	/v2/{tenant_id}/servers/detail	Lists details for all servers including the configuration drive extended attribute.

Normal response codes: 200

Request

This table shows the URI parameters for the get server details with configuration drive request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This operation does not require a request body.

Response

Example. Get server details with configuration drive: JSON response

```
{
  "servers": [
    {
      "accessIPv4": "",
      "accessIPv6": "",
      "addresses": {
        "private": [
          {
            "addr": "192.168.0.3",
            "version": 4
          }
        ]
      },
      "config_drive": "",
      "created": "2013-02-04T13:21:44Z",
      "flavor": {
        "id": "1",
        "links": [
          {
            "href": "http://openstack.example.com/openstack/flavors/1",
            "rel": "bookmark"
          }
        ]
      },
      "hostId":
      "76e154b0015e25fad65a7ab0c35a86dd79acfa8312075a6534ef6176",
      "id": "720e688f-5ec8-4d4f-b585-dbd1a89ceeb0",
      "image": {
        "id": "70a599e0-31e7-49b7-b260-868f441e862b",
        "links": [
          {
            "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
            "rel": "bookmark"
          }
        ]
      },
      "links": [
        {
          "href": "http://openstack.example.com/v2/openstack/
servers/720e688f-5ec8-4d4f-b585-dbd1a89ceeb0",
          "rel": "self"
        },
        {
          "href": "http://openstack.example.com/openstack/
servers/720e688f-5ec8-4d4f-b585-dbd1a89ceeb0",
          "rel": "bookmark"
        }
      ],
      "metadata": {
        "My Server Name": "Apache1"
      }
    }
  ]
}
```

```

    },
    "name": "new-server-test",
    "progress": 0,
    "status": "ACTIVE",
    "tenant_id": "openstack",
    "updated": "2013-02-04T13:21:44Z",
    "user_id": "fake"
  }
]
}

```

1.2.6.35 Create server with OS-EXT-IPS-MAC:mac_addr extended attribute

Method	URI	Description
POST	/v2/{tenant_id}/servers	Creates a server with the OS-EXT-IPS-MAC:mac_addr extended attribute.

Normal response codes: 202



Caution

- When an instance created using a Linux image is started or restarted, the sshd settings are initialized, and it may no longer be possible to log in to the instance. Refer to ["Reboot server" on page 27](#) for details on the required tasks.
- When the password of the user who registered (imported) the image is changed, the image can no longer be used. In such a case, convey either of the following to the operator and request a change of image.
 - The location of the image following the change of image UUID and user authentication information
 - The image UUID that was registered (imported) following the change of image UUID and user authentication information
- If the following message is displayed after instance creation as a "message" for the instance whose "status" is "ERROR" or "fault", please re-create an instance according to the procedure described in ["Create server" on page 16](#).
 "Block Device Mapping is Invalid: Volume <Volume uuid> did not finish being created even after we waited <Elapsed time (seconds)> seconds or <Volume status confirmation frequency> attempts."

Request

This table shows the URI parameters for the create server with os-ext-ips-mac:mac_addr extended attribute request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This table shows the body parameters for the create server with os-ext-ips-mac:mac_addr extended attribute request:

Name	Type	Description
security_group	string	One or more security_group objects. Specify the name of the security group in the name attribute.

Name	Type	Description
	(Optional)	If you omit this attribute, the server is created in the default security group. Specify a security group for which TCP communication is permitted for the following IP address and port number. IP address: 169.254.169.254 Port number: 80 If TCP communication is not permitted, the host name (computer name) and administrator password may not be set when creating an instance.
user_data	string (Optional)	Configuration information or scripts to use upon launch. Must be Base64 encoded. The main formats that are supported are as follows: - Linux: - Shell script (begins with #!) - Windows: - PowerShell (begins with #ps1_sysnative or #ps1_x86) - Windows batch (begins with rem cmd) If Linux, cloud-config files can also be specified, but since verification has not been completed, we recommend using Shell scripts.
availability_zone	string (Optional)	The availability zone in which to launch the server.
server	ServerForCreate	server.
imageRef	string	The image reference for the desired image for your server instance. Specify as an ID or full URL.
flavorRef	string	The flavor reference for the desired flavor for your server instance. Specify as an ID or full URL.
key_name	string (Optional)	Assigns the public key of the named keypair to the server.
networks	string (Optional)	A networks object. By default, the server instance is provisioned with all isolated networks for the tenant. Optionally, you can create one or more NICs on the server. To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object.

Name	Type	Description
		To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. You can specify multiple NICs on the server. Ensure that the network is specified. To set the following information for a virtual server, a virtual router must be connected to the network that the virtual server will be connected to. • Host name (computer name) • Administrator password • Authentication key (key pair)
uuid	string (Optional)	To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object. Required if you omit the port attribute. If the network includes multiple subnets, IP addresses will be allocated from any subnet. To allocate an IP address of a specific subnet, create a port in advance, and specify the uuid of that port in port.
port	string (Optional)	To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. Required if you omit the uuid attribute.
fixed_ip	string (Optional)	A fixed IPv4 address for the NIC. Valid with a neutron or nova-networks network.
name	string	The server name. This information is also used as the computer name/host name. If 64 characters or more are specified: • Windows: The computer name is the default name set by Windows. • Linux: The host name will be "host-fixedIpAddressOfEth0". The string set for the computer name/host name is changed as follows: • Spaces () and underscores () are replaced with hyphens (-) • Uppercase letters are replaced with lowercase letters • Symbols other than periods (.) and hyphens (-) are removed

Name	Type	Description
		- Periods (.) are removed from the beginning and end of the string, and strings consisting of hyphens (-) are removed - In Windows, if the string contains a period (.) anywhere other than at the beginning or end, then the characters preceding the period (.) will be used for the name.
metadata	string (Optional)	Metadata key and value pairs. The maximum size of the metadata key and value is 255 bytes each. - Windows: To specify a password of an instance, specify the "admin_pass" key. The specified password will be set for users specified in cloudbase-init. Check with the image provider regarding users who are specified for cloudbase-init. Example setting: "metadata": {"admin_pass": "passwordSetForInstance"} - To use the automatic failover feature, specify "fcx.autofailover": "true". However, instances that satisfy the following conditions are excluded from recovery by the operator. Users must either re-create such instances, or delete them. "fcx.autofailover": "false" has been set, or, - the instance is a target of auto scaling, or, - the status of the instance is ERROR
block_device_mapping_v2	string	Enables booting the server from a volume when additional parameters are given.
device_name	string	Describes a path to the device for the volume you want to use to boot the server. Specify this item in /dev/vd<i>deviceName</i> format. /dev/vd is fixed, and for <i>deviceName</i>, specify characters that are valid as a device name. When creating an instance that is allocated multiple volumes, for the boot volume, specify the character with highest priority among the device names of all volumes. The order of priority is a > b > c > ...
source_type	string	Describes the volume source type for the volume. Choices are "snapshot", "volume", or "image".
destination_type	string	Specifies the connection destination ("volume").
delete_on_termination	bool (Optional)	Specifies whether volumes created during the instance creation will be deleted when the instance is deleted. When "True" is specified, volumes during instance creation will also be deleted when the instance is deleted.

Name	Type	Description
		When "False" is specified, the volumes created during instance creation will not be deleted when the instance is deleted. If not specified, "False" (do not delete) will be used. The volume where snapshots are collected will not be deleted even if "True" is specified.
boot_index	string	Specifies the device start order. Specify sequential values, starting from 0. For the boot disk, specify "0".
config_drive	string (Optional)	Only "false" can be specified.
uuid	uuid	Specifies the UUID of the resource specified for source_type.
volume_size	String	Specify the volume size in GB. This item must be specified when "image" is specified for source_type. Specify a value equal to or higher than the min_disk parameter of the image to be used. If the min_disk parameter of the image to be used has not been specified or is "0", check the minimum size with the image provider and specify the value accordingly. If "volume" was specified for source_type, this item will be ignored even if a value is specified. If "snapshot" was specified for source_type, and this item is omitted, the volume size of the snapshot collection source will be used.
OS-EXT-IPS-MAC:mac_addr	string (Optional)	Associated MAC address.

Example. Create server with OS-EXT-IPS-MAC:mac_addr extended attribute: JSON request

```
{
  "server": {
    "name": "new-server-test",
    "imageRef": "b5660a6e-4b46-4be3-9707-6b47221b454f",
    "flavorRef": "2",
    "key_name": "keypair1",
    "metadata": {
      "My Server Name": "Apache1"
    }
  }
}
```

Response

Example. Create server with OS-EXT-IPS-MAC:mac_addr extended attribute: JSON response

```
{
  "server": {
    "adminPass": "zD7wDKTXiHsp",
    "id": "b44e5008-42f7-4048-b4c8-f40a29da88ba",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/servers/b44e5008-42f7-4048-b4c8-f40a29da88ba",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/servers/b44e5008-42f7-4048-b4c8-f40a29da88ba",
        "rel": "bookmark"
      }
    ]
  }
}
```

1.2.6.36 Show server information

Method	URI	Description
GET	/v2/{tenant_id}/servers/{server_id}	Shows information for a specified server. Includes the OSEXT-IPS-MAC:mac_addr extended attribute.

Normal response codes: 200

Request

This table shows the URI parameters for the show server information request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.

This operation does not require a request body.

Response

Example. Show server information: JSON response

```
{
  "server": {
    "accessIPv4": "",
    "accessIPv6": "",
    "addresses": {
      "private": [
        {
          "addr": "192.168.0.3",
          "version": 4,

```

```

    "OS-EXT-IPS-MAC:mac_addr": "00:0c:29:e1:42:90"
  }
]
},
"created": "2013-02-07T18:46:28Z",
"flavor": {
  "id": "1",
  "links": [
    {
      "href": "http://openstack.example.com/openstack/flavors/1",
      "rel": "bookmark"
    }
  ]
},
"hostId": "4e2003eddbfdb1280c2618d04090bcdd6773203b8da8347af0b2723d",
"id": "dc7281f9-ee47-40b9-9950-9f73e7961caa",
"image": {
  "id": "70a599e0-31e7-49b7-b260-868f441e862b",
  "links": [
    {
      "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
      "rel": "bookmark"
    }
  ]
},
"links": [
  {
    "href": "http://openstack.example.com/v2/openstack/servers/dc7281f9-
ee47-40b9-9950-9f73e7961caa",
    "rel": "self"
  },
  {
    "href": "http://openstack.example.com/openstack/servers/dc7281f9-
ee47-40b9-9950-9f73e7961caa",
    "rel": "bookmark"
  }
],
"metadata": {
  "My Server Name": "Apache1"
},
"name": "new-server-test",
"progress": 0,
"status": "ACTIVE",
"tenant_id": "openstack",
"updated": "2013-02-07T18:46:29Z",
"user_id": "fake"
}
}

```

1.2.6.37 Get server details

Method	URI	Description
GET	/v2/{tenant_id}/servers/detail	Lists details for all servers. Includes the OS-EXT-IPSMAC: mac_addr extended attribute.

Normal response codes: 200

Request

This table shows the URI parameters for the get server details request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This operation does not require a request body.

Response

Example. Get server details: JSON response

```
{
  "servers": [
    {
      "accessIPv4": "",
      "accessIPv6": "",
      "addresses": {
        "private": [
          {
            "addr": "192.168.0.3",
            "version": 4,
            "OS-EXT-IPS-MAC:mac_addr": "00:0c:29:e1:42:90"
          }
        ]
      },
      "created": "2013-02-07T18:40:59Z",
      "flavor": {
        "id": "1",
        "links": [
          {
            "href": "http://openstack.example.com/openstack/flavors/1",
            "rel": "bookmark"
          }
        ]
      },
      "hostId":
        "fe866a4962fe3bdb6c2db9c8f7dcdb9555aca73387e72b5cb9c45bd3",
      "id": "76908712-653a-4d16-807e-d89d41435d24",
      "image": {
        "id": "70a599e0-31e7-49b7-b260-868f441e862b",
        "links": [
          {
            "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
            "rel": "bookmark"
          }
        ]
      },
      "links": [
        {
          "href": "http://openstack.example.com/v2/openstack/
servers/76908712-653a-4d16-807e-d89d41435d24",
          "rel": "self"
        },
        {
          "href": "http://openstack.example.com/openstack/
servers/76908712-653a-4d16-807e-d89d41435d24",
          "rel": "bookmark"
        }
      ],
      "metadata": {
        "My Server Name": "Apache1"
      },
      "name": "new-server-test",
      "progress": 0,
    }
  ]
}
```

```

    "status": "ACTIVE",
    "tenant_id": "openstack",
    "updated": "2013-02-07T18:40:59Z",
    "user_id": "fake"
  }
]
}

```

1.2.6.38 Create server

Method	URI	Description
POST	/v2/{tenant_id}/servers	Creates a server with a block device mapping.

Normal response codes: 202



Caution

- When an instance created using a Linux image is started or restarted, the sshd settings are initialized, and it may no longer be possible to log in to the instance. Refer to ["Reboot server" on page 27](#) for details on the required tasks.
- When the password of the user who registered (imported) the image is changed, the image can no longer be used. In such a case, convey either of the following to the operator and request a change of image.
 - The location of the image following the change of image UUID and user authentication information
 - The image UUID that was registered (imported) following the change of image UUID and user authentication information
- If the following message is displayed after instance creation as a "message" for the instance whose "status" is "ERROR" or "fault", please re-create an instance according to the procedure described in ["Create server" on page 16](#).

"Block Device Mapping is Invalid: Volume <Volume uuid> did not finish being created even after we waited <Elapsed time (seconds)> seconds or <Volume status confirmation frequency> attempts."

Request

This table shows the URI parameters for the create server request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This table shows the body parameters for the create server request:

Name	Type	Description
security_group	string (Optional)	One or more security_group objects. Specify the name of the security group in the name attribute. If you omit this attribute, the server is created in the default security group. Specify a security group for which TCP communication is permitted for the following IP address and port number.

Name	Type	Description
		IP address: 169.254.169.254 Port number: 80 If TCP communication is not permitted, the host name (computer name) and administrator password may not be set when creating an instance.
user_data	string (Optional)	Configuration information or scripts to use upon launch. Must be Base64 encoded. The main formats that are supported are as follows: - Linux: - Shell script (begins with #!) - Windows: - PowerShell (begins with #ps1_sysnative or #ps1_x86) - Windows batch (begins with rem cmd) If Linux, cloud-config files can also be specified, but since verification has not been completed, we recommend using Shell scripts.
availability_zone	string (Optional)	The availability zone in which to launch the server.
server	ServerForCreate	server.
imageRef	string	The image reference for the desired image for your server instance. Specify as an ID or full URL.
flavorRef	string	The flavor reference for the desired flavor for your server instance. Specify as an ID or full URL.
key_name	string (Optional)	Assigns the public key of the named keypair to the server.
networks	string (Optional)	A networks object. By default, the server instance is provisioned with all isolated networks for the tenant. Optionally, you can create one or more NICs on the server. To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object. To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. You can specify multiple NICs on the server. Ensure that the network is specified.

Name	Type	Description
		To set the following information for a virtual server, a virtual router must be connected to the network that the virtual server will be connected to. • Host name (computer name) • Administrator password • Authentication key (key pair)
uuid	string (Optional)	To provision the server instance with a NIC for a network, specify the UUID of the network in the uuid attribute in a networks object. Required if you omit the port attribute. If the network includes multiple subnets, IP addresses will be allocated from any subnet. To allocate an IP address of a specific subnet, create a port in advance, and specify the uuid of that port in port.
port	string (Optional)	To provision the server instance with a NIC for an already existing port, specify the port-id in the port attribute in a networks object. Required if you omit the uuid attribute.
fixed_ip	string (Optional)	A fixed IPv4 address for the NIC. Valid with a neutron or nova-networks network.
name	string	The server name. This information is also used as the computer name/host name. If 64 characters or more are specified: • Windows: The computer name is the default name set by Windows. • Linux: The host name will be "host-fixedIpAddressOfEth0". The string set for the computer name/host name is changed as follows: • Spaces () and underscores (_) are replaced with hyphens (-) • Uppercase letters are replaced with lowercase letters • Symbols other than periods (.) and hyphens (-) are removed • Periods (.) are removed from the beginning and end of the string, and strings consisting of hyphens (-) are removed • In Windows, if the string contains a period (.) anywhere other than at the beginning or end, then the characters preceding the period (.) will be used for the name.

Name	Type	Description
metadata	string (Optional)	Metadata key and value pairs. The maximum size of the metadata key and value is 255 bytes each. - Windows: To specify a password of an instance, specify the "admin_pass" key. The specified password will be set for users specified in cloudbase-init. Check with the image provider regarding users who are specified for cloudbase-init. Example setting: "metadata": {"admin_pass": "passwordSetForInstance"} - To use the automatic failover feature, specify "fcx.autofailover": "true". However, instances that satisfy the following conditions are excluded from recovery by the operator. Users must either re-create such instances, or delete them. "fcx.autofailover": "false" has been set, or, - the instance is a target of auto scaling, or, - the status of the instance is ERROR
block_device_mapping_v2	string	Enables booting the server from a volume when additional parameters are given.
device_name	string	Describes a path to the device for the volume you want to use to boot the server. Specify this item in /dev/vd<i>deviceName</i> format. /dev/vd is fixed, and for <i>deviceName</i>, specify characters that are valid as a device name. When creating an instance that is allocated multiple volumes, for the boot volume, specify the character with highest priority among the device names of all volumes. The order of priority is a > b > c > ...
source_type	String	Describes the volume source type for the volume. Choices are "snapshot", "volume", or "image".
destination_type	String	Specifies the connection destination ("volume").
delete_on_termination	bool (Optional)	Specifies whether volumes created during the instance creation will be deleted when the instance is deleted. When "True" is specified, volumes during instance creation will also be deleted when the instance is deleted. When "False" is specified, the volumes created during instance creation will not be deleted when the instance is deleted. If not specified, "False" (do not delete) will be used.

Name	Type	Description
		The volume where snapshots are collected will not be deleted even if "True" is specified.
boot_index	String	Specifies the device start order. Specify sequential values, starting from 0. For the boot disk, specify "0".
config_drive	String (Optional)	Only "false" can be specified.
uuid	uuid	Specifies the UUID of the resource specified for source_type.
volume_size	String	Specify the volume size in GB. This item must be specified when "image" is specified for source_type. Specify a value equal to or higher than the min_disk parameter of the image to be used. If the min_disk parameter of the image to be used has not been specified or is "0", check the minimum size with the image provider and specify the value accordingly. If "volume" was specified for source_type, this item will be ignored even if a value is specified. If "snapshot" was specified for source_type, and this item is omitted, the volume size of the snapshot collection source will be used.

Example. Create server: JSON request

```
{
  "server": {
    "name": "new-server-test",
    "imageRef": "b5660a6e-4b46-4be3-9707-6b47221b454f",
    "flavorRef": "2",
    "key_name": "keypair1",
    "metadata": {
      "My Server Name": "Apache1"
    },
    "block_device_mapping_v2": [
      {
        "device_name": "/dev/vda",
        "source_type": "image",
        "destination_type": "volume",
        "volume_size": "20",
        "boot_index": "0",
        "uuid": "6cbf9710-87e3-4a36-8116-9b3396882621",
        "delete_on_termination": "True"
      },
      {
        "device_name": "/dev/vdb",
        "source_type": "volume",
        "destination_type": "volume",
        "boot_index": "1",
        "uuid": "0a273d8d-c5e1-4886-bd93-1d1779283fa3",
        "delete_on_termination": "True"
      },
      {
        "device_name": "/dev/vdc",
        "source_type": "snapshot",

```

```

    "destination_type": "volume",
    "volume_size": "30",
    "boot_index": "2",
    "uuid": "492eac4d-6c12-4828-b0ec-75d3bff0bd4b",
    "delete_on_termination": "True"
  }
]
}
}

```

Response

Example. Create server: JSON response

```

{
  "server": {
    "adminPass": "N4x7wFX6iN8D",
    "id": "babd1af0-4fc6-4529-b32f-aad69811ccf5",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/servers/babd1af0-4fc6-4529-b32f-aad69811ccf5",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/servers/babd1af0-4fc6-4529-b32f-aad69811ccf5",
        "rel": "bookmark"
      }
    ]
  }
}

```

1.2.6.39 List servers

Method	URI	Description
GET	/v2/{tenant_id}/servers{?changessince,image,flavor,name,status,host}	Lists IDs, names, and links for all servers.

Normal response codes: 200, 203

Request

This table shows the URI parameters for the list servers request:

Name	Type	Description
{tenant_id}	String	The tenant ID in a multi-tenancy cloud.

This table shows the query parameters for the list servers request:

Name	Type	Description
changes-since	DateTime (Optional)	A time/date stamp for when the image last changed status.

Name	Type	Description
image	AnyURI (Optional)	Name of the image in URL format.
flavor	AnyURI (Optional)	Name of the flavor in URL format.
name	String (Optional)	Name of the server as a string.
status	Server Status (Optional)	Value of the status of the server so that you can filter on "ACTIVE" for example.
host	String (Optional)	Name of the host as a string.

Response

Example. List servers: JSON 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"
    }
  ]
}
```

1.2.6.40 Attach volume

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/os-volume_attachments	Attaches a volume to the specified server.

Normal response codes: 200

Request

This table shows the URI parameters for the attach volume request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.
{volumeId}	String	ID of the volume to attach.
{device}	String	Name of the device such as, /dev/vdb. Use "auto" for auto-assign (if supported).
{volumeAttachment}	String	A dictionary representation of a volume attachment.

This table shows the body parameters for the attach volume request:

Name	Type	Description
volumeId	String	ID of the volume to attach.
device	String	Name of the device such as, /dev/vdb. Use "null" for auto-assign (if supported).

Example. Attach volume: JSON request

```
{
  "volumeAttachment": {
    "volumeId": "a26887c6-c47b-4654-abb5-dfadf7d3f803",
    "device": null
  }
}
```

Response

Example. Attach volume: JSON response

```
{
  "volumeAttachment": {
    "device": "/dev/vdd",
    "id": "a26887c6-c47b-4654-abb5-dfadf7d3f803",
    "serverId": "0c92f3f6-c253-4c9b-bd43-e880a8d2eb0a",
    "volumeId": "a26887c6-c47b-4654-abb5-dfadf7d3f803"
  }
}
```

1.2.6.41 List volume attachments

Method	URI	Description
GET	/v2/{tenant_id}/servers/{server_id}/os-volume_attachments	Lists the volume attachments for a specified server.

Normal response codes: 200

Request

This table shows the URI parameters for the list volume attachments request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.

This operation does not require a request body.

Response

Example. List volume attachments: JSON 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"
    }
  ]
}
```

1.2.6.42 Show volume attachment details

Method	URI	Description
GET	/v2/{tenant_id}/servers/{server_id}/os-volume_attachments/{attachment_id}	Shows details for the specified volume attachment.

Normal response codes: 200

Request

This table shows the URI parameters for the show volume attachment details request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.
{attachment_id}	String	Volume attachment ID.

This operation does not require a request body.

Response

Example. Show volume attachment details: JSON response

```
{
```

```

"volumeAttachment":{
  "device":"/dev/sda1",
  "serverId":"ed61f75a-ccf4-4b58-b9a0-5a51a3f51aee",
  "id":"d3b6498f-46f0-48b8-8209-7633ba62a3da",
  "volumeId":"d3b6498f-46f0-48b8-8209-7633ba62a3da",
  "availability_zone":"jp-east-1b"
}
}

```

1.2.6.43 Delete volume attachment

Method	URI	Description
DELETE	/v2/{tenant_id}/servers/{server_id}/os-volume_attachments/{attachment_id}	Deletes the specified volume attachment from the specified server.

Normal response codes: 202



The system volume cannot be removed from the instance.

Caution

Request

This table shows the URI parameters for the delete volume attachment request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.
{attachment_id}	String	Volume attachment ID.

This operation does not accept a request body and does not return a response body.

1.2.6.44 Start server

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/action	Starts a stopped server and changes its status to ACTIVE.

Normal response codes: 202

Request

This table shows the URI parameters for the start server request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.

Example. Start server: JSON request

```
{
  "os-start": null
}
```

Response

This operation does not return a response body.

1.2.6.45 Stop server

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/action	Stops the specified running server and changes its status to STOPPED.

Normal response codes: 202



Caution

When an instance created using a Linux image is started, the sshd settings are initialized, and it may no longer be possible to log in to the instance. Refer to "[Reboot server](#)" on page 27" and perform the task before stopping the instance, if necessary.

Request

This table shows the URI parameters for the stop server request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.

Example. Stop server: JSON request

```
{
  "os-stop": null
}
```

Response

This operation does not return a response body.

1.2.6.46 List flavors with access type

Method	URI	Description
GET	/v2/{tenant_id}/flavors	Lists flavors and includes the access type, which is public or private.

Normal response codes: 200

Request

This table shows the URI parameters for the list flavors with access type request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This operation does not require a request body.

Response

Example. List flavors with access type: JSON response

```
{
  "flavors": [
    {
      "disk": 1,
      "id": "1",
      "links": [
        {
          "href": "http://openstack.example.com/v2/openstack/flavors/1",
          "rel": "self"
        },
        {
          "href": "http://openstack.example.com/openstack/flavors/1",
          "rel": "bookmark"
        }
      ],
      "name": "m1.tiny",
      "os-flavor-access:is_public": true,
      "ram": 512,
      "vcpus": 1
    },
    {
      "disk": 20,
      "id": "2",
      "links": [
        {
          "href": "http://openstack.example.com/v2/openstack/flavors/2",
          "rel": "self"
        },
        {
          "href": "http://openstack.example.com/openstack/flavors/2",
          "rel": "bookmark"
        }
      ],
      "name": "m1.small",
      "os-flavor-access:is_public": true,
      "ram": 2048,
      "vcpus": 1
    },
    {
      "disk": 40,
      "id": "3",
      "links": [
        {
          "href": "http://openstack.example.com/v2/openstack/flavors/3",
          "rel": "self"
        },
        {
          "href": "http://openstack.example.com/openstack/flavors/3",
          "rel": "bookmark"
        }
      ]
    }
  ],
}
```

```

    "name": "m1.medium",
    "os-flavor-access:is_public": true,
    "ram": 4096,
    "vcpus": 2
  },
  {
    "disk": 80,
    "id": "4",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/flavors/4",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/flavors/4",
        "rel": "bookmark"
      }
    ],
    "name": "m1.large",
    "os-flavor-access:is_public": true,
    "ram": 8192,
    "vcpus": 4
  },
  {
    "disk": 160,
    "id": "5",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/flavors/5",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/flavors/5",
        "rel": "bookmark"
      }
    ],
    "name": "m1.xlarge",
    "os-flavor-access:is_public": true,
    "ram": 16384,
    "vcpus": 8
  }
]
}

```

1.2.6.47 Show flavor access type

Method	URI	Description
GET	/v2/{tenant_id}/flavors/{flavor_id}	Gets the flavor access type, which is public or private.

Normal response codes: 200

Request

This table shows the URI parameters for the show flavor access type request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{flavor_id}	UUID	The ID of the flavor of interest to you.

This operation does not require a request body.

Response

Example. Show flavor access type: JSON response

```
{
  "flavor": {
    "disk": 1,
    "id": "1",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/flavors/1",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/flavors/1",
        "rel": "bookmark"
      }
    ],
    "name": "m1.tiny",
    "os-flavor-access:is_public": true,
    "ram": 512,
    "vcpus": 1
  }
}
```

1.2.6.48 Create interface

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/os-interface	Creates and uses a port interface to attach the port to a server instance.

Normal response codes: 200

Request

This table shows the URI parameters for the create interface request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.

This table shows the body parameters for the create interface request:

Name	Type	Description
interfaceAttachment	String	Specify the interfaceAttachment action in the request body.
port_id	UUID	The ID of the port for which you want to create an interface.

Example. Create interface: JSON request

```
{
  "interfaceAttachment": {
    "port_id": "ce531f90-199f-48c0-816c-13e38010b442"
  }
}
```

Response

Example. Create interface: JSON response

```
{
  "interfaceAttachment": {
    "fixed_ips": [
      {
        "ip_address": "192.168.1.1",
        "subnet_id": "f8a6e8f8-c2ec-497c-9f23-da9616de54ef"
      }
    ],
    "mac_addr": "fa:16:3e:4c:2c:30",
    "net_id": "3cb9bc59-5699-4588-a4b1-b87f96708bc6",
    "port_id": "ce531f90-199f-48c0-816c-13e38010b442",
    "port_state": "ACTIVE"
  }
}
```

1.2.6.49 List interfaces

Method	URI	Description
GET	/v2/{tenant_id}/servers/{server_id}/os-interface	Lists port interfaces.

Normal response codes: 200

Request

This table shows the URI parameters for the list interfaces request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.

This operation does not require a request body.

Response

Example. List interfaces: JSON 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"
  }
]
}

```

1.2.6.50 Show attached interface information

Method	URI	Description
GET	/v2/{tenant_id}/servers/{server_id}/os-interface/{attachment_id}	Shows information about a specified port interface.

Normal response codes: 200

Request

This table shows the URI parameters for the show attached interface information request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.
{attachment_id}	UUID	The interface ID.

This operation does not require a request body.

Response

Example. Show attached interface information: JSON 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"
  }
}

```

1.2.6.51 Detach interface

Method	URI	Description
DELETE	/v2/{tenant_id}/servers/{server_id}/os-interface/{attachment_id}	Detaches a specified port interface.

Normal response codes: 202

Request

This table shows the URI parameters for the detach interface request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.
{attachment_id}	UUID	The interface ID.

This operation does not accept a request body and does not return a response body.

1.2.6.52 List server groups

Method	URI	Description
GET	/v2/{tenant_id}/os-server-groups	Lists server groups.

Normal response codes: 200

Request

This table shows the URI parameters for the list server group request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This operation does not require a request body.

Response

Example. List server groups: JSON response

```
{
  "server_groups": [
    {
      "id": "616fb98f-46ca-475e-917e-2563e5a8cd19",
      "name": "test",
      "policies": [
        "anti-affinity"
      ],
      "members": [],
      "metadata": {}
    }
  ]
}
```

1.2.6.53 Create server group

Method	URI	Description
POST	/v2/{tenant_id}/os-server-groups	Create server group.

Normal response codes: 200

Request

This table shows the URI parameters for the create server group request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
name	String	The server group name. A non-empty string with no leading or trailing spaces. Maximum length is 255 characters.
policies	Dict	A list of one or more policy names to associate with the server group. The list must contain at least one policy name. Each policy name must be a non-empty string with no leading or trailing spaces. Maximum length is 255 characters. "anti-affinity" and "affinity" can be specified. To make a redundant configuration in an availability zone, specify "anti-affinity". When trying to create an instance with the server group UUID of "anti-affinity" but there is no VM host where it can be created, its status becomes ERROR after the creation request is received.
availability_zone	String (Optional)	Specifies the availability zone where the server group will be created. If omitted, the availability zone will be determined automatically from the UUID of the domain that the request execution user belongs to.

This table shows the body parameters for the create server group request:

Name	Type	Description
name	String	The server group name. A non-empty string with no leading or trailing spaces. Maximum length is 255 characters.
policies	Dict (Optional)	A list of one or more policy names to associate with the server group. The list must contain at least one policy name. Each policy name must be a non-empty string with no leading or trailing spaces. Maximum length is 255 characters.

Name	Type	Description
		"anti-affinity" and "affinity" can be specified. To make a redundant configuration in an availability zone, specify "anti-affinity".
availability_zone	String (Optional)	Specifies the availability zone where the server group will be created. If omitted, the availability zone will be determined automatically from the UUID of the domain that the request execution user belongs to.

Example. Create server group: JSON request

```
{
  "server_group": {
    "name": "test",
    "policies": [
      "anti-affinity"
    ]
  }
}
```

Response

Example. Create server group: JSON response

```
{
  "server_group": {
    "members": [],
    "metadata": {},
    "id": "03a54e57-4fcc-40bc-b532-6426a238ee70",
    "policies": [
      "anti-affinity"
    ],
    "name": "test"
  }
}
```

1.2.6.54 Show server group details

Method	URI	Description
GET	/v2/{tenant_id}/os-server-groups/{ServerGroup_id}	Shows details for a specified server group.

Normal response codes: 200

Request

This table shows the URI parameters for the show server group request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

Name	Type	Description
{ServerGroup_id}	String	The server group id.

This operation does not require a request body.

Response

Example. Show server group: JSON response

```
{
  "server_group": {
    "id": "616fb98f-46ca-475e-917e-2563e5a8cd19",
    "name": "test",
    "policies": [
      "anti-affinity"
    ],
    "members": [],
    "metadata": {}
  },
  "availability_zone": "jp-east-1a"
}
```

1.2.6.55 Delete server group

Method	URI	Description
DELETE	/v2/{tenant_id}/os-server-groups/{ServerGroup_id}	Deletes a specified server group.

Normal response codes: 204

Request

This table shows the URI parameters for the list server group request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{ServerGroup_id}	String	The server group id.

This operation does not accept a request body and does not return a response body.

1.2.6.56 Shelve server

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/action	Shelves a running server.

Normal response codes: 202



Caution The system volume and expansion volume attached to the instance that is to be shelved remain assigned to the applicable instance, without being released.

Request

This table shows the URI parameters for the show shelf server:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.
shelve	String	Specify the shelve action in the request body.

This operation does not require a request body

Example. Shelve server : JSON request

```
{
  "shelve": null
}
```

Response

This operation does not return a response body.

1.2.6.57 Restore shelved server

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/action	Restores a shelved server.

Normal response codes: 202



Caution

This also restores the system volume and expansion volume that were attached to the instance when it was shelved.

Request

This table shows the URI parameters for the show shelf server:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.
unshelve	String	Specify the unshelve action in the request body.

This operation does not require a request body

Example. Restore shelved server : JSON request

```
{
  "unshelve": null
}
```

Response

This operation does not return a response body.

1.2.6.58 Update server metadata items

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/metadata	Updates metadata items by key for a specified server.

Replaces items that match the specified keys and does not modify items not specified in the request.

If this operation exceeds the metadata items quota, the API throws an overLimit (413) fault.

Normal response codes: 202

Request

This table shows the URI parameters for the update server metadata items request:

Name	Type	Description
{tenant_id}	UUID	The tenant ID in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server.

This table shows the body parameters for the update server metadata items request:

Name	Type	Description
metadata	hash	A set of key/value pairs. These pair replace any existing key/value pairs in the resources metadata with matching keys. Any key/value pairs in the parameter with keys that do not occur in the existing resource metadata are added to the resources metadata.

Example. Update server metadata items: JSON request

```
{
  "metadata": {
    "name": "test_server"
  }
}
```

Response

Example. Update server metadata items: JSON response

```
{
  "metadata": {
    "name": "test_server"
  }
}
```

1.3 Dedicated instances

1.3.1 Restrictions

This feature is not supported as at the time of issue of this document.

1.3.2 How to check whether an instance is dedicated

1.3.2.1 How to check whether an instance is dedicated

Information indicating whether an instance is dedicated is displayed in the API below.

The information that indicates a dedicated instance is as follows.

key	value
OS-SCH-HNT:scheduler_hints	True

1.3.2.2 Show server information

Method	URI	Description
GET	/v2/{tenant_id}/servers/{server_id}	Shows information for a specified server.

Normal response codes: 200

Request

This table shows the URI parameters for the show server information request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.

This operation does not require a request body.

Response

Example. Show server information: JSON response

```
{
  "server": {
    "OS-DCF:diskConfig": "AUTO",
    "accessIPv4": "",
    "accessIPv6": "",
    "addresses": {
      "private": [
        {
          "addr": "192.168.0.3",
```

```

    "version": 4
  }
],
},
"created": "2012-12-02T02:11:55Z",
"flavor": {
  "id": "1",
  "links": [
    {
      "href": "http://openstack.example.com/openstack/flavors/1",
      "rel": "bookmark"
    }
  ]
},
"hostId": "c949ab4256cea23b6089b710aa2df48bf6577ed915278b62e33ad8bb",
"id": "5046e2f2-3b33-4041-b3cf-e085f73e78e7",
"image": {
  "id": "70a599e0-31e7-49b7-b260-868f441e862b",
  "links": [
    {
      "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
      "rel": "bookmark"
    }
  ]
},
"links": [
  {
    "href": "http://openstack.example.com/v2/openstack/
servers/5046e2f2-3b33-4041-b3cf-e085f73e78e7",
    "rel": "self"
  },
  {
    "href": "http://openstack.example.com/openstack/
servers/5046e2f2-3b33-4041-b3cf-e085f73e78e7",
    "rel": "bookmark"
  }
],
"OS-SCH-HNT:Scheduler_hints": {
  "fcx.dedicated": "True"
}
}

```

1.3.2.3 List servers

Method	URI	Description
GET	/v2/{tenant_id}/servers/detail	Lists servers.

Normal response codes: 200, 203

Request

This table shows the URI parameters for the list servers request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This operation does not require a request body.

Response

Example. List servers: JSON response

```
{
  "servers": [
    {
      "OS-DCF:diskConfig": "AUTO",
      "accessIPv4": "",
      "accessIPv6": "",
      "addresses": {
        "private": [
          {
            "addr": "192.168.0.3",
            "version": 4
          }
        ]
      },
      "created": "2012-12-02T02:11:55Z",
      "flavor": {
        "id": "1",
        "links": [
          {
            "href": "http://openstack.example.com/openstack/flavors/1",
            "rel": "bookmark"
          }
        ]
      },
      "hostId":
      "99428f32351a5d89d0f7727c6eec68c1777c545a0972aaac645508dc",
      "id": "05372e62-05b9-4ee2-9343-9a1fdf2a5fda",
      "image": {
        "id": "70a599e0-31e7-49b7-b260-868f441e862b",
        "links": [
          {
            "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
            "rel": "bookmark"
          }
        ]
      },
      "links": [
        {
          "href": "http://openstack.example.com/v2/openstack/
servers/05372e62-05b9-4ee2-9343-9a1fdf2a5fda",
          "rel": "self"
        },
        {
          "href": "http://openstack.example.com/openstack/
servers/05372e62-05b9-4ee2-9343-9a1fdf2a5fda",
          "rel": "bookmark"
        }
      ],
      "metadata": {
        "My Server Name": "Apache1"
      },
      "name": "new-server-test",
      "OS-SCH-HNT:scheduler_hints": {
        "fcx.dedicated": "True"
      },
      "progress": 0,
      "status": "ACTIVE",
      "tenant_id": "openstack",
      "updated": "2012-12-02T02:11:56Z",
      "user_id": "fake"
    }
  ]
}
```

}

1.4 Provisioning script

1.4.1 Provisioning script

Use the APIs listed in [API list](#) on page 7

1.5 Auto scale

1.5.1 Generate URLs when using APIs

For URLs to be used by the APIs (items 1 and 2), use URLs of the "orchestration" type from the Service catalog retrieved from the identity service.

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

https:// hostName/v1/{tenant_id}

Host portion

Path portion

Create the URL in one of the following formats:

- If you remember the tenant_id:
Join the path name of each API in the host section of the end point URL
- If you do not remember the tenant_id:
The endpoint URL and the path name of each API with "/v2/{tenant_id}" removed from the beginning

For URLs to be used by the APIs (others than items 1 and 2), use URLs of the "autoscale" type from the Service catalog retrieved from the identity service.

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

https:// hostName/autoscale_schedulers

Host portion

Path portion

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

1.5.2 API list

Item	API	Description
1	POST /v1/{tenant_id}/stacks/{stack_name}/{stack_id}/resources/{resource_name}/signal Send signal	Sends signal to the specified resource
2	GET /v1/{tenant_id}/stacks/{stack_name}/{stack_id}/resources/{resource_name} Retrieve details of stack resources	Retrieves detailed information about the specified resource
3	POST /autoscale_schedulers	Registers a schedule
4	DELETE /autoscale_schedulers/{name}	Deletes a schedule.
5	GET /autoscale_schedulers	Retrieves a schedule list

For processing other than the above, use the following APIs described in "API Reference Manual (Application Platform Service)" - "Template/ Development environment" - "Orchestration"

- Create stack: POST /v1/{tenant_id}/stacks (Create a stack)
- Find stack: GET /v1/{tenant_id}/stacks/{stack_name} (Retrieve the URL of the specified stack)
- Update stack: PUT /v1/{tenant_id}/stacks/{stack_name}/{stack_id} (Update the specified stack)
- Delete stack: DELETE /v1/{tenant_id}/stacks/{stack_name} (Delete the specified stack)

1.5.3 Request header

Header	Specified value
Accept	application/json
Content-Type	application/json
X-Auth-Token	Authentication token

1.5.4 API error codes

Error code	Description
500, other codes possible	Server Error, cloudServersFault
400	BadRequest
401	unauthorized This code is returned by the schedule API when its execution is not approved under the operator privileges (role).
403	Forbidden, resizeNotAllowed
404	itemNotFound
405	BadMethod
409	conflictingRequest
413	OverLimit
415	badMediaType
501	notImplemented
503	serviceUnavailable

1.5.5 API details

1.5.5.1 Send signal

Method: POST
URI: /v1/{tenant_id}/stacks/{stack_name}/{stack_id}/resources/{resource_name}/signal
Description: Sends a signal to the specified resource.

Normal response code: 200

Parameter	Type	Description
tenant_id	String	Tenant ID
stack_name	String	Stack name
stack_id	String	Stack ID
resource_name	String	Stack resource name

Example request

No request body

Example response

No response body

1.5.5.2 Retrieve details of stack resources

Method: GET
URI: /v1/{tenant_id}/stacks/{stack_name}/{stack_id}/resources/{resource_name}
Description: Retrieves details of the specified resource.

Normal response code: 200

Parameter	Type	Description
tenant_id	String	Tenant ID
stack_name	String	Stack name
stack_id	String	Stack ID
resource_name	String	Stack resource name

Example request

No request body

Example response

```
{
  "resource": {
    "resource_name": "web_server_group",
    "description": "",
    "links": [
      { "href": "http://heatServiceIpAddress:portNumber/v1/a0b06965de4a43569795bb0feadb0856/stacks/test_stack/0cc8b90c-0163-42fe-a261-4b005fd89b2a/resources/web_server_group", "rel": "self" },
      { "href": "http://heatServiceIpAddress:portNumber/v1/a0b06965de4a43569795bb0feadb0856/stacks/test_stack/0cc8b90c-0163-42fe-a261-4b005fd89b2a", "rel": "stack" }
    ],
    "logical_resource_id": "web_server_group",
    "resource_status": "CREATE_COMPLETE",
    "updated_time": "2014-09-16T15:41:42Z",
    "required_by": [
      "web_server_scaleout_policy", "web_server_scalein_policy"
    ],
    "resource_status_reason": "state changed",
    "physical_resource_id": "f4ff3753-a52c-4b2f-bd95-600344922a1a",
    "resource_type": "OS::Heat::AutoScalingGroup"
  }
}
```

1.5.5.3 Register a schedule

Method	URI	Description
POST	/autoscale_schedulers	Registers a schedule

Normal response codes: 200



Caution

- Registration of schedules must be performed by the same user who created the stack for executing schedules.
- In addition to the above condition, registration of schedules when using custom roles must be performed by a user for whom the `orch_scheduler_create` and `orch_create` roles were set.
- While the schedule feature is being used, do not delete the roles specified for the user when creating stacks and registering schedules.

Request

This table shows the URI parameters for the request body.

Name	Type	Description
name	String	Specify a name for identifying the schedule. A unique name is required for all tenants in a region. Specify a name using up to 64 alphanumeric characters (a-z, A-Z, 0-9). The name is case-sensitive.
method	String	Specify POST.
url	String	Specify the signal URL.

Name	Type	Description
		 Note: Specify http for a URL scheme. Caution
time	String	Specify a datetime for executing the REST API. The format must comply with the cron command.
project_id	String	Specify the ID of the project for which schedule processing will be executed.

Example. Create schedule: JSON request

```
{
  "name": "sample2",
  "time": "* /5 * * * *",
  "url": " http://orchestration.jp-east-1.cloud.global.fujitsu.com/
v1/2801e5de00d142a388b17b65256f7ad4/stacks/s1_step2/0ffc2720-
a7ba-4e0f-8ca6-82142f14f6eb/resources/web_server_scaleup_policy/signal",
  "method": "POST",
  "project_id": "2801e5de00d142a388b17b65256f7ad4"
}
```

Response

Example. Create server group: JSON response

```
{
  "name": "sample2",
  "method": "POST",
  "url": " http://orchestration.jp-east-1.cloud.global.fujitsu.com/
v1/2801e5de00d142a388b17b65256f7ad4/stacks/s1_step2/0ffc2720-
a7ba-4e0f-8ca6-82142f14f6eb/resources/web_server_scaleup_policy/signal",
  "time": "* /5 * * * *",
  "project_id": "2801e5de00d142a388b17b65256f7ad4"
}
```

1.5.5.4 Delete a schedule

Method	URI	Description
DELETE	/autoscale_schedulers/{name}	Deletes a schedule.

Normal response codes: 204

Request

This table shows the URI parameters for the request body.

Name	Type	Description
name	String	Specify a name for identifying the schedule. A unique name is required for all tenants in a region.

Name	Type	Description
		Specify a name using up to 64 alphanumeric characters (a-z, A-Z, 0-9). The name is case-sensitive.

There are no parameters to specify in the request body.

Response

There is no request body.

1.5.5.5 List schedules

Method	URI	Description
GET	/autoscale_schedulers	Retrieves a schedule list

Normal response codes: 200

Request

There are no parameters to specify in the request URI and body.

Response

Example. List schedules: JSON response

```
{
  "schedulers": [
    {
      "name": "sample2",
      "time": "* / 5 * * * *",
      "method": "POST",
      "url": "http://192.168.3.104:8004/v1/2801e5de00d142a388b17b65256f7ad4/stacks/s1_step2/0ffc2720-a7ba-4e0f-8ca6-82142f14f6eb/resources/web_server_scaleup_policy/signal",
      "project_id": "2801e5de00d142a388b17b65256f7ad4"
    }
  ]
}
```

1.6 Virtual server imports/exports

1.6.1 Virtual server imports/exports

Each API can be run using the Administrator or System Owner role.

1.6.2 API list

Item	API name	Description
1	POST /v1/imageimport	Registers an image
2	GET /v1/imageimport/{import_id}/status	Retrieves the status of image registration
3	GET /v1/imageimport{?start, limit}	Retrieves the status of the image registration list
4	POST /v1/imageexport	Export an image
5	GET /v1/imageexport/{export_id}/status	Retrieves the status of image export
6	GET /v1/imageexport{?start, limit}	Retrieves the status of the image export list
7	POST /v1/imageexport/{export_id}/cancel	Cancel the image export

Note: {import_id} is the import ID returned by the image registration API.

Note: {export_id} is the export ID returned by the image export API.

1.6.3 API details

1.6.3.1 Register image

URL

/v1/imageimport

Method

POST

Request header

Refer to "[Table 1: Request headers](#)" on page 121" for details on the request headers of this API.

Table 1: Request headers

Request header	Value	Description
X-Auth-Token	String	Tokens that were retrieved using the Identity service

Request body

Refer to "[Table 2: Request parameters](#)" on page 122" for details on the request parameters of this API. Each parameter is specified in JSON format in the request body.

Table 2: Request parameters

Parameter	Value	Description
name	String	Specifies the image name. (*1)
disk_format (optional)	String	Specifies the storage disk format for services (*1). If "true" is specified for the "conversion" parameter, you must specify "raw" for this parameter.
container_format (optional)	String	Specifies the storage container format for services. Only "bare" can be specified. (*1)
location	String	Part of the URL of object storage where VM image files from the transfer source are deployed. Specify using the following format: <code>"/v1/AUTH_tenantId/containerName/objectName"</code>
checksum (optional)	String	The SHA1 checksum value of the VM image file from the transfer source. If omitted, checksum verification will not be performed when importing a virtual server.
id	String	Specifies the UUID to be allocated to an image for registration. Specify using the following format: 8 digits-4 digits-4 digits-4 digits-12 digits An error will occur if the uuid of an existing image is specified. (*1)
min_ram (optional)	int	Specifies the minimum RAM (MB) required for using images. If omitted, 0 will be used. (*1)
min_disk (optional)	int	Specifies the minimum disk size (GB) required for using images. If omitted, 0 will be used. (*1)
property-* (optional)		Specifies the property to be set for an image. If omitted, a property will not be set for an image. For the "*" in the parameter name, specify the property key name. (*1)
ovf_location (optional)	String	Part of the URL of object storage where ovf files are deployed for VM image files from the transfer source. Specify using the following format: <code>"/v1/AUTH_tenantId/containerName/objectName"</code>
conversion	boolean	Specifies whether images are converted (*2). Only "true" can be specified.
os_type	String	OS type in VM image at transfer source. Specify one of the following.

Parameter	Value	Description
		Keyword Description win2008SE: Windows Server 2008 SE win2008EE: Windows Server 2008 EE win2008R2SE: Windows Server 2008 R2 SE win2008R2EE: Windows Server 2008 R2 EE win2012SE: Windows Server 2012 SE win2012R2SE: Windows Server 2012 R2 SE Rhel: Red Hat Enterprise Linux centos: CentOS ubuntu: Ubuntu
user_name	String	Specifies the user name.
password	String	Specifies a Base64-encoded password.
domain_name	String	Specifies the domain name.

*1: Parameter registered for a service.

*2: Images in vmdk format are converted into a format that can be processed by K5 (raw format).

Response body

Refer to "[Table 3: List of response parameters when the state is normal](#)" on page 123" and "[Table 4: List of response parameters when the state is error](#)" on page 123" for details on the response parameters of this API. Each parameter is specified in JSON format in the response body. Refer to "[Table 5: Detailed error information list](#)" on page 124" for details on error information returned when an error occurs.

Table 3: List of response parameters when the state is normal

Parameter	Value	Description
import_id	String	ID of the import process. Used when retrieving the conversion status.

Table 4: List of response parameters when the state is error

Parameter	Value	Description
error_code	String	Detailed error code
message	String	Detailed error message

Table 5: Detailed error information list

Status code	Detailed error code	Detailed error message	Action
400	40001	Required parameter 'name' is not specified.	Modify the request content.
400	40002	Required parameter 'location' is not specified.	Modify the request content.
400	40003	Required parameter 'id' is not specified.	Modify the request content.
400	40004	Required parameter 'conversion' is not specified.	Modify the request content.
400	40005	Required parameter 'os_type' is not specified.	Modify the request content.
400	40006	Parameter 'os_type' has invalid value.	Modify the request content.
400	40007	Required parameter 'user_name' is not specified.	Modify the request content.
400	40008	Required parameter 'password' is not specified.	Modify the request content.
400	40009	Required parameter 'domain_name' is not specified.	Modify the request content.
400	40010	Parameter 'user_name' or 'password' or 'domain_name' has invalid value.	Modify the request content.
403	40301	You cannot execute this API.	Check with the Administrator about your account privileges.
500	50001	Internal server error.	Contact support.
500	50002	Internal server error.	Contact support.
500	50003	Internal server error.	Contact support.
503	50301	Too many requests.	Reexecute after completing other import requests.

Status code

Refer to "[Table 6: Status codes](#)" on page 124" for details on the status codes returned by this API.

Table 6: Status codes

Status code	Description
201	Indicates that the virtual server import process started normally.
400	Indicates an invalid request.
401	Indicates an invalid token.
403	Indicates that the virtual server import execution privileges do not exist.
500	Indicates that the virtual server import process failed due to an error.

Status code	Description
503	Indicates that the virtual server import process failed due to the upper limit for concurrent executions of requests being exceeded.

Example response body

An example response body is shown below.

```
{"import_id": "6bf65660-70ee-4a75-b61a-36ac040c289c"}
```

1.6.3.2 Retrieve image registration status

URL

/v1/imageimport/{import_id}/status

Note: {import_id} is the import ID returned by the virtual server import request API.

Method

GET

Request header

Refer to "[Table 7: Request headers](#)" on page 125" for details on the request headers of this API.

Table 7: Request headers

Request header	Value	Description
X-Auth-Token	String	Tokens that were retrieved using the Identity service

Request body

This API does not accept request parameters. "0" must be specified in the Content-Length header. Any content specified for the request body will be ignored.

Response body

Refer to "[Table 8: Response parameters](#)" on page 125", "[Table 9: List of response parameters when import fails](#)" on page 126" and "[Table 10: Response parameters when an error occurs](#)" on page 126" for details on the response parameters of this API. Each parameter is specified in JSON format in the response body. If import_status is "succeeded" or "processing", the content of "[Table 8: Response parameters](#)" on page 125" is returned. If import_status is "failed", the content of "[Table 8: Response parameters](#)" on page 125" and "[Table 9: List of response parameters when import fails](#)" on page 126" is returned. Refer to "[Table 11: Detailed error information list](#)" on page 127" for details on error information returned when an error occurs.

Table 8: Response parameters

Parameter	Value	Description
import_status	String	Status of the import process. One of the following is returned.

Parameter	Value	Description
		keyword succeeded: Indicates that the import process was completed successfully. failed: Indicates that the import process failed. processing: Indicates that the import process is in progress. queued: Indicates that an import process item is waiting to start.
progress	int	Progress status of the import process. Value from 0 to 100.
name	String	Image name
disk_format	String	Format of storage disk for service.
container_format	String	Format of storage container for service.
is_public	boolean	Indicates whether images are shared.
location	String	URL of object storage where VM image files from the transfer source are deployed.
id	String	Unique ID of image registered for service.
min_ram	int	The minimum RAM (MB) required for using images.
min_disk	int	The minimum disk capacity (GB) required for using images.
properties		Properties set for images.
ovf_location	String	URL of object storage where ovf files are deployed for VM image files from the transfer source.
conversion	boolean	Indicates whether images are converted.
os_type	String	OS type in VM image at transfer source.
user_name	String	User name
password	String	Base64-encoded password
domain_name	String	Domain name

Table 9: List of response parameters when import fails

Parameter	Value	Description
message	String	Detailed error message

Table 10: Response parameters when an error occurs

Parameter	Value	Description
error_code	String	Detailed error code

Parameter	Value	Description
message	String	Detailed error message

Table 11: Detailed error information list

Status code	Detailed error code	Detailed error message	Action
403	40301	You cannot execute this API.	Check with the Administrator about your account privileges.
404	40401	Invalid import_id.	Modify the request URL.
500	50001	Internal server error.	Contact support.
500	50002	Internal server error.	Contact support.

Status code

Refer to "[Table 12: Status codes](#) on page 127" for details on the status codes returned by this API.

Table 12: Status codes

Status code	Description
200	Indicates that retrieval of the virtual server import process status was successful.
401	Indicates an invalid token.
403	Indicates that the virtual server import execution privileges do not exist.
404	The import_id specified in the URL is invalid. The status is stored for 7 days after import completion. This status code is returned when the API is run after this period.
500	Retrieval of the virtual server import status failed.

Example response body

An example response body is shown below.

```
{
  "import_status": "succeeded",
  "progress": 100,
  "name": "sample_image",
  "disk_format": "raw",
  "container_format": "bare",
  "is_public": false,
  "location": "/v1/AUTH_790f1c092038413a8dd6771a033b17f5/test_container/test_image.vmdk",
  "id": "14294f46-d9fe-45bb-ba5f-0b93a69c4416",
  "min_ram": 0,
  "min_disk": 0,
  "properties": {},
  "ovf_location": "/v1/AUTH_790f1c092038413a8dd6771a033b17f5/test_container/test_image.ovf",
  "conversion": true,
  "os_type": "RHEL",
  "user_name": "testuser",
  "password": "cGFzc3dvcmQ=",
  "domain_name": "testdomain"
}
```

1.6.3.3 List image registration status

URL

/v1/imageimport{?start, limit}

Refer to "[Table 13: Query parameters](#) on page 128" for details on the query parameters of this API.

Table 13: Query parameters

Parameter	Value	Description
start (optional)	int	Specifies the index of the first item to retrieve. If omitted, the most recent import will be used.
limit (optional)	int	Specifies the number of images to retrieve. If omitted, all process information corresponding to the specified token will be returned.

Method

GET

Request header

Refer to "[Table 14: Request headers](#) on page 128" for details on the request headers of this API.

Table 14: Request headers

Request header	Value	Description
X-Auth-Token	String	Tokens that were retrieved using the Identity service

Request body

This API does not accept the request body. "0" must be specified in the Content-Length header. Any content specified for the request body will be ignored.

Response body

Refer to "[Table 15: Response parameters](#) on page 128" and "[Table 16: Response parameters when an error occurs](#) on page 129" for details on the response parameters of this API. Refer to "[Table 17: Detailed error information list](#) on page 129" for details on error information returned when an error occurs.

Table 15: Response parameters

Parameter	Value	Description
imports	Array	The route element of a virtual server import process list. Process information matching the project ID of the specified token is returned as an array element. Up to 100 elements are returned, by request order, starting from the newest.
import_id	String	ID of the import process.
import_status	String	Status of the import process. One of the following is returned.

Parameter	Value	Description
		keyword succeeded: Indicates that the import process was completed successfully. failed: Indicates that the import process failed. processing: Indicates that the import process is in progress. queued: Indicates that the import process is waiting to start.
status	String	URL for retrieving the registration status.

Table 16: Response parameters when an error occurs

Parameter	Value	Description
error_code	String	Detailed error code
message	String	Detailed error message

Table 17: Detailed error information list

Status code	Detailed error code	Detailed error message	Action
403	40301	You cannot execute this API.	Check with the Administrator about your account privileges.
500	50001	Internal server error.	Contact support.
500	50002	Internal server error.	Contact support.

Status code

Refer to "[Table 18: Status codes](#)" on page 129 for details on the status codes returned by this API.

Table 18: Status codes

Status code	Description
200	Indicates that retrieval of the virtual server import process status was successful.
400	Indicates an invalid request.
401	Indicates an invalid token.
403	Indicates that the virtual server import execution privileges do not exist.
500	Indicates that retrieval of the virtual server import process list failed due to an error.

Example response body

An example response body is shown below.

```
{ "imports": [ { "import_id": "6bf65660-70ee-4a75-b61a-36ac040c289c", "import_status": "succeeded", "status": "/v1/imageimport/6bf65660-70ee-4a75-b61a-36ac040c289c/status" } ] }
```

1.6.3.4 Image export

URL

/v1/imageexport

Method

POST

Request header

Refer to "[Table 19: Request headers](#)" on page 130" for details on the request headers of this API.

Table 19: Request headers

Request header	Value	Description
X-Auth-Token	String	Tokens that were retrieved using the Identity service

Request body

Refer to "[Table 20: Request parameters](#)" on page 130" for details on the request parameters of this API. Each parameter is specified in JSON format in the request body.

Table 20: Request parameters

Parameter	Value	Description
image_id	String	Specify the allocated ID for the export target image. An error will occur if the id of an image not existing is specified.
storage_container	String	URL of object storage where exported VM image files are deployed. Specify using the following format: "/v1/AUTH_<tenantID>/<containerNAME>"

Response body

Refer to "[Table 21: List of response parameters when the state is normal](#)" on page 131", "[Table 22: Response parameters when an error occurs](#)" on page 131" for details on the response parameters of this API.

Each parameter is outputted in JSON format in the response body. Refer to "[Table 23: Detailed error information list](#) on page 131" for details on error information returned when an error occurs.

Table 21: List of response parameters when the state is normal

Parameter	Value	Description
export_id	String	ID of the export process. Used when retrieving the status.

Table 22: Response parameters when an error occurs

Parameter	Value	Description
error_code	String	Detailed error code
error_message	String	Detailed error message

Table 23: Detailed error information list

Status code	Detailed error code	Detailed error message	Action
400	40001	Required parameter 'image_id' is not specified.	Modify the request content.
400	40002	Parameter 'image_id' has invalid value.	Modify the request content.
400	40003	Required parameter 'storage_container' is not specified.	Modify the request content.
400	40004	Parameter 'storage_container' has invalid value.	Modify the request content.
400	40005	Project id does not exist.	Specify the token which is retrieved with Authentication scope unspecified or project specified.
400	40007	Request body does not exist.	Modify the request content.
400	40008	Request body is not a json format.	Modify the request content.
400	40011	The size of the export image is too large.	N/A. Exporting the image which size is larger than the maximum size limit is impossible.
400	40012	Glance access error. Parameter has invalid value.	Modify the request content.
400	40015	The same request already exists.	Modify the request content.
400	40016	The exported file already exists.	Modify the request content.
400	40017	The uploaded file by image id does not exist in the object storage.	Modify the request content.
403	40301	You cannot execute this API.	Check with the Administrator about your account privileges.
500	50001	Internal server error.	Contact support.

Status code	Detailed error code	Detailed error message	Action
500	50002	Internal server error.	Contact support.
500	50003	Internal server error.	Contact support.
503	50301	Too many requests.	Re execute after completing other import requests.

Status codes

Refer to "[Table 24: Status codes](#) on page 132" for details on the status codes returned by this API.

Table 24: Status codes

Status code	Description
202	Indicates that the virtual server export process started normally.
400	Indicates an invalid request.
401	Indicates an invalid token.
403	Indicates that the virtual server export execution privileges do not exist.
500	Indicates that the virtual server export process failed due to an error.
503	Indicates that the virtual server export process failed due to the upper limit for concurrent executions of requests being exceeded.

Example response body

An example response body is shown below.

```
{"export_id":"2df79018-758e-11e6-8797-6b9192ea4ac2"}
```

1.6.3.5 Retrieve image export status

URL

/v1/imageexport/{export_id}/status

Note: {export_id} is the export ID returned by the image export request API.

Method

GET

Request header

Refer to "[Table 25: Request headers](#) on page 132" for details on the request headers of this API.

Table 25: Request headers

Request header	Value	Description
X-Auth-Token	String	Tokens that were retrieved using the Identity service

Request body

This API does not accept request parameters. Any content specified for the request body will be ignored.

Response body

Refer to "[Table 26: Response parameters](#) on page 133", "[Table 27: Response parameters when export fails](#) on page 134", "[Table 28: Detailed error message list when export fails](#) on page 134" and "[Table 29: Response parameters when an error occurs](#) on page 134" for details on the response parameters of this API. Each parameter is outputted in JSON format in the response body.

If export_status is "succeeded" or "processing", the content of "[Table 26: Response parameters](#) on page 133" is returned.

If export_status is "failed", the content of "[Table 26: Response parameters](#) on page 133", "[Table 27: Response parameters when export fails](#) on page 134" and "[Table 28: Detailed error message list when export fails](#) on page 134" is returned.

If API "failed", the content of "[Table 29: Response parameters when an error occurs](#) on page 134" is returned. Refer to "[Table 30: Detailed error information list](#) on page 134" for details on error information returned when an error occurs.

Table 26: Response parameters

Parameter	Value	Description														
export_status	String	Status of the export process. One of the following is returned. <table><tr><th>Keyword</th><th>Description</th></tr><tr><td>succeeded :</td><td>Indicates that the export process was completed successfully.</td></tr><tr><td>Failed :</td><td>Indicates that the export process failed.</td></tr><tr><td>processing :</td><td>Indicates that the export process is in progress.</td></tr><tr><td>queued :</td><td>Indicates that an export process item is waiting to start.</td></tr><tr><td>cancelling :</td><td>Indicates that cancellation of the export process is still in progress.</td></tr><tr><td>canceled :</td><td>Indicates that the export process is canceled.</td></tr></table> Status might repeat the state of processing and queued.	Keyword	Description	succeeded :	Indicates that the export process was completed successfully.	Failed :	Indicates that the export process failed.	processing :	Indicates that the export process is in progress.	queued :	Indicates that an export process item is waiting to start.	cancelling :	Indicates that cancellation of the export process is still in progress.	canceled :	Indicates that the export process is canceled.
Keyword	Description															
succeeded :	Indicates that the export process was completed successfully.															
Failed :	Indicates that the export process failed.															
processing :	Indicates that the export process is in progress.															
queued :	Indicates that an export process item is waiting to start.															
cancelling :	Indicates that cancellation of the export process is still in progress.															
canceled :	Indicates that the export process is canceled.															
progress	int	Progress status of the export process. Value from 0 to 100.														
image_id	String	ID allocated to the target image of export														
image_name	String	Name of the target image of export														

Parameter	Value	Description
storage_container	String	URL path of the object storage exported image is stored.
request_time	String	Export process requested date/time

Table 27: Response parameters when export fails

Parameter	value	Description
error_message	String	Detailed error message

Table 28: Detailed error message list when export fails

Messages	Cause of the error	Action
Specified id is not found.	Image of specified ID does not exist.	Check existence of the image of the specified ID.
Specified id is not valid image.	Image of specified ID is not valid for export process.	Check if the image of specified ID is the target image to export.
Export process has stopped unexpectedly.	Export process has stopped.	Contact support.
Cancel process has stopped unexpectedly.	Cancel process has stopped.	Contact support.
Export process takes too long time.	Export process has not completed for 7 days after export started.	Contact support.
VMexport process is failed (Subsidiary information)	In case subsidiary information is "fail to download image" or "fail to upload image".	Re-execute the image export API. When same message is returned, contact support.
	Other than above.	Contact support.

Table 29: Response parameters when an error occurs

Parameter	Value	Description
error_code	String	Detailed error code
error_message	String	Detailed error message

Table 30: Detailed error information list

Status code	Detailed error code	Detailed error message	Action
403	40301	You cannot execute this API.	Check with the Administrator about your account privileges.
404	40401	Invalid export_id.	Modify the request URL.
500	50001	Internal server error.	Contact support.
500	50002	Internal server error.	Contact support.

Status code

Refer to [Table 31: Status codes](#) on page 135 for details on the status codes returned by this API.

Table 31: Status codes

Status code	Description
200	Indicates that retrieval of the image export status was successful.
401	Indicates an invalid token.
403	Indicates that retrieval of the image export status execution privileges do not exist.
404	The export_id specified in the URL is invalid. The status is stored for 7 days after export completion. This status code is returned when the API is run after this period.
500	Retrieval of the image export status failed by internal error.

Example response body

An example response body is shown below.

```
{
  "export_status": "succeeded",
  "progress": 100,
  "image_id": "14294f46-d9fe-45bb-ba5f-0b93a69c4416",
  "image_name": "CentOS",
  "storage_container": "/v1/AUTH_100f1c092038413a8dd6771a455b17f5/test_container",
  "request_time": "2016-04-22T00:10:24Z"
}
```

1.6.3.6 Retrieve the status of the image export list

URL

/v1/imageexport{?start, limit}

Refer to ["Table 32: Query parameters"](#) on page 135" for details on the query parameters of this API.

Table 32: Query parameters

Parameter	Value	Description
start (optional)	int	Specifies the index of the first item to retrieve. If omitted, the most recent import will be used.
limit (optional)	int	Specifies the number of images to retrieve. If omitted, all process information corresponding to the specified token will be returned. (Maximum 200) Note: The number more than 200 can be specified.

Method

GET

Request header

Refer to "[Table 33: Request headers](#) on page 136" for details on the request headers of this API.

Table 33: Request headers

Request header	Value	Description
X-Auth-Token	String	Tokens that were retrieved using the Identity service

Request body

This API does not accept the request body. Any content specified for the request body will be ignored.

Response body

Refer to "[Table 34: Response parameters](#) on page 136 " and "[Table 36: Detailed error information list](#) on page 137 " for details on the response parameters of this API. Each parameter is outputted in JSON format in the response body. Refer to "[Table 36: Detailed error information list](#) on page 137 " for details when it failed.

Table 34: Response parameters

Parameter	Value	Description
exports	Array	List of processing status of export of image of each export_id in the same project. Up to 200 elements are returned, by request order from the new request.
export_id	String	ID of the export process.
export_status	String	Status of the export process. One of the following is returned.

Parameter	Value	Description
		keyword succeeded : Indicates that the export process was completed successfully. failed : Indicates that the export process failed. processing : Indicates that the export process is in progress. queued : Indicates that an export process item is waiting to start. cancelling : Indicates that cancelation of the export process is still in progress. canceled : Indicates that an export process is canceled. Status might repeat the state of processing and queued.
status	String	URL path to retrieve the export status.
image_id	String	ID allocated to the target image of export.
request_time	String	Acceptance date of export processing.

Table 35: Response parameters when an error occurs

Parameter	Value	Description
error_code	String	Detailed error code
error_message	String	Detailed error message

Table 36: Detailed error information list

Status code	Detailed error code	Detailed error message	Action
400	40013	Query parameter 'start' has invalid value.	Modify the request parameter.
400	40014	Query parameter 'limit' has invalid value.	Modify the request parameter.
403	40301	You cannot execute this API.	Check with the Administrator about your account privileges.
500	50001	Internal server error.	Contact support.
500	50002	Internal server error.	Contact support.

Status code

Refer to [Table 37: Status codes](#) on page 138 for details on the status codes returned by this API.

Table 37: Status codes

Status code	Description
200	Indicates that retrieval of the image export status list was successful.
400	Indicates an invalid request.
401	Indicates an invalid token.
403	Indicates that the virtual server export execution privileges do not exist.
405	Indicates an access by an invalid method.
500	Retrieval of the image export status list failed by internal error.

Example response body

An example response body is shown below.

```
{
  "exports": [
    {
      "export_id": "6bf65660-70ee-4a75-b61a-36ac040c289c",
      "export_status": "succeeded",
      "status": "/v1/imageexport/6bf65660-70ee-4a75-b61a-36ac040c289c/status",
      "image_id": "ce050928-bdc2-4c15-95dc-be6fbc7d6d83",
      "request_time": "2016-04-25T00:10:24Z"
    },
    {
      "export_id": "c6cb3e62-9b4c-4cd0-971d-2b43a63196bb",
      "export_status": "failed",
      "status": "/v1/imageexport/c6cb3e62-9b4c-4cd0-971d-2b43a63196bb/status",
      "image_id": "944997d2-0b74-11e6-a963-000c29a90136",
      "request_time": "2016-04-22T00:10:24Z"
    }
  ]
}
```

1.6.3.7 Cancel image export

URL

/v1/imageexport/{export_id}/cancel

Note: {export_id} is export process ID that is returned from image export API.

Method

POST

Request header

Refer to "[Table 38: Request headers](#)" on page 139" for details on the request headers of this API.

Table 38: Request headers

Request header	Value	Description
X-Auth-Token	String	>Tokens that were retrieved using the Identity service.

Response body

This API does not accept request parameters. Any content specified for the request body will be ignored.

Response body

This API does not return response body when API executed successfully. In case API failed, parameters in [Table 39: Response parameters when an error occurs](#) on page 139 are returned. Refer to [Table 40: Detailed error information list](#) on page 139 for detailed error information when API failed.

Table 39: Response parameters when an error occurs

Parameter	Value	Description
error_code	String	Detailed error code
error_message	String	Detailed error message

Table 40: Detailed error information list

Status code	Detailed error code	Detailed error message	Action
400	40010	Export_id is already accepted cancelling.	Cancelling request has been accepted already, you do not need to request again.
403	40301	You cannot execute this API.	Check with the Administrator about your account privileges.
404	40401	Invalid export_id.	Modify the request URL.
404	40402	Export_id was already finished.	Export has completed already, you do not need to request again .
500	50001	Internal server error.	Contact support.
500	50002	Internal server error.	Contact support.

Status code

Refer to [Table 41: Status codes](#) on page 140 for details on the status codes returned by this API.

Table 41: Status codes

Status code	Description
200	Indicate that the cancel of image export started successfully.
400	Indicates an invalid request. (Cancel request for identical export_id has been accepted.)
401	Indicates an invalid token.
403	Indicates that the cancel of image export API privileges do not exist .
404	Indicates that export_id specified in URL is invalid.
405	Indicates an access by an invalid method.
500	Indicates that cancel of the image export failed due to an internal error.

1.7 Virtual servers for SAP

1.7.1 API list

1.7.1.1 API list

Item	API name	Description
1	GET /templates/l_servers Retrieve a list of virtual server templates	Retrieves a list of virtual server templates
2	POST /l_servers Create virtual server	Creates a virtual server
3	GET /l_servers Retrieve a list of virtual servers	Retrieves a list of virtual servers
4	GET /l_servers/resourceId Retrieve virtual server details	Retrieves detailed information on the specified virtual server. Disk, NIC and snapshot information are included in the retrieved information.
5	PUT /l_servers/resourceId/start Start virtual server	Starts the specified virtual server
6	PUT /l_servers/resourceId/stop Stop virtual server	Stops the specified virtual server
7	PUT /l_servers/resourceId/restart Restart virtual server	Restarts the specified virtual server
8	DELETE /l_servers/resourceId Delete virtual server	Deletes the specified virtual server
9	PUT /l_servers/resourceId Change virtual server	Changes information about the specified virtual server
10	PUT /l_servers/resourceId/attach Attach disk to virtual server	Attaches a disk to the specified virtual server
11	PUT /l_servers/resourceId/detach Detach disk from virtual server	Detaches a disk from the specified virtual server
12	PUT /l_servers/resourceId/attach Attach NIC to virtual server	Attaches an NIC to the specified virtual server
13	PUT /l_servers/resourceId/detach Detach NIC from virtual server	Detaches an NIC from the specified virtual server
14	POST /server_images Create clone image from a virtual server	Creates a clone image from a virtual server

Item	API name	Description
	Create clone image	
15	DELETE /server_images/ <i>cloneImageName</i> Delete clone image	Deletes a clone image
16	GET /server_images Retrieve a list of clone images	Retrieves a list of clone images
17	PUT /server_images/ <i>cloneImageName</i> /move Change disclosure scope of clone image	Changes the disclosure scope of the specified clone image
18	POST /server_images Create snapshot	Creates a snapshot of a virtual server
19	PUT /server_images/ <i>resourceId</i> /restore Restore snapshot	Restores a snapshot of the specified virtual server
20	DELETE /server_images/ <i>resourceId</i> Delete snapshot	Deletes a snapshot
21	GET /tasks/ <i>taskId</i> Retrieve task details	Retrieves detailed information about the specified task
22	POST /projects Enable project	Enables a project
23	DELETE /projects/ <i>projId</i> Disable project	Disables the specified project
24	GET /projects/ <i>projId</i> Retrieve project details	Retrieves detailed information about the specified project
25	POST /networks Create network resource	Creates a network resource
26	DELETE /networks/ <i>resourceId</i> Delete network resource	Deletes the specified network resource
27	GET /networks Retrieve a list of network resources	Retrieves a list of network resources

1.7.1.2 Permit/prohibit a preset role

The following symbols are used to indicate permission/prohibition of API access in each preset role.

Note: Refer to the role management service specification/API for details on custom roles.

- A: Allowed on all projects
- B: Allowed only on projects that the user belongs to
- N: Not allowed

Item	API	Subscriber can be (get, req, no req, etc.)	Administrator can be (get, set, etc.)	Developer can be (get, create, no req, etc.)	Operator can be (get, no req, etc.)	Observer can be (get, no req, etc.)
1	GET /templates/_servers Retrieve a list of virtual server templates	N	Y	Y	Y	Y
2	POST /_servers Create virtual server	N	Y	Y	N	N
3	GET /_servers Retrieve a list of virtual servers	N	Y	Y	Y	Y
4	GET /_servers/~resourceId~ Retrieve virtual server details	N	Y	Y	Y	Y
5	PUT /_servers/~resourceId~/start Start virtual server	N	Y	Y	Y	N
6	PUT /_servers/~resourceId~/stop Stop virtual server	N	Y	Y	Y	N
7	PUT /_servers/~resourceId~/restart Restart virtual server	N	Y	Y	Y	N
8	DELETE /_servers/~resourceId~ Delete virtual server	N	Y	Y	N	N
9	PUT /_servers/~resourceId~ Change virtual server	N	Y	Y	N	N
10	PUT /_servers/~resourceId~/attach Attach disk to virtual server	N	Y	Y	N	N

11	PUT /_servers/~resourceId~/detach Detach disk from virtual server	N	Y	Y	N	N
12	PUT /_servers/~resourceId~/attach Attach NIO to virtual server	N	Y	Y	N	N
13	PUT /_servers/~resourceId~/detach Detach NIO from virtual server	N	Y	Y	N	N
14	POST /server_images Create clone image	N	Y	Y	Y	N
15	DELETE /server_images/cloneImageName Delete clone image	N	Y	Y	Y	N
16	GET /server_images Retrieve a list of clone images	N	Y	Y	Y	Y
17	PUT /server_images/cloneImageName/ins Change disclosure scope of clone image	N	Y	Y	N	N
18	POST /server_images Create snapshot	N	Y	Y	Y	N
19	PUT /server_images/~resourceId~/restore Restore snapshot	N	Y	Y	Y	N
20	DELETE /server_images/~resourceId~ Delete snapshot	N	Y	Y	Y	N

21	GET /tasks/taskId Retrieve task details	N	Y	Y	Y	Y
22	POST /projects Enable project	N	Y	N	N	N
23	DELETE /projects/projectId Disable project	N	Y	N	N	N
24	GET /projects/projectId Retrieve project details	N	Y	Y	Y	Y
25	POST /networks Create network resource	N	Y	Y	N	N
26	DELETE /networks/resourceId Delete network resource	N	Y	Y	N	N
27	GET /networks Retrieve a list of network resources	N	Y	Y	Y	Y

1.7.2 HTTP request

This section describes the elements comprising an HTTP request: HTTP header, HTTP method, and URL.

HTTP header

The following HTTP headers can be specified:

- Content-Type
Specifies the content type of the HTTP request.
- Accept
Specifies the content type of the HTTP response.
- X-Auth-Token
Specifies the token of Keystone.
When the system administrator uses the API, the scope specified for the token is ignored.
- X-VA-Project-Id
Specifies the project ID.
This must be specified when the system administrator uses the API. Users cannot specify the project ID when using the API.
- X-VA-Domain-Id
Specifies the domain ID.
This must be specified when the system administrator uses the API. Users cannot specify the project ID when using the API.

HTTP method

Depending on the purpose of the API, the HTTP methods are distinguished as follows:

- POST: Create resources
- GET: Retrieve resource information
- PUT: Operate resources
- DELETE: Delete resources

URL

The URL format is as follows:

<protocol>://<host>:<port>/<path> <params>

<protocol>	Transfer protocol (specify "https")
<host>	Host name or IP address of the delivery platform manager
<port>	Port number (default: 23461)
<path>	API path. This must be specified in one of the following formats: <i>/<resourceType>/</i> Format when creating resources or retrieving information (example: <i>/l_servers/</i>) <i>/<resourceType>>/<resourceId></i> Format when retrieving information on, changing the attributes of, or deleting specific resources (example: <i>/l_servers/100</i>) <i>/<resourceType>/<resourceId>/<operationName></i> Format when performing operations specific to a particular resource (example: <i>/l_servers/100/start</i>)
<params>	API parameters <u>When the HTTP method is GET or DELETE:</u> Arguments must be specified for queries. A question mark (?) must be appended to <path>, followed by the arguments. The arguments must be specified in the format <label>=<value> (*1). <u>When the HTTP method is POST or PUT:</u> Arguments must be specified in the request body. The arguments must be specified according to the Content-Type value of the HTTP header. When Content-Type is application/x-www-form-urlencoded: Arguments must be specified in the format <label>=<value> (*1). When Content-Type is application/xml: Arguments must be specified in XML format. If optional elements are omitted, the XML tags must be omitted. It is not possible to specify a format omitting only values. *1: The format for specifying <label>=<value> is as follows: <label>=<value>&<label>=<value>,... <label> Parameter name <value> Value When omitting optional arguments, both <label> and <value> must be omitted. It is not possible to specify (<label>=" etc.) and omit <value> only.

1.7.3 HTTP response

This section describes the elements comprising an HTTP response: status code and body. Responses are broadly divided into the 3 categories below.

When a request is completed normally

The status code "200 OK" is returned. This code is mainly returned by the resource information retrieval API (HTTP request using the GET method). For the body, the requested information is returned using the content type specified in the Accept header.

When a request is received normally and processing starts asynchronously

The status code "202 Accepted" is returned. This code is mainly returned by APIs other than the resource information retrieval API, when asynchronously executing tasks that involve time-consuming processing. For the body, the task information is returned using the content type specified in the Accept header (currently XML only).

```
<task>
  <id>taskId</id>
  <status>waiting</status>
  <progress>0</progress>
  <starttime>startTime</starttime>
  <resource id="resourceId"/>
</task>
```

The XML may include information for internal control purposes. Tags included in the body but not defined as API tags will be ignored.

When an error occurs

A status code from 4xx to 5xx is returned when an error occurs during the processing or accepting stages for HTTP requests.

Refer to [Status codes in use](#) on page 186 for details.

For the body, the error information is returned using the content type specified in the Accept header (currently XML only).

When an error occurs in the delivery platform region manager

```
<error>
  <message>msgBody</message>
  <arg>arg1</arg>
  <arg>arg2</arg>
  ...
  <request_id>requestId</request_id>
</error>
```

When an error occurs in the delivery platform environment

```
<errors>
  <error>
    <code>msgd</code>
    <message>msgBody</message>
    <arg>arg</arg>
    <arg>arg2</arg>
    ...
    <request_id>requestId</request_id>
    <AvailabilityZone>availZoneWhereErrorOccurred</AvailabilityZone>
    <cause>
      <product>relatedProdName</product>
      <resource_name>linkedProdResourceName</resource_name>
```

```

        <request>infoRequestForRelatedProd</request>
        <message>returnInfoOfRelatedProd</message>
    </cause>
</error>
<error>
    ... (*1)
</error>
...
</errors>

```

*1: Multiple error tags will be displayed when errors occur in multiple availability zones.

The message body is in English only, and embedded arguments are expressed as `${number}`.

The API user is able to construct the complete message by deploying arguments to the message body.

Example: Message ID=67114, Message body="can not copy file [\${0}->\${1}]",
Argument="a.txt","b.txt"

=>FJSVrcx:ERROR:67114:can not copy file [a.txt->b.txt]

The cause tag is output when some information (related product name, linked product resource name, information requested for related product) returned from a product linked to this product is included.

The XML may be extended, with the addition of detailed error information, for example. Tags included in the body but not defined as API tags will be ignored.

1.7.4 XML common specification

The common XML specification handled by APIs is as follows.

- When multiple resources of different types become root elements, the `<Resources>` tag will be used as a root element.

```

Example:
<Resources>
  <LServer>...</LServer>
  <Disk>...</Disk>
</Resources>

```

- When multiple resources of the same type become root elements, the tag with the plural format the resource will be used as a root element.

```

Example:
<LServers>
  <LServer>...</LServer>
  <LServer>...</LServer>
</LServers>

```

1.7.5 API details

1.7.5.1 List image registration status

Description

Lists virtual server templates.

Request

Header

Accept: application/xml

X-Auth-Token: Keystone token

Method

GET

Path

/templates/_l_servers

Query

Argument name	Description
verbose	To retrieve only some of the information, specify "false", or to retrieve all of the information, specify "true". If omitted, "false" is used.

Body

n/a

Response

Status code

200 OK

Body

If verbose=false:

```
<LServerTemplates>
  <LServerTemplate name="virtualServerTempl1"/>
  <LServerTemplate name="virtualServerTempl2"/>
</LServerTemplates>
```

If verbose=true:

```
<LServerTemplates>
  <LServerTemplate name="virtualServerTemplName1">
    <CPU>
      <CPUPerf>cpuPerformance</CPUPerf>
      <NumOfCPU numOfCpus/NumOfCPU>
```

```

    </CPU>
    <Memory>
      <MemorySize>memSize</MemorySize>
    </Memory>
  </LServerTemplate>
  <LServerTemplate name="virtualServerTempl2">
    ... (information about 2nd template)
  </LServerTemplate>
</LServerTemplates>

```

Item	Description	Details
<i>virtualServerTemplName</i>	Name of the virtual server template	String of up to 32 characters, which may contain halfwidth alphanumeric characters, underscores (_) and hyphens(-), and starts with a halfwidth letter.
<i>cpuPerformance</i>	CPU performance allocated to the virtual server	Number with up to one decimal place, in GHz
<i>numOfCpus</i>	Number of CPUs allocated to the virtual server	Integer greater than 0
<i>memSize</i>	Amount of memory allocated to the virtual server	Number with up to one decimal place, in GB

1.7.5.2 Create virtual server

Description

Create a virtual server.

Request

Header

Content-Type: application/xml

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: Project ID of resource creation destination (*2)

X-VA-Domain-Id: Domain ID of resource creation destination (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

POST

Path

/l_servers

Query

n/a

Body

```
<Resources>
  <LServer name="virtualServerName">
    <TemplateLink name="virtualServerTemplName"/>
    <ServerImageLink name="imageName"/>
    <ServerImageProject name="projId"/>
    <Disks>
      <Disk>
        <DiskIndex>diskNum</DiskIndex>
        <DiskSize>diskSize</DiskSize>
      </Disk>
    </Disks>
    <NICs>
      <NIC>
        <NICIndex>nicNum</NICIndex>
        <NetworkLinks>
          <NetworkLink id="networkId"/>
          <IpAddress auto="ipAutoSetup" address="ipAddr"/>
        </NetworkLink>
        </NetworkLinks>
      </NIC>
    </NICs>
    <OSSetting>
      <ComputerName>computerName, hostName</ComputerName>
      <AdminPassword>adminPassword</AdminPassword>
      <DNSServers>
        <DNSServer nic="nicIndex" ip="dnsIpAddress" />
      </DNSServers>
    </OSSetting>
    <AvailabilityZone>availZone</AvailabilityZone>
    <Dedicated>deployToDedicatedInstance</Dedicated>
  </LServer>
</Resources>
```

Item	Description	Details
<i>virtualServerName</i>	Name of the virtual server	Specify a string of up to 64 characters, using alphanumeric characters, hyphens (-), underscores (_), and periods (.). It must start with a halfwidth alphanumeric character.
<i>virtualServerTemplName</i>	Template name used by the virtual server	Resource name of virtual server templates that have already been created.
<i>imageName</i>	Clone image name to be distributed to the boot disk of the virtual server	Resource name of cloning images that have already been created.
<i>projId</i>	ID of the project that owns the image	- Public image: Leave blank. - Private image: ID of the project that owns the image.

Item	Description	Details
		 Note Because the image name is unique within the project, image names may be duplicated between projects. Therefore, this information is necessary for identifying which project an image belongs to, when image names are duplicated.
Specify the following items when not using a template or using a customized template		
<i>diskNum</i>	Number of the disk to allocate to the virtual server	Specify integers starting from 1. Specify a value from 1 to 55.  Note The system disk of the specified image is extracted to the system disk of the virtual server. Therefore, even if the disk size is specified for disk number 0 (system disk), that value will not be reflected (it will be ignored).
<i>diskSize</i>	Size of the disk to be extracted.	Specify a number of up to one decimal place, in GB.
<i>nicNum</i>	Number that identifies the NIC to allocate to the virtual server	Specify an integer starting from 0 (specify sequential numbers). Specify a value from 0 to 9.
<i>networkId</i>	ID of the network to which the virtual server connects	ID format
<i>ipAddr</i>	IP address to allocate to the virtual server (Optional)	- If specifying the IP address directly <code><IpAddress auto="false" address="xxx.xxx.xxx.xxx"/></code> - If automatically allocating from the address range set for network resources <code><IpAddress auto="true"></code> or omit the IpAddress tag, or omit the auto attribute.
<i>computerName, hostName</i>	Computer name, host name	Computer name or host name. Specify from 1 to 15 characters for Windows or from 1 to 63 characters for Linux using alphanumeric characters and hyphens (-). A string consisting of numbers only cannot be specified. If omitted, the name of the virtual server will be used. Underscores (_) and periods (.) are replaced with hyphens (-).
<i>adminPassword</i>	Administrator password used when the	Administrator password of the public or private image to be distributed.

Item	Description	Details
	operating system is Windows	If a password is not set for the private image to be distributed, the value specified for this parameter will be used. Specify a value of up to 128 characters, using halfwidth alphanumeric characters and symbols. If omitted, an error will occur. Cannot set passwords for administrator users other than the Administrator.
<i>nicIndex</i>	NIC index for which to configure DNS	Index of the NIC for which to configure the IP address of the DNS.
<i>dnsIpAddress</i>	IP address of the DNS	Specify the IP address of the DNS to be set for each NIC if the operating system is Windows. If omitted, the IP address of the DNS will be used.
<i>availZone</i>	Name of the availability zone where the virtual server will be created	Name of the availability zone. If omitted, the virtual server will be created in an existing availability zone.
<i>deployToDedicatedInstance</i>	Deploy to dedicated instance	Specify "true" to deploy the virtual server to a dedicated instance. Specify "false" to not deploy the virtual server to a dedicated instance. If omitted, "false" will be used.

For subnet mask, default gateway, etc., the network resource value specified in NetworkLink of each NIC will be used.

Response

Status code

202 Accepted

Body

Task information

1.7.5.3 List virtual servers

Description

Lists virtual servers.

Request

Header

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

GET

Path

/l_servers

Query

Argument name	Description
state	Specify "registered" to retrieve information about virtual servers that have already been created. If omitted, information about virtual servers still being created will also be retrieved.

Body

n/a

Response

Body

```
<LServers>
  <LServer name="virtualServerName1" id="virtualServerId1">
    <AvailabilityZone>availabilityZone</AvailabilityZone>
    <Dedicated>dedicatedInstance</Dedicated>
  </LServer>
  <LServer name="virtualServerName2" id="virtualServerId2">
    <AvailabilityZone>availabilityZone</AvailabilityZone>
    <Dedicated>deployedToDedicatedInstance</Dedicated>
  </LServer>
</LServers>
```

Item	Description	Details
<i>virtualServerId</i>	ID allocated to the virtual server	ID
<i>availabilityZone</i>	Name of the availability zone where the virtual server exists	Availability zone name
<i>deployedToDedicatedInstance</i>	Indicates whether a virtual server is a dedicated instance	- If "true": Indicates that the virtual server is a dedicated instance - If "false": Indicates that the virtual server is not a dedicated instance

1.7.5.4 Retrieve virtual server details

Description

Retrieves detailed information about the specified virtual server.

Request

Header

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

GET

Path

/l_servers/virtualServerResourceId

Query

Argument name	Description
internal	This parameter is used to retrieve the base image ID of a cloning image specified during creation of the virtual server. This parameter is intended for use by system administrators. However, the base image ID can be retrieved even if specified by a regular user (it will not result in error). • "true" Retrieves the base image ID • "false" (optional) Does not retrieve the base image ID

Body

n/a

Response

Status code

200 OK

Body

```

<Resources>
  <LServer name="virtualServerName" id="virtualServerId">
    <TemplateLink name="virtualServerTemplName" />
    <Disks>
      <Disk name="diskName">
        <DiskLink name="diskNameAllocatedToVirtualServer" id="DiskID" /
>
        <DiskIndex>diskNum</DiskIndex>
        <DiskSize>diskSize</DiskSize>
        <DevicePath>devicePath</DevicePath>
      </Disk>
    </Disks>
    <NICs>
      <NIC>
        <NICIndex>nicNum</NICIndex>
        <MacAddress>macAddr</MacAddress>
        <NetworkLinks>
          <NetworkLink name="networkName" id="NetworkID">
            <IpAddress auto="ipAutoConfigure" address="ipAddr"/>
          </NetworkLink>
        </NetworkLinks>
      </NIC>
    </NICs>
    <Status>
      <ResourceStatus>resourceStatus</ResourceStatus>
      <PowerStatus>powerStatus</PowerStatus>
      <BaseImageId>baseImageId</BaseImageId>
    </Status>
    <Snapshots>
      <Snapshot version="snapshotGeneration" date="snapshotDatetime"
id="snapshotResourceId"/>
      <Snapshot version="snapshotGeneration" date="snapshotDatetime"
id="snapshotResourceId"/>
      <Snapshot version="snapshotGeneration" date="snapshotDatetime"
id="snapshotResourceId"/>
    </Snapshots>
    <AvailabilityZone>availZone</AvailabilityZone>
    <Dedicated>deployedToDedicatedInstance</Dedicated>
  </LServer>
</Resources>

```

Item	Description	Details
<i>snapshotGeneration</i>	Generation of the snapshot	Numeric characters.
<i>snapshotDatetime</i>	Snapshot retrieval datetime	Datetime. 2015/06/12-09:44:42
<i>snapshotResourceId</i>	Resource ID of the snapshot	ID format
<i>diskName</i>	Disk name allocated to the virtual server	If a disk (such as a disk connected to RDM of SAP for virtual server or to an unsupported device) that cannot be managed by the delivery platform is connected, an empty value is returned.
<i>diskId</i>	Resource ID of the disk	Same as above.
<i>diskSize</i>	Size of the disk	Refer to diskSize of Create virtual server on page 150 for details.

Item	Description	Details
<i>devicePath</i>	Device path or identifier for the connection to the disk	SCSI:0:0, etc.
<i>macAddr</i>	MAC address allocated to the NIC of the virtual server	XX:XX:XX:XX:XX:XX
<i>resourceStatus</i>	Status of the virtual server	normal, warning, stop, error, fatal, unknown
<i>powerStatus</i>	Power status of the virtual server	on, off, unknown
<i>baseImageId</i>	Base image ID of a cloning image specified during creation of the virtual server	ID format (up to 32 alphanumeric characters)
Refer to the creation API for details on other elements		

1.7.5.5 Start virtual server

Description

Starts the virtual server (power on).

There is no waiting for the operating system to start.

Request

Header

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

PUT

Path

/l_servers/virtualServerResourceId/start

Query

n/a

Body

n/a

Response

Status code

202 Accepted

Body

Task information

1.7.5.6 Stop virtual server

Description

Stops the virtual server (power off).

Request

Header

Content-Type: application/x-www-form-urlencoded

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

PUT

Path

/l_servers/virtualServerResourceId/stop

Query

n/a

Body

Argument name	Description
force	Force option "true" Performs a forced stop "false" (optional) Does not perform a forced stop

Response

Status code

202 Accepted

Body

Task information

1.7.5.7 Restart virtual server

Description

Restarts (reboots) the virtual server.

Request

Header

Content-Type: application/x-www-form-urlencoded

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

>PUT

Path

/l_servers/virtualServerResourceId/restart

Query

n/a

Body

Argument name	Description
force	Force option "true" Performs a forced restart "false" (optional) Does not perform a forced restart

Response

Status code

202 Accepted

Body

Task information

1.7.5.8 Delete virtual server

Description

Deletes a virtual server

Stop (power off) the virtual server before deleting it.

Request

Header

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

>DELETE

Path

/l_servers/virtualServerResourceId

Query

n/a

Body

n/a

Response

Status code

202 Accepted

Body

Task information

1.7.5.9 Change virtual server

Description

Changes the registration information of the specified virtual server.

It is possible to make changes to the name and server specs (number of CPUs, CPU performance, and memory).

To downsize CPU or memory, it is necessary to stop the virtual server first.

Request

Header

Content-Type: application/xml

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

PUT

Path

/l_servers/*virtualServerResourceId*

Query

n/a

Body

The content will be changed if it is different to the current settings.

```
<Resources>
  <LServer name="virtualServerName">
    <TemplateLink name="virtualServerTemplateName"/>
  </LServer>
</Resources>
```

Item	Description	Details
Refer to the creation API for details		

Response

Status code

202 Accepted

Body

Task information

1.7.5.10 Attach disk to virtual server

Description

Attaches a disk to the specified virtual server.

Request

Header

Content-Type: application/x-www-form-urlencoded

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

PUT

Path

/l_servers/*virtualServerResourceId*/attach

Query

n/a

Body

Argument name	Description
index	Disk index (optional). Integer starting from 1. If omitted, <i>largestDiskNum</i> + 1 will be used. Even if the disk numbers are not consecutive, the way of allocating numbers is the same (for example, if the disk numbers are 1,3 and a disk is attached, the disk numbers become 1,3,4)
disk_size	Disk capacity Number with up to one decimal place, in GB.

Response

Status code

202 Accepted

Body

Task information

1.7.5.11 Detach disk from virtual server

Description

Detaches the specified disk from the specified virtual server.

Stop (power off) the virtual server before detaching the disk.

Note that the disk number of the remaining disks will remain unchanged after detachment (for example: if the disk numbers are 0,1,2 and 1 is detached, the disk numbers become 0,2)

Request

Header

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

PUT

Path

/l_servers/virtualServerResourceId/detach

Query

n/a

Body

Argument name	Description
disk_rid	Resource ID of the disk to be detached.

Response

Status code

202 Accepted

Body

Task information

1.7.5.12 Attach NIC to virtual server

Description

Attaches an NIC to the specified virtual server.

The NIC number is set by assigning an available sequential number starting from 0

(for example: if the NIC numbers are 0,2 and an NIC is attached, NIC numbers become 0,1,2, and if NIC numbers are 0,1,2 and an NIC is attached, NIC numbers become 0,1,2,3).

Snapshots of the virtual server must be deleted before performing this operation.

Request

Header

Content-Type: application/x-www-form-urlencoded

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

PUT

Path

/l_servers/virtualServerResourceId/attach

Query

n/a

Body

Argument name	Description
type	Specify "nic".
network_rid	Resource ID of the network to which the NIC will be connected
ip_address	IP address assigned to the NIC (optional) If omitted, an address will be assigned automatically.

Response

Status code

202 Accepted

Body

Task information

1.7.5.13 Detach NIC from virtual server

Description

Detaches the specified NIC from the virtual server.

Note that the NIC number of the NICs will remain unchanged after detachment (for example: if the NIC numbers are 0,1, 2 and NIC number 1 is detached, NIC numbers become 0,2).

Snapshots of the virtual server must be deleted before performing this operation.

Request

Header

Content-Type: application/x-www-form-urlencoded

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

PUT

Path

/l_servers/virtualServerResourceId/detach

Query

n/a

Body

Argument name	Description
type	Specify "nic".
index	NIC number Integer starting from 0.

Response

Status code

202 Accepted

Body

Task information

1.7.5.14 Create clone image

Description

Creates a clone image from a virtual server.

Stop the target virtual server before creating a clone image.

An error will occur if an image with the same name already exists in the project.



Caution

The virtual server where the clone image is created must reflect the specific information (computer name, IP address, etc.) specified during creation of the virtual server in the operating system. The specific information will be reflected in the operating system when the virtual server is started.

Therefore, for the virtual server where the clone image is created, specify one that has been started once.

If you create a clone image from a virtual server that has not been started at all, clone image creation will be successful, however, an error will occur when creating a virtual server using that clone image.

Request

Header

Content-Type: application/x-www-form-urlencoded

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: Project ID of resource creation destination (*2)

X-VA-Domain-Id: Domain ID of resource creation destination (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

POST

Path

/server_images

Query

n/a

Body

Argument name	Description
Name	Specifies the clone image name. Specify a string of up to 32 characters using halfwidth alphanumeric characters and underscores (_). It must start with a halfwidth letter.
type	Specify "cloning".
l_server_rid	Specifies the resource ID of the virtual server where the clone image will be created.
comment	Specifies comments for the clone image (optional). Specify a string of up to 96 characters using halfwidth or fullwidth characters, except for percent (%), backslash (\), double quotation mark ("), and line feed characters.

Response

Status code

202 Accepted

Body

Task information

However, <resource id="*resourceId*"/> is not displayed.

1.7.5.15 Delete clone image

Description

Deletes a clone image.

Request

Header

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

DELETE

Path

/server_images/*cloneImageName*

Query

Argument name	Description
type	Specify "cloning".

Body

n/a

Response

Status code

202 Accepted

Body

Returns information on tasks executed by each availability zone.

However, <resource id="*resourceId*"/> is not displayed.

```
<tasks>
  <task>
    <id>taskId</id>
    <status>>waiting</status>
    <progress>0</progress>
    <starttime>startTime</starttime>
    <AvailabilityZone>availabilityZoneName</AvailabilityZone>
  </task>
  <task>
    <id>taskId</vid>
    ...
  </task>
</tasks>
```

1.7.5.16 List clone images

Description

Lists images.

Request

Header

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

GET

Path

/server_images

Query

Argument name	Description
verbose	To retrieve only some of the information, specify "false", or to retrieve all of the information, specify "true". If omitted, "false" is used.
mode	Specify "cloning".
disksize	Specify "true" to retrieve disk information held by an image. Specify "false" to not retrieve disk information held by an image. If omitted, "false" will be used.
availability_zone	Specifies the name of the availability zone where the list of images will be retrieved from. If omitted, a list of images will be retrieved from all availability zones.

Response

Status code

200 OK

Body

If verbose=false, mode=cloning, and disksize=false:

```
<ServerImages>
  <ServerImage name="imageName1">
    <Scope>imageDisclosureScope</Scope>
    <Project>idOfProjWhereImageWasCreated</Project>
    <AvailabilityZone>availZone</AvailabilityZone>
  </ServerImage>
  <ServerImage name="imageName2">
    <Scope>imageDisclosureScope</Scope>
    <Project>idOfProjWhereImageWasCreated</Project>
    <AvailabilityZone>availZone</AvailabilityZone>
  </ServerImage>
</ServerImages>
```

If verbose=true, mode=cloning, and disksize=false:

```
<ServerImages>
  <ServerImage name="imageName1">
    <Scope>imageDisclosureScope</Scope>
    <Project>idOfProjWhereImageWasCreated</Project>
    <AvailabilityZone>availZone</AvailabilityZone>
    <Comment>comment</Comment>
    <CreateTime>creationDatetime</CreateTime>
  </ServerImage>
  <ServerImage name="imageName2">
    <Scope>imageDisclosureScope</Scope>
    <Project>idOfProjWhereImageWasCreated</Project>
    <AvailabilityZone>availZone</AvailabilityZone>
```

```

    <Comment>comment</Comment>
    <CreateTime>creationDatetime</CreateTime>
  </ServerImage>
</ServerImages>

```

If verbose=true, mode=cloning, and disksize=true:

```

<ServerImages>
  <ServerImage name="imageName1">
    <Scope>imageDisclosureScope</Scope>
    <Project>idOfProjWhereImageWasCreated</Project>
    <AvailabilityZone>availZone</AvailabilityZone>
    <Comment>comment</Comment>
    <CreateTime>creationDatetime</CreateTime>
    <Disks>
      <Disk>
        <DiskIndex>diskNum</DiskIndex>
        <DiskSize>diskSize</DiskSize>
      </Disk>
      <Disk>
        <DiskIndex>diskNum</DiskIndex>
      </Disk>
      ...
    </Disks>
  </ServerImage>
  <ServerImage name="imageName2">
    <Scope>imageDisclosureScope</Scope>
    <Project>idOfProjWhereImageWasCreated</Project>
    <AvailabilityZone>availZone</AvailabilityZone>
    <Comment>comment</Comment>
    <CreateTime>creationDatetime</CreateTime>
    <Disks>
      ...
    </Disks>
  </ServerImage>
</ServerImages>

```

- If "availability_zone" was specified:

Only images located in the specified availability zone are displayed.

Example: If verbose=false, mode=cloning, and disksize=false:

If some images have availability_zone specified:

```

<ServerImages>
  <ServerImage name="imageName1">
    <Scope>imageDisclosureScope</Scope>
    <Project>idOfProjWhereImageWasCreated</Project>
    <AvailabilityZone>availZone</AvailabilityZone>
  </ServerImage>
  <ServerImage name="imageName2">
    <Scope>imageDisclosureScope</Scope>
    <Project>idOfProjWhereImageWasCreated</Project>
    <AvailabilityZone>availZone</AvailabilityZone>
  </ServerImage>
</ServerImages>

```

Item	Description	Details
<i>imageName</i>	Name of image	Name of the clone image.
<i>imageDisclosureScope</i>	The scope of disclosure of an image	public Displayed when the image is public.

Item	Description	Details
		- domain> Displayed when a private image is disclosed inside the domain. - private Displayed when a private image is only disclosed inside the project.
<i>idOfProjWhereImageWasCreated</i>	ID of the project where the image was created	ID of the project where the clone image was created. Note that for public images, the Project tag will not be displayed.
<i>availZone</i>	Name of the availability zone where the virtual server exists	Availability zone name
<i>comment</i>	Comment of image	String of up to 128 characters using halfwidth or fullwidth characters, except for percent (%), backslash (\), double quotation mark ("), and line feed characters.
<i>creationDatetime</i>	Datetime when image was created (local time)	YYYY-MM-DD hh:mm:ss hh:mm
<i>diskNum</i>	Number of the disk that the virtual server is connected to when the target image is distributed	Fixed as "0".
<i>diskSize</i>	Capacity of the target disk	Disk capacity in GB

1.7.5.17 Change disclosure scope of clone image

Description

Changes the disclosure scope of a clone image.

The types of images for which the disclosure scope can be changed are as follows:

- Private images of own project that are disclosed inside the domain.
- Private images that are only disclosed inside the project.

Request

Header

Content-Type: application/x-www-form-urlencoded

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

PUT

Path

/server_images/*cloneImageName*/move

Query

n/a

Body

Argument name	Description
scope	- To change the disclosure scope of a clone image to inside the domain Specify "domain". - To change the disclosure scope of a clone image to inside the project Specify "private".

Response

Status code

202 Accepted

Body

Returns information on tasks executed by each availability zone.

However, <resource id="*resourceId*"/> is not displayed.

```
<tasks>
  <task>
    <id>taskId</id>
    <status>waiting</status>
    <progress>0</progress>
    <starttime>startTime</starttime>
    <AvailabilityZone>availabilityZoneName</AvailabilityZone>
  </task>
  <task>
    <id>taskId</id>
    ...
  </task>
</tasks>
```

1.7.5.18 Create snapshot

Description

Creates a snapshot from a virtual server.

While snapshots can be created even while the virtual server is running, this may impact on virtual server operations.

Therefore, it is recommended that you stop the virtual server before creating a snapshot.

Request

Header

Content-Type: application/x-www-form-urlencoded

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

POST

Path

/server_images

Query

n/a

Body

Argument name	Description
type	Specify "snapshot".
l_server_rid	Specifies the resource ID of the virtual server where the snapshot will be created.

Response

Status code

202 Accepted

Body

Task information

The resource ID of the virtual server is displayed in <resource id="*resourceId*"/>.

1.7.5.19 Restore snapshot

Description

Restores a snapshot for a virtual server.

Request

Header

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

PUT

Path

/server_images/*snapshotResourceId*/restore

Query

n/a

Body

n/a

Response

Status code

202 Accepted

Body

Task information

1.7.5.20 Delete snapshot

Description

Deletes a snapshot.

Request

Header

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

DELETE

Path

/server_images/snapshotResourceId

Query

Argument name	Description
type	Specify "snapshot".

Body

n/a

Response

Status code

202 Accepted

Body

Task information

1.7.5.21 Retrieve task details

Description

Retrieves detailed information about the specified task.

Request

Header

Accept: application/xml

X-Auth-Token: Keystone token

Method

>GET

Path

/tasks/taskId

Query

n/a

Body

n/a

Response

Status code

200 OK

Body

```
<task>
  <id>taskId</id>
  <status>status</status>
  <progress>progressStatus</progress>
  <starttime>startTime</starttime>
  <endtime>endTime</endtime>
  <error>
    <code>msgId</code>
    <message>msgBody</message>
    <arg>arg1</arg>
    <arg>arg2</arg>
    ...
  <cause>
    <product>relatedProdName</product>
    <resource_name>linkedProdResourceName</resource_name>
    <request>inforRequestedForRelatedProd</request>
    <message>returnInfoOfRelatedProd</message>
  </cause>
</error>
</task>
```

Note: The error tag is only displayed if an error occurs.

Item	Description	Details
<i>taskId</i>	ID for identifying the task	ID format
<i>status</i>	Status of the task	waiting, running, completed, error, cancelled
<i>progressStatus</i>	Progress status (%) of the task	Number from 0 to 100
<i>startTime</i>	Start time of the task (local time)	YYYY-MM-DD hh:mm:ss hh:mm
<i>endTime</i>	End time of the task (local time)	YYYY-MM-DD hh:mm:ss hh:mm

Refer to [HTTP response](#) on page 147 for details on the other elements.

1.7.5.22 Enable project

Description

Creates a folder for the specified project, and enables the project.

The folder name will be the project ID.

Do not create and delete files concurrently for the same project.



Caution

- The project folder is created in the folder of the domain that it belongs to.
If the domain folder does not exist, it will be created at the same time.
- The following resource pools are also created in the project folder.
VADomainImagePool (the disclosure scope is the private image pool in the domain)
VAPrivateImagePool (the disclosure scope is the private image pool in the project)
VAPrivateNetworkPool (network pool used inside the project)
- If a project folder of the same name already exists, this indicates that it completed normally.
If the resource pool for the virtual server for SAP does not yet exist, it will be created.

Request

Header

Content-Type: application/x-www-form-urlencoded

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: Specify the scope of the project to be enabled, and retrieve a token.

*3: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

POST

Path

/projects

Query

n/a

Body

Argument name	Description
project_id	Specifies the project ID retrieved from Keystone. Do not include symbols such as hyphens (-). Note that the ID specified here is not case-sensitive (the name of the folder will be converted to lowercase). In case specifying the project the user doesn't belong to, that operation results in error. If you are a system administrator, an error will occur if you specify a value different from the project ID.

Argument name	Description
availability_zone	Specifies the name of the availability zone where the project folder should be created. If omitted, project folders will be created in all availability zones.

Response

Status code

202 Accepted

Body

Returns information on tasks executed by each availability zone.

However, `<resource id="resourceId"/>` is not displayed.

```
<tasks>
  <task>
    <id>taskId</id>
    <status>waiting</status>
    <progress>0</progress>
    <starttime>startTime</starttime>
    <AvailabilityZone>availabilityZoneName</AvailabilityZone>
  </task>
  <task>
    <id>taskId</id>
    ...
  </task>
</tasks>
```

1.7.5.23 Disable project

Description

Deletes the folder for the specified project, and disables the project.

All resources in the project must be deleted before performing this operation.

In case specifying the project the user doesn't belong to, that operation results in error.

After a project is disabled, even if it is enabled again later, its resources cannot be restored.



Note

- The following resource pools in the specified project folder are also deleted.
VADomainImagePool (the disclosure scope is the private image pool in the domain)
VAPrivateImagePool (the disclosure scope is the private image pool in the project)
VANetworkPool (network pool used inside the project)
- The project folder will not be deleted if it contains a resource pool for bare metal services.
- When the system administrator uses this API, an error will occur if a value different from the project ID is specified in the header.

Request

Header

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: Specify the scope of the project to be disabled, and retrieve a token.

When the system administrator uses this API, the scope specified for the token is ignored.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

DELETE

Path

/projects/*projId*

Query

Argument name	Description
availability_zone	Specifies the name of the availability zone where the project folder should be deleted. If omitted, project folders will be deleted from all availability zones.

Body

n/a

Response

Status code

202 Accepted

Body

Returns information on tasks executed by each availability zone.

However, <resource id="*resourceId*"/> is not displayed.

```
<tasks>
  <task>
    <id>taskId</id>
    <status>waiting</status>
    <progress>0</progress>
    <starttime>startTime</starttime>
    <AvailabilityZone>availabilityZoneName</AvailabilityZone>
  </task>
  <task>
    <id>taskId</id>
    ...
  </task>
</tasks>
```

1.7.5.24 Retrieve project details

Description

Retrieves detailed information about the specified project

When you select the project that you do not belong to, it becomes an error.



Note

When the system administrator uses this API, an error will occur if a value different from the project ID is specified in the header.

Request

Header

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: Specify the scope of the project for which detailed information is to be retrieved, and retrieve a token.

When the system administrator uses this API, the scope specified for the token is ignored.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

GET

Path

/projects/*projId*

Query

n/a

Body

n/a

Response

Status code

200 OK

Body

```
<Project name="projFolderName">
  <Domain>domainFolderName</Domain>
  <AvailabilityZones>
    <AvailabilityZone>availZoneWithProjFolder</AvailabilityZone>
    <AvailabilityZone>availZoneWithProjFolder</AvailabilityZone>
    ...
  </AvailabilityZones>
```

```

        <Dedicated>
        <DedicatedAZ>availZoneWhereDedicInstancesCanBeDeployed</
DedicatedAZ>
        <DedicatedAZ>availZoneWhereDedicInstancesCanBeDeployed</
DedicatedAZ>
        ...
    </Dedicated>
</Project>

```

Item	Description	Details
<i>projFolderName</i>	Name of the project folder	Name (project ID) of the project folder.
<i>domainFolderName</i>	Name of the domain folder	Name (domain ID) of the domain folder (domain to which the project belongs).
<i>availZoneWithProjFolder</i>	Name of the availability zone containing the project folder	Name of the availability zone containing the project folder.
<i>availZoneWhereDedicInstancesCanBeDeployed</i>	Name of the availability zone where dedicated instances can be deployed	Name of the availability zone where dedicated instances can be deployed.

1.7.5.25 Create network resource

Description

Creates a network resource.

A job LAN network is created for virtual server for SAP or for bare metal services, based on the network already created using OpenStack.

The network resource name is generated automatically, and the following prefix is assigned according to the service:

-VAServiceLAN_****: Job LAN resources of the virtual server for SAP

-BAServiceLAN_****: Job LAN resources for bare metal services



For creating network resource by using the custom role, please execute by a user to whom com-w_network_create and net_get_subnet role are given.

Caution

Request

Header

Content-Type: application/xml

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: Project ID of resource creation destination (*2)

X-VA-Domain-Id: Domain ID of resource creation destination (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

POST

Path

/networks

Query

n/a

Body

```
<Network>
  <Subnet id="subnetIdCreatedUsingOpenstack" />
  <AvailabilityZone>availZone</AvailabilityZone>
</Network>
```

Item	Description	Details
<i>subnetIdCreatedUsingOpenstack</i>	Subnet ID created using Openstack (required)	UUID
Availability zone	Availability zone of the creation destination (optional)	Availability zone name

Response

Status code

202 Accepted

Body

Task information

1.7.5.26 Delete network resource

Description

Deletes a network resource.

Request

Header

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

DELETE

Path

/networks/*networkResourceId*

Query

n/a

Body

n/a

Response

Status code

202 Accepted

Body

Task information

1.7.5.27 List network resources

Description

Lists the network resources of all availability zones.

Only the network resources owned by the project are displayed.

- When a list of networks for bare metal services (endpoint) is retrieved, the following is displayed.
 - Job LAN network of bare metal services
- When a list of networks for virtual server for SAP (endpoint) is retrieved, the following is displayed.
 - Job LAN network of virtual server for SAP

Request

Header

Accept: application/xml

X-Auth-Token: Keystone token (*1)

X-VA-Project-Id: ID of the project that owns the resource (*2)

X-VA-Domain-Id: ID of the domain that owns the resource (*2)

*1: The scope specified for the token is ignored when this API is executed by the system administrator.

*2: Mandatory when this API executed by the system administrator, ignored when executed by other users.

Method

GET

Path

/networks

Query

Argument name	Description
verbose	To retrieve only some of the information, specify "false", or to retrieve all of the information, specify "true". If omitted, "false" is used.

Body

n/a

Response

Status code

200 OK

Body

If verbose=false:

```
<Networks>
  <Network name="networkResourceName1" id="networkResourceId1">
    <AddressSet name="addrSetName1" subnet="subnetAddr" mask="netMask"
start="startIpAddr" end="endIpAddr">
      <DefaultGateway address="ipAddr" />
    </AddressSet>
    <Subnet id="subnetUuid">
      <AvailabilityZone>availZoneName</AvailabilityZone>
    </Subnet>
  </Network>
  <Network name="networkResourceName2" id="networkResourceId2">
    Omitted
  </Network>
</Networks>
```

If verbose=true:

```
<Networks>
  <Network name="networkResourceName1" id="networkResourceId1">
    <AddressSet name="addrSetName1" subnet="subnetAddr" mask="netMask"
start=" start="startIpAddr" end="endIpAddr"/>
      <Exclude>
        <AddressRange start="startIpAddr" end="endIpAddr" />
      </Exclude>
      <Reserve>
        ipAddrAlreadyAssigned (IP addresses are separated with commas)
      </Reserve>
      <DefaultGateway address="ipAddr" />
    </AddressSet>
    <Subnet id="subnetUuid">
```

```

<AvailabilityZone >availZoneName</AvailabilityZone>
</Network>
<Network name="networkResourceName2" id="networkResourceId2">
  Omitted
</Network>
</Networks>

```

Tag name: Network

Item	Description	Details
name	Name of network resource	Name of the network resource. The network resource names have the following prefixes: - VAServiceLAN_****: Job LAN resources of the virtual server for SAP - BAServiceLAN_****: Job LAN resources for bare metal services
id	Network resource ID	Network resource ID.

Tag name: AddressSet

Item	Description	Details
name	Name of address set resource	Name of the address set resource. The address set resource names have the following prefixes: - VAServiceAS_**** : Job LAN address set resources of the virtual server for SAP - BAServiceLAN_**** : Job LAN address set resources for bare metal services
subnet	Subnet address	Subnet address. (example: 192.168.10.0)
mask	Subnet mask	Subnet mask. (example: 255.255.255.0)
start	Start IP address	Start IP address for automatic setup. (example: 192.168.10.1)
end	End IP address	End IP address for automatic setup. (example: 192.168.10.254)

Tag name: Exclude

Item	Description	Details
	Address range for manual setup	If the address range for manual setup has not been set, the AddressRange tag will not be displayed. If multiple address ranges for manual setup have been set, multiple AddressRange tags will be displayed.

Tag name: AddressRange

Item	Description	Details
start	Start IP address	Start IP address for manual setup. (example: 192.168.10.1)
end	End IP address	End IP address for manual setup. (example: 192.168.10.1)

Tag name: Reserve

Item	Description	Details
	IP address that has already been assigned	IP addresses that have already been assigned. Example of multiple IP addresses that have already been assigned: 192.168.10.30, 192.168.10.31

Tag name: DefaultGateway

Item	Description	Details
address	IP address of the default gateway	IP address of the default gateway. (example: 192.168.10.1)

1.7.6 Status codes in use

Status code	Description
200: OK	OK The request was successful, and the response was returned with the requested information. If the page is displayed correctly in the browser, this status code will be returned in most cases.
201: Created	Created The request was successful, and the URI of the created resource is returned. Example: When a request to create a resource using the PUT method is made, this code is returned on completion of that request.
202: Accepted	Accepted The request was accepted, however, processing has not been completed. Example: When a request to create a resource using the PUT method is made, this code is returned when the server has accepted the request but creation of the resource has not been completed. For batch processing.
400: Bad Request	The request is invalid. This code is returned when a client request is abnormal (such as using an undefined method).
401: Unauthorized	Authentication is required. Used when performing Basic or Digest authentication. Most browsers display an authentication dialog when this status is returned.
403: Forbidden	Forbidden. Access to the resource was denied. This code is returned in cases such as the user not having access privileges, or the host received a banned request. Example: An attempt is made to access a page from outside the company when access to that page is only allowed internally (intranet).
404: Not Found	Not found. The resource could not be found. This code is also used when the user simply does not have access privileges.

Status code	Description
405: Method Not Allowed	Method not allowed. An attempt was made to use a method that is not permitted. Example: When the POST method is used at a location where use of the POST method is not permitted.
406: Not Acceptable	Not acceptable. This code is returned in cases when unacceptable content is included in an Accept-related header. Example: The server can only accept English or Japanese, however, only zh (Chinese) is included in the Accept-Language: header of the request. Example: The server tried to send an application/pdf document, however, application/pdf was not included in the Accept: header of the request. Example: The server tried to send text in UTF-8 format, however, utf-8 was not included in the Accept-Charset: header of the request.
408: Request Timeout	Request timeout This code is returned when a request is not completed within a specified time.
409: Conflict	Conflict The request cannot be completed due to a conflict with an existing resource.
410: Gone	Gone The file was moved permanently. Its location is unknown. This code is similar to 404 Not Found, however, it indicates that the file will not be recovered.
412: Precondition Failed	Precondition failed This code is returned when a precondition is false. Example: When an update occurs after the time when the If-Unmodified-Since: header of the request was written.
413: Request Entity Too Large	Request entity is too large. This code is returned when a request entity exceeds the range permitted by the server. Example: When an attempt was made to send data that exceeded the upper limit of the uploader.
414: Request-URI Too Long	Request URI is too long. This code is returned when the server rejects processing due to the URI being too long. Example: When an attempt is made to send large data such as image data using the GET method, and the URI is tens of KB in length (the upper limit depends on the server).
415: Unsupported Media Type	Unsupported media type. This code is returned when the specified media type is not supported.
416: Requested Range Not Satisfiable	Requested range is not satisfiable. Data exceeding the actual file size was requested. For example, when an attempt is made to retrieve 1025 Bytes, yet the size of the resource is only 1024 Bytes.

Status code	Description
417: Expectation Failed	Expectation failed The extension cannot be responded to, or the proxy server deems that the next server to receive a request cannot respond. As a specific example, when an unusual value other than 100-continue is entered in the Expect: header, or the server cannot handle 100 Continue in the first place.
500: Internal Server Error	Internal server error. This code is returned when an internal error occurs on the server. For example, when there is a syntax error or setting error in CGI. The syntax of CGI is incorrect.

1.7.7 Error messages



Note

The error message list only describes errors that occur in the delivery platform region manager.

Common

Status code	Error messages	Cause
404 \${0}:not supported	\${0}: URI path, or URI path followed by query	An unsupported URL was executed.
412	The specified system configuration file, "\${0}", is invalid. \${0}: File path	The definition file does not exist. The definition file format is incorrect.
404	Selectable Availability Zone not found. (\${0}) \${0}: Reason why availability zone of request transfer destination could not be found	The availability zone of the request transfer destination could not be found.
409	communication error. {0} \${0}: Request header name	A required request header was not specified.
409	Connection refused - Connection refused	The delivery platform environment has stopped.
409	certificate verify failed	The certificate of the delivery platform is invalid.
409	Text explaining why communication was not possible	Unable to communicate with the delivery platform environment.

Status code	Error messages	Cause
412	`\${0}`:invalid format `\${0}`: Parameter name	An invalid value was specified for the request parameter.
400	`\${0}` is required `\${0}`: Parameter name	A required parameter was not specified.
409	configuration error. target=`\${0}` `\${0}`: Region name	The availability zone is not defined on the delivery platform region manager.
403	`\${0}`:user not privileged `\${0}`: User ID	An error occurred during approval processing.
500	Internal Server Error	An error occurred.

Create virtual server

Status code	Error messages	Cause
404	`\${0}`:not found `\${0}`: Image name	The specified clone image does not exist.
409	`\${0}`:duplicate resource name found `\${0}`: Virtual server name	A virtual server with the same name as the specified virtual server already exists.
404	`\${0}`:not found.(`\${1}`) `\${0}`: Network endpoint, `\${1}`: Literal text "specified resource (network) not found"	The specified network resource was not found

Change virtual server

Status code	Error messages	Cause
412	`\${0}`:invalid format `\${0}`: TemplateLink,name	The VM pool corresponding to the virtual server template is not defined.
404	`\${0}`:not found `\${0}`: LServer (resource ID of the virtual server)	The specified virtual server does not exist.
409	`\${0}`:duplicate resource name found `\${0}`: Virtual server name	A virtual server with the same name as the new virtual server name already exists.

Attach NIC to virtual server

Status code	Error messages	Cause
404	`\${0}`:not found.(`\${1}`) `\${0}`: Network endpoint, `\${1}`: Literal text "specified resource (network) not found"	The specified network resource was not found

Create image

Status code	Error messages	Cause
409	`\${0}`:configuration for `\${1}` not found `\${0}`: Project folder, `\${1}`: collecting image	The image pool does not exist.
409	`\${0}`:configuration for `\${1}` not found `\${0}`: Region, `\${1}`: Collecting image	The storage pool for images does not exist.
409	`\${0}`:duplicate resource name found `\${0}`: Clone image name	An image with the same name as the one specified for the clone image already exists.

Create network resource

Status code	Error messages	Cause
404	`\${0}`:not found.(`\${1}`) `\${0}`: Network endpoint, `\${1}`: Can be any of the following: 1. `\${1}`=<i>availZone</i>:specified subnet uuid is not found 2. `\${1}`=<i>availZone</i>:subnet is for KVM. uuid:<i>subnetUuid</i> 3. `\${1}`=<i>availZone</i>:<i>endpoint</i> does not authorize user 4. `\${1}`=<i>availZone</i>:"keystone endpoint", endpoint(<i>endpoint</i>) is not valid value 5. `\${1}`=<i>availZone</i>:response from endpoint(<i>endpoint</i>) may be not keystone's one 6. `\${1}`=<i>availZone</i>:availability_zone: <availability_zone> not found 7. `\${1}`=<i>availZone</i>:network with specified subnet uuid is not found <i>availZone</i> is replace with the availability zone.	1. The specified subnet does not exist in <i>availZone</i> or, Custom roles are used but the <code>net_get_subnet</code> role has not been set. 2. <i>subnetUuid</i> is not the subnet for virtual server for SAP. 3. The specified token is not suitable. 4. The <i>endpoint</i> of the specified token is invalid. 5. The <i>endpoint</i> of the specified token is other than keystone. 6. The specified <availability_zone> does not exist

Status code	Error messages	Cause
		7. The network to which the specified subnet belongs does not exist.
409	network create failed.({0}) {0}: Can be any of the following: 1. already exist network linked for specified subnet. (<i>subnetUuid</i>) 2. specified subnet(<i>subnetUuid</i>) is being used by other operations. 3. not for linked subnet, resource_id: <i>subnetUuid</i>	1. Network resources have already been created for the specified subnet. 2. Processing is in progress elsewhere for the subnet. That is, network resources are being created for the subnet, or the subnet is being deleted in OpenStack. 3. The subnet uuid is incorrect or is not the one created for the virtual server for SAP.

Delete network resource

Status code	Error messages	Cause
404	{0}:not found.({1}) {0}: Network endpoint, {1}: Literal text "specified resource (network) not found"	The specified network resource was not found

Enable project/Disable project/Retrieve project details

Status code	Error messages	Cause
409	The value of {0}, {1}, is invalid. {0}: project_id, {1}: value specified for project_id	This error occurs only if the API was executed by the administrator. The project ID specified in the header is different from the one specified for the project_id argument.

1.8 Other (common)

1.8.1 Generate URLs when using APIs

For URLs to be used by APIs of the following categories, use URLs of the "compute" type from the Service catalog retrieved from the identity service.

- Key pairs
- Server console output
- Get VNC Console
- Images with size attribute
- Server password

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

https://hostName/v2/{tenant_id}

Host portion Path portion

Create the URL in one of the following formats:

- If you remember the tenant_id:
Join the path name of each API in the host section of the end point URL
- If you do not remember the tenant_id:
The endpoint URL and the path name of each API with "/v2/{tenant_id}" removed from the beginning

For URLs to be used by APIs of the following categories, use URLs of the "image" type from the Service catalog retrieved from the identity service.

- Image Service API v2 Images

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

https://hostName

Host portion

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

1.8.2 API list

Key pairs

Item	API	Description
1	GET /v2/{tenant_id}/os-keypairs List key pairs	Retrieves a list of the key pairs associated with the account

Item	API	Description
2	POST /v2/{tenant_id}/os-keypairs Create or import key pair	Creates or imports key pairs
3	DELETE /v2/{tenant_id}/os-keypairs/{keypair_name} Delete key pair	Deletes a key pair
4	GET /v2/{tenant_id}/os-keypairs/{keypair_name} Show key pair information	Displays the key pairs associated with the account

Server console output

Item	API	Description
1	POST /v2/{tenant_id}/servers/{server_id}/action Get console output for an instance	Retrieves the console output of the server instance

Get Vnc Console

Item	API	Description
1	POST /v2/{tenant_id}/servers/{server_id}/action Get a VNC console for an instance	Gets VNC console url for a server instance.

Images with size attribute

Item	API	Description
1	GET /v2/{tenant_id}/images/detail List details of images	Lists details of available images and their sizes
2	GET /v2/{tenant_id}/images/{image_id} Get image details	Retrieves the details of the specified image and its size

Server password

Item	API	Description
1	GET /v2/{tenant_id}/servers/{server_id}/os-server-password Get server password	Retrieves the management password of the specified server

Image Service API v2 Images

Item	API	Description
1	PATCH /v2/images/{image_id}	Updates the specified image

Item	API	Description
	Update an image	
2	GET /v2/images{?limit,marker,name,visibility,member_status,owner,status,size_min,size_max,sort_key,sort_dir,tag} List images	Lists public virtual server images
3	GET /v2/images{?limit,marker,name,visibility,member_status,owner,status,size_min,size_max,sort_key,sort_dir,tag} List images	Searches public virtual server images by name, and display a list
4	GET /v2/images/{image_id} Get an image	Retrieves the details of the specified image
5	DELETE /v2/images/{image_id} Delete an image	Deletes the specified image

Members

Item	API	Description
1	POST /v2/images/{image_id}/members Create image member	Adds a tenant (project) for sharing images
2	GET /v2/images/{image_id}/members List image members	Displays a list of tenants (projects) that are sharing images
3	GET /v2/images/{image_id}/members/{member_id} Show image member details	Retrieves details of members who are sharing images
4	DELETE /v2/images/{image_id}/members/{member_id} Delete image member	Deletes the specified tenant (project) from an image sharing member
5	PUT /v2/images/{image_id}/members/{member_id} Update image member	Changes a tenant (project) for sharing images

1.8.3 Request header

Header	Specified value
Accept	application/json
Content-Type	application/json
X-Auth-Token	Authentication token

1.8.4 API error codes

Error code	Description
500, other codes possible	Server Error, cloudServersFault
400	badRequest
401	unauthorized
403	Forbidden, resizeNotAllowed
404	itemNotFound
405	badMethod
409	conflictingRequest
413	overLimit
415	badMediaType, Unsupported Media Type
501	notImplemented
503	serviceUnavailable

1.8.5 Notes

- In some cases, an API (key pair list, etc.) used to display a list of resources may return only part of the availability zone information. If this happens, it is assumed that infrastructure maintenance is in progress, so wait for a few moments (at least one minute) and then execute the API again.
- Description of API error code
This code is returned when execution of the API below is not approved under the operator privileges (role).
 - GET /v2/images/{image_id}/members/{member_id}

1.8.6 API details

1.8.6.1 List key pairs

Method	URI	Description
GET	/v2/{tenant_id}/os-keypairs	Lists key pairs associated with the account.

Normal response codes: 200

Request

This table shows the URI parameters for the list key pairs request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This operation does not require a request body.

Response

Example. List key pairs: JSON 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",
        "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQGC
+Eo/RZRngaGTkFs7I62ZjsIl079KklKbMXi8F+KITD4bVQHHn+kV
+4gRgkgCRbdoDqoGfpaDFs877DYX9n4z6FrAlZ4PES8TNKhatifpn9NdQYWA
+IkU8CuvlEKGuFpKRi/k7JLos/gHi2hy7QUwgtRvcefvD/vgQZOVw/mGR9Q== Generated
byNova\n"
      }
    }
  ]
}
```

1.8.6.2 Create or import key pair

Method	URI	Description
POST	/v2/{tenant_id}/os-keypairs	Creates or imports a key pair.

Normal response codes: 200



Before deleting an account (user), the key pair created by it must be deleted.

Caution

Request

This table shows the URI parameters for the create or import keypair request:

Name	Type	Description
{tenant_id}	String	ID for the tenant or account in a multi-tenancy cloud.

This table shows the body parameters for the create or import keypair request:

Name	Type	Description
name	String	Name to associate with the keypair.
public_key	string (Optional)	Public ssh key to import. If not provided, a key is generated.
availability_zone	string	Availability zone for the key pair.

Name	Type	Description
	(Optional)	If omitted, the availability zone will be determined automatically from the UUID of the domain that the request execution user belongs to.

Example. Create or import key pair: JSON request

```
{
  "keypair": {
    "name": "keypair-dab428fe-6186-4a14-b3de-92131f76cd39",
    "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQGDx8nkQv/
zgGgB4rMYmIf+6A4l6Rr+o/6lHBQdW5aYd44bd8JttDCE/F/pNRR0lRE
+PiqSPO8nDPHw0010JeMH9gYgnnFlyY3/OcJ02RhIPyyxYpv9FhY
+2YiUkpwFOcLImyrxEsYXpD/0d3ac30bNH6Sw9JD9UZHycpSxsIbECHw== Generated by
Nova",
    "availability_zone": "jp-east-1a"
  }
}
```

Response

Example. Create or import key pair: JSON response

```
{
  "keypair": {
    "fingerprint": "1e:2c:9b:56:79:4b:45:77:f9:ca:7a:98:2c:b0:d5:3c",
    "name": "keypair-dab428fe-6186-4a14-b3de-92131f76cd39",
    "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQGDx8nkQv/
zgGgB4rMYmIf+6A4l6Rr+o/6lHBQdW5aYd44bd8JttDCE/F/pNRR0lRE
+PiqSPO8nDPHw0010JeMH9gYgnnFlyY3/OcJ02RhIPyyxYpv9FhY
+2YiUkpwFOcLImyrxEsYXpD/0d3ac30bNH6Sw9JD9UZHycpSxsIbECHw== Generated by
Nova",
    "user_id": "fake"
  }
}
```

1.8.6.3 Delete key pair

Method	URI	Description
DELETE	/v2/{tenant_id}/os-keypairs/ {keypair_name}{?availability_zone}	Deletes a key pair.

Normal response codes: 202

Request

This table shows the URI parameters for the delete key pair request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{keypair_name}	String	The name associated with the key pair.
availability_zone	String	Availability zone for the key pair.

Name	Type	Description
	(optional)	

This operation does not accept a request body and does not return a response body.

1.8.6.4 Show key pair information

Method	URI	Description
GET	/v2/{tenant_id}/os-keypairs/{keypair_name}{?availability_zone}	Retrieves a key pair associated with the account.

Normal response codes: 200

Request

This table shows the URI parameters for the delete key pair request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{keypair_name}	String	The name associated with the key pair.
availability_zone	String (Optional)	Availability zone for the key pair.

This operation does not require a request body.

Response

Example. Show key pair information: JSON response

```
{
  "keypair": {
    "public_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQgQDCSLxfzqB+e5yHdUSXvb
xKkajj1fuhV+GARDseqPjfkKJ6no5echpin7dJp0FLXMJKxJZE3WWIRu25CQrJntmi7no27RkDf
AGaTFbjz3DWY4A1HLeKAB5tFTwYQ1r7CjMdoC/DY7UvKaawLhH4Wvh5vMmXgF7AFzdkI28urwo
+Q== nova@use03147k5-eth0\n",
    "name": "hpdefault",
    "fingerprint": "8b:2f:aa:b0:b8:97:dc:c8:50:aa:d4:8e:d0:34:61:d9",
    "availability_zone": "jp-east-1a"
  }
}
```

1.8.6.5 Get console output for an instance

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/action	Gets console output for a server instance.

Normal response codes: 200

Request

This table shows the URI parameters for the get console output for an instance request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.

This table shows the body parameters for the et console output for an instance request:

Name	Type	Description
length	string	Number of lines to fetch from end of console log.

Example. Get console output: JSON request

```
{
  "os-getConsoleOutput": {
    "length": 50
  }
}
```

Response

Example. Get console output: JSON response

```
{
  "output": "FAKE CONSOLE OUTPUT\nANOTHER\nLAST LINE"
}
```

1.8.6.6 List details for images

Method	URI	Description
GET	/v2/{tenant_id}/images/detail	Lists details for available images. Includes the image size.

Normal response codes: 200

Request

This table shows the URI parameters for the list details for images request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.

This operation does not require a request body.

Response

Example. List details for images: JSON response

```
{
  "images": [
    {
      "OS-EXT-IMG-SIZE:size": "74185822",
      "created": "2011-01-01T01:02:03Z",
      "id": "70a599e0-31e7-49b7-b260-868f441e862b",
      "links": [
        {
          "href": "http://openstack.example.com/v2/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
          "rel": "self"
        },
        {
          "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
          "rel": "bookmark"
        },
        {
          "href": "http://glance.openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
          "rel": "alternate",
          "type": "application/vnd.openstack.image"
        }
      ],
      "metadata": {
        "architecture": "x86_64",
        "auto_disk_config": "True",
        "kernel_id": "nokernel",
        "ramdisk_id": "nokernel"
      },
      "minDisk": 0,
      "minRam": 0,
      "name": "fakeimage7",
      "progress": 100,
      "status": "ACTIVE",
      "updated": "2011-01-01T01:02:03Z"
    },
    {
      "OS-EXT-IMG-SIZE:size": "25165824",
      "created": "2011-01-01T01:02:03Z",
      "id": "155d900f-4e14-4e4c-a73d-069cbf4541e6",
      "links": [
        {
          "href": "http://openstack.example.com/v2/openstack/
images/155d900f-4e14-4e4c-a73d-069cbf4541e6",
          "rel": "self"
        },
        {
          "href": "http://openstack.example.com/openstack/
images/155d900f-4e14-4e4c-a73d-069cbf4541e6",
          "rel": "bookmark"
        },
        {
          "href": "http://glance.openstack.example.com/openstack/
images/155d900f-4e14-4e4c-a73d-069cbf4541e6",
          "rel": "alternate",
          "type": "application/vnd.openstack.image"
        }
      ],
      "metadata": {
        "architecture": "x86_64",
        "kernel_id": "nokernel",
        "ramdisk_id": "nokernel"
      }
    }
  ]
}
```

```

    },
    "minDisk": 0,
    "minRam": 0,
    "name": "fakeimage123456",
    "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  },
  {
    "OS-EXT-IMG-SIZE:size": "58145823",
    "created": "2011-01-01T01:02:03Z",
    "id": "a2459075-d96c-40d5-893e-577ff92e721c",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/images/a2459075-
d96c-40d5-893e-577ff92e721c",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/images/a2459075-
d96c-40d5-893e-577ff92e721c",
        "rel": "bookmark"
      },
      {
        "href": "http://glance.openstack.example.com/openstack/images/a2459075-
d96c-40d5-893e-577ff92e721c",
        "rel": "alternate",
        "type": "application/vnd.openstack.image"
      }
    ],
    "metadata": {
      "kernel_id": "nokernel",
      "ramdisk_id": "nokernel"
    },
    "minDisk": 0,
    "minRam": 0,
    "name": "fakeimage123456",
    "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  },
  {
    "OS-EXT-IMG-SIZE:size": "49163826",
    "created": "2011-01-01T01:02:03Z",
    "id": "a440c04b-79fa-479c-bed1-0b816eae379",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/images/
a440c04b-79fa-479c-bed1-0b816eae379",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/images/
a440c04b-79fa-479c-bed1-0b816eae379",
        "rel": "bookmark"
      },
      {
        "href": "http://glance.openstack.example.com/openstack/images/
a440c04b-79fa-479c-bed1-0b816eae379",
        "rel": "alternate",
        "type": "application/vnd.openstack.image"
      }
    ],
    "metadata": {
      "architecture": "x86_64",
      "auto_disk_config": "False",
      "kernel_id": "nokernel",
      "ramdisk_id": "nokernel"
    }
  }
]

```

```

    },
    "minDisk": 0,
    "minRam": 0,
    "name": "fakeimage6",
    "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  },
  {
    "OS-EXT-IMG-SIZE:size": "26360814",
    "created": "2011-01-01T01:02:03Z",
    "id": "c905cedb-7281-47e4-8a62-f26bc5fc4c77",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/images/c905cedb-7281-47e4-8a62-f26bc5fc4c77",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/images/c905cedb-7281-47e4-8a62-f26bc5fc4c77",
        "rel": "bookmark"
      },
      {
        "href": "http://glance.openstack.example.com/openstack/images/c905cedb-7281-47e4-8a62-f26bc5fc4c77",
        "rel": "alternate",
        "type": "application/vnd.openstack.image"
      }
    ],
    "metadata": {
      "kernel_id": "155d900f-4e14-4e4c-a73d-069cbf4541e6",
      "ramdisk_id": null
    },
    "minDisk": 0,
    "minRam": 0,
    "name": "fakeimage123456",
    "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  },
  {
    "OS-EXT-IMG-SIZE:size": "84035174",
    "created": "2011-01-01T01:02:03Z",
    "id": "cedef40a-ed67-4d10-800e-17455edce175",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/images/cedef40a-ed67-4d10-800e-17455edce175",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/images/cedef40a-ed67-4d10-800e-17455edce175",
        "rel": "bookmark"
      },
      {
        "href": "http://glance.openstack.example.com/openstack/images/cedef40a-ed67-4d10-800e-17455edce175",
        "rel": "alternate",
        "type": "application/vnd.openstack.image"
      }
    ],
    "metadata": {
      "kernel_id": "nokernel",
      "ramdisk_id": "nokernel"
    },
    "minDisk": 0,

```

```

    "minRam": 0,
    "name": "fakeimage123456",
    "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  },
  {
    "OS-EXT-IMG-SIZE:size": "83594576",
    "created": "2011-01-01T01:02:03Z",
    "id": "76fa36fc-c930-4bf3-8c8a-ea2a2420deb6",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/images/76fa36fc-c930-4bf3-8c8a-ea2a2420deb6",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/images/76fa36fc-c930-4bf3-8c8a-ea2a2420deb6",
        "rel": "bookmark"
      },
      {
        "href": "http://glance.openstack.example.com/openstack/images/76fa36fc-c930-4bf3-8c8a-ea2a2420deb6",
        "rel": "alternate",
        "type": "application/vnd.openstack.image"
      }
    ],
    "metadata": {
      "kernel_id": "nokernel",
      "ramdisk_id": "nokernel"
    },
    "minDisk": 0,
    "minRam": 0,
    "name": "fakeimage123456",
    "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  }
]
}

```

1.8.6.7 Get image details

Method	URI	Description
GET	/v2/{tenant_id}/images/{image_id}	Gets details for a specified image. Includes the image size.

Normal response codes: 200

Request

This table shows the URI parameters for the get image details request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{image_id}	String	Image ID stored through the image API. Typically a UUID.

This operation does not require a request body.

Response

Example. Get image details: JSON response

```
{
  "image": {
    "OS-EXT-IMG-SIZE:size": "74185822",
    "created": "2011-01-01T01:02:03Z",
    "id": "70a599e0-31e7-49b7-b260-868f441e862b",
    "links": [
      {
        "href": "http://openstack.example.com/v2/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
        "rel": "self"
      },
      {
        "href": "http://openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
        "rel": "bookmark"
      },
      {
        "href": "http://glance.openstack.example.com/openstack/
images/70a599e0-31e7-49b7-b260-868f441e862b",
        "rel": "alternate",
        "type": "application/vnd.openstack.image"
      }
    ],
    "metadata": {
      "architecture": "x86_64",
      "auto_disk_config": "True",
      "kernel_id": "nokernel",
      "ramdisk_id": "nokernel"
    },
    "minDisk": 0,
    "minRam": 0,
    "name": "fakeimage7",
    "progress": 100,
    "status": "ACTIVE",
    "updated": "2011-01-01T01:02:03Z"
  }
}
```

1.8.6.8 Get server password

Method	URI	Description
GET	/v2/servers/{server_id}/os-server-password	Gets the administrative password for a specified server.

Normal response codes: 200

Request

This table shows the URI parameters for the get server password request:

Name	Type	Description
{server_id}	UUID	The UUID for the server of interest to you.

This operation does not require a request body.

Response

Example. Get server password: JSON response

```
{
  "password": "xlozO3wLCBRWAa2yDjCCVx8vwNPypxnypmRYDa/zErlQ+EzPe1S/Gz6nfmC5
2mOlOSCRuUOmG7kqqgejPof6M7bOezS387zjq4LSvvpw28zUknzy4YzfFGhnHAdai3TxUJ26pfQ
CYrq8UTzmKF2Bq8ioSEtVVzM0A96pDh8W2i7BOz6MdoiI1K2LsuiplxSJR7Wdke4zNXJjHHP2Rf
YsVbZ/k9ANu+Nz4iIH8/7Cacud/pphH7EjrY6a4RZNrjQskrhKYed0YERpotyjYkleDtRe72Gr
SiXteqCM4biaQ5w3ruS+AcX//PXk3uJ5kC7d67fPXaVz4WaQRYMg=="
}
```

1.8.6.9 Update image

PATCH /v2/images/{image_id}

Normal response codes: 200

It is necessary to specify application/openstack-images-v2.1-json-patch for the Content-Type of the request header.

e7db3b45-8db7-47ad-8109-3fb55c2c24fd as an example:

```
[
  { "op": "replace", "path": "/name", "value": "Fedora 17"},
  { "op": "replace", "path": "/tags", "value": ["fedora", "beefy"]}
]
```

The response body shows the updated image entity. For example:

```
{
  "id": "e7db3b45-8db7-47ad-8109-3fb55c2c24fd",
  "name": "Fedora 17",
  "status": "queued",
  "visibility": "private",
  "tags": ["fedora", "beefy"],
  "created_at": "2012-08-11T17:15:52Z",
  "updated_at": "2012-08-11T17:15:52Z",
  "self": "/v2/images/e7db3b45-8db7-47ad-8109-3fb55c2c24fd",
  "file": "/v2/images/e7db3b45-8db7-47ad-8109-3fb55c2c24fd/file",
  "schema": "/v2/schemas/image"
}
```

The PATCH method can also be used to add or remove image properties. To add a custom user-defined property such as "login-user" to an image, use the following example request.

```
[
  { "op": "add", "path": "/login-user", "value": "kvothe" }
]
```

Similarly, to remove a property such as "login-user" from an image, use the following example request.

```
[
  { "op": "remove", "path": "/login-user" }
]
```

See Appendix B for more details about the 'application/openstack-images-v2.1-json-patch' media type.

Property protections

Version 2.2 of the Images API acknowledges the ability of a cloud provider to employ *property protections*. Thus, there may be image properties that may not be updated or deleted by non-admin users.

1.8.6.10 List images

GET /v2/images

Normal response codes: 200

Request body ignored.

Response body will be a list of images available to the client. For example:

```
{
  "images": [
    {
      "id": "da3b75d9-3f4a-40e7-8a2c-bfab23927dea",
      "name": "cirros-0.3.0-x86_64-uec-ramdisk",
      "status": "active",
      "visibility": "private",
      "size": 2254249,
      "checksum": "2cec138d7dae2aa59038ef8c9aec2390",
      "tags": ["ping", "pong"],
      "created_at": "2012-08-10T19:23:50Z",
      "updated_at": "2012-08-10T19:23:50Z",
      "self": "/v2/images/da3b75d9-3f4a-40e7-8a2c-bfab23927dea",
      "file": "/v2/images/da3b75d9-3f4a-40e7-8a2c-bfab23927dea/file",
      "schema": "/v2/schemas/image"
    },
    {
      "id": "0d5bcbcb7-b066-4217-83f4-7111a60a399a",
      "name": "cirros-0.3.0-x86_64-uec",
      "status": "active",
      "visibility": "private",
      "size": 25165824,
      "checksum": "2f81976cae15c16ef0010c51e3a6c163",
      "tags": [],
      "created_at": "2012-08-10T19:23:50Z",
      "updated_at": "2012-08-10T19:23:50Z",
      "self": "/v2/images/0d5bcbcb7-b066-4217-83f4-7111a60a399a",
      "file": "/v2/images/0d5bcbcb7-b066-4217-83f4-7111a60a399a/file",
      "schema": "/v2/schemas/image"
    },
    {
      "id": "e6421c88-b1ed-4407-8824-b57298249091",
      "name": "cirros-0.3.0-x86_64-uec-kernel",
      "status": "active",
      "visibility": "private",
      "size": 4731440,
      "checksum": "cfb203e7267a28e435dbcb05af5910a9",
      "tags": [],
      "created_at": "2012-08-10T19:23:49Z",
      "updated_at": "2012-08-10T19:23:49Z",
      "self": "/v2/images/e6421c88-b1ed-4407-8824-b57298249091",
      "file": "/v2/images/e6421c88-b1ed-4407-8824-b57298249091/file",
      "schema": "/v2/schemas/image"
    }
  ],
  "first": "/v2/images?limit=3",
}
```

```
"next": "/v2/images?limit=3&marker=e6421c88-b1ed-4407-8824-b57298249091",  
"schema": "/v2/schemas/images"  
}
```

Pagination

This call is designed to return a subset of the larger collection of images while providing a link that can be used to retrieve the next. You should always check for the presence of a 'next' link and use it as the URI in a subsequent HTTP GET request. You should follow this pattern until there a 'next' link is no longer provided. The next link will preserve any query parameters you send in your initial request. The 'first' link can be used to jump back to the first page of the collection.

If you prefer to paginate through images manually, the API provides two query parameters: 'limit' and 'marker'. The limit parameter is used to request a specific page size.

Expect a response to a limited request to return between zero and limit items. The marker parameter is used to indicate the id of the last-seen image. The typical pattern of limit and marker is to make an initial limited request then to use the id of the last image from the response as the marker parameter in a subsequent limited request.

Filtering

The list operation accepts several types of query parameters intended to filter the results of the returned collection.

A client can provide direct comparison filters using most image attributes (i.e. name=Ubuntu, visibility=public, etc). A client cannot filter on tags or anything defined as a 'link' in the json-schema (i.e. self, file, schema).

The 'size_min' and 'size_max' query parameters can be used to do greater-than and less-than filtering of images based on their 'size' attribute ('size' is measured in bytes and refers to the size of an image when stored on disk). For example, sending a size_min filter of 1048576 and size_max of 4194304 would filter the container to include only images that are between one and four megabytes in size.

Sorting

The results of this operation can be ordered using the 'sort_key' and 'sort_dir' parameters.

The API uses the natural sorting of whatever image attribute is provided as the 'sort_key'.

All image attributes can be used as the sort_key (except tags and link attributes).

The sort_dir parameter indicates in which direction to sort. Acceptable values are 'asc' (ascending) and 'desc' (descending). Defaults values for sort_key and sort_dir are 'created_at' and 'desc'.

Property Protections

Version 2.2 of the Images API acknowledges the ability of a cloud provider to employ *property protections*. Thus, there may be image properties that will not appear in the list images response for non-admin users.

1.8.6.11 Get an Image

GET /v2/images/<IMAGE_ID>

Normal response codes: 200

Request body ignored.

Response body is a single image entity. Using GET /v2/image/da3b75d9-3f4a-40e7-8a2cbfab23927dea as an example:

```
{
  "id": "da3b75d9-3f4a-40e7-8a2c-bfab23927dea",
  "name": "cirros-0.3.0-x86_64-uec-ramdisk",
  "status": "active",
  "visibility": "private",
  "size": 2254249,
  "checksum": "2cec138d7dae2aa59038ef8c9aec2390",
  "tags": ["ping", "pong"],
  "created_at": "2012-08-10T19:23:50Z",
  "updated_at": "2012-08-10T19:23:50Z",
  "self": "/v2/images/da3b75d9-3f4a-40e7-8a2c-bfab23927dea",
  "file": "/v2/images/da3b75d9-3f4a-40e7-8a2c-bfab23927dea/file",
  "schema": "/v2/schemas/image"
}
```

Property Protections

Version 2.2 of the Images API acknowledges the ability of a cloud provider to employ *property protections*. Thus, there may be some image properties that will not appear in the image detail response for non-admin users.

1.8.6.12 Delete image

DELETE /v2/images/{image_id}

Normal response codes: 204



Caution

If the password of the user who registered (imported) the image was changed, image deletion will fail. In such a case, convey the image UUID to the operator and request deletion of the image.

1.8.6.13 Create image member

POST /v2/images/{image_id}/members

Normal response codes: 200

Preconditions

- The specified image must exist.
- You can only add a member to an image which visibility attribute is private.
- You must be the owner of the specified image.

Synchronous Postconditions

- With correct permissions, you can see the member status of the image as pending through API calls.

Troubleshooting

- Even if you have correct permissions, if the visibility attribute is set to public, the request returns the HTTP 403 error code. Ensure that you meet the preconditions and run the request again. If the request fails again, review your API request.
- If the specified member is already a member for the image, the service returns the HTTP 409 Conflict error code. In case you meant a different member, double-check that you specified the correct member.

Implement the workflow below when sharing images for use.

1. Add a member to the image that will be shared.

After the image provider creates an image with the visibility attribute set to "private", add a member (project ID/tenant ID) who will share the image.

To add a member to the image, use "Create image member".

2. Start using the shared image.

The status of the member who the image was shared with changes to "accepted" for using the image.

To change the member status of the image, use "Update image member".

By changing the member status of the image to "accepted", the shared image will be displayed in the image list retrieved using "List images".

To stop sharing images, perform the following procedure:

1. Stop using shared images.

The image provider deletes the member for whom usage is to be stopped from the image being shared.

To delete a member from an image, use "Delete image member".

By deleting a member of an image, the member will no longer be able to view or use the image being shared.



Even if the status of a member with whom an image is being shared is changed to "rejected", that member is still able to use the image, so it is necessary to request the image provider to delete the member.

Request

This table shows the URI parameters for the create image member request:

Name	Type	Description
image_id	uuid	Image ID stored through the image API. Typically a UUID.

This table shows the body parameters for the create image member request:

Name	Type	Description
member	string	Image member ID. For example, the tenant ID of the user with whom the image is being shared.

Example. Create image member: JSON request

```
{
  "member": "8989447062e04a818baf9e073fd04fa7"
}
```

Response

```
{
  "created_at": "2013-09-20T19:22:19Z",
  "image_id": "a96be11e-8536-4910-92cb-de50aa19dfe6",
  "member_id": "8989447062e04a818baf9e073fd04fa7",
}
```

```
{
  "schema": "/v2/schemas/member",
  "status": "pending",
  "updated_at": "2013-09-20T19:25:31Z"
}
```

1.8.6.14 List image member

GET /v2/images/<IMAGE_ID>/members

Normal response codes: 200

If a user with whom this image is shared makes this call, the member list contains only information for that user.

If a user with whom this image has not been shared makes this call, the call returns the HTTP 404 status code.

Preconditions

- The specified image must exist.
- You must be the owner or a member of the specified image.

Request

This table shows the URI parameters for the list image member request:

Name	Type	Description
image_id	uuid	Image ID stored through the image API. Typically a UUID.

This operation does not accept a request body.

Response

```
{
  "members": [
    {
      "created_at": "2013-10-07T17:58:03Z",
      "image_id": "dbc999e3-c52f-4200-bedd-3b18fe7f87fe",
      "member_id": "123456789",
      "schema": "/v2/schemas/member",
      "status": "pending",
      "updated_at": "2013-10-07T17:58:03Z"
    },
    {
      "created_at": "2013-10-07T17:58:55Z",
      "image_id": "dbc999e3-c52f-4200-bedd-3b18fe7f87fe",
      "member_id": "987654321",
      "schema": "/v2/schemas/member",
      "status": "accepted",
      "updated_at": "2013-10-08T12:08:55Z"
    }
  ],
  "schema": "/v2/schemas/members"
}
```

1.8.6.15 Show image member details

GET /v2/images/<IMAGE_ID>/members/<member_id>

Normal response codes: 200

Preconditions

- The specified image must exist.
- You must be the owner or a member of the specified image.

Request

This table shows the URI parameters for the show image member details request:

Name	Type	Description
image_id	uuid	Image ID stored through the image API. Typically a UUID.
member_id	string	Image member ID. For example, the tenant ID of the user with whom the image is being shared.

This operation does not accept a request body.

Response

```
{
  "status": "pending",
  "created_at": "2013-11-26T07:21:21Z",
  "updated_at": "2013-11-26T07:21:21Z",
  "image_id": "0ae74cc5-5147-4239-9ce2-b0c580f7067e",
  "member_id": "8989447062e04a818baf9e073fd04fa7",
  "schema": "/v2/schemas/member"
}
```

1.8.6.16 Delete image member

DELETE /v2/images/<IMAGE_ID>/members/<member_id>

Normal response codes: 204

Preconditions

- The specified image must exist.
- You must be the owner of the specified image.

Synchronous Postconditions

- The specified member is removed from the image members.

Troubleshooting

- Even if you have correct permissions, if you are not the owner of the specified image, the request returns the HTTP 403 error code. Ensure that you meet the preconditions and run the request again. If the request fails again, review your API request.

Request

This table shows the URI parameters for the delete image member request:

Name	Type	Description
image_id	uuid	Image ID stored through the image API. Typically a UUID.

Name	Type	Description
member_id	string	Image member ID. For example, the tenant ID of the user with whom the image is being shared.

This operation does not accept a request body and does not return a response body.

1.8.6.17 Update image member

PUT /v2/images/<IMAGE_ID>/members/<member_id>

Normal response codes: 200

Preconditions

- The specified images must exist.
- You must be a member of the specified image.

Synchronous Postconditions

- If you update the member status to accepted and have the correct permissions, you see the image in list images responses.
- With correct permissions, you can see the updated member status of the image through API calls.

Request

This table shows the URI parameters for the update image member request:

Name	Type	Description
image_id	UUID	Image ID stored through the image API. Typically a UUID.
member_id	String	Image member ID. For example, the tenant ID of the user with whom the image is being shared.

This table shows the body parameters for the update image member request:

Name	Type	Description
status	String	The status of this image member.

Example. Update image member: JSON request

```
{
  "status": "accepted"
}
```

Response

```
{
  "created_at": "2013-09-20T19:22:19Z",
  "image_id": "a96be11e-8536-4910-92cb-de50aa19dfe6",
  "member_id": "8989447062e04a818baf9e073fd04fa7",
  "schema": "/v2/schemas/member",
  "status": "accepted",
  "updated_at": "2013-09-20T20:15:31Z"
}
```

1.8.6.18 Get VNC console for an instance

Method	URI	Description
POST	/v2/{tenant_id}/servers/{server_id}/action	Gets vnc console url for a server instance.

Normal response codes: 200

Request

This table shows the URI parameters for the get vnc console url for an instance request:

Name	Type	Description
{tenant_id}	String	The ID for the tenant or account in a multi-tenancy cloud.
{server_id}	UUID	The UUID for the server of interest to you.

This table shows the body parameters for the get vnc console url for an instance request:

Name	Type	Description
type	String	The type of VNC console. The correct value is novnc.

Example. Get vnc console: JSON request

```
{
  "os-getVNCConsole": {
    "type": "novnc"
  }
}
```

Response

Example. Get vnc console: JSON response

```
{
  "console": {
    "type": "novnc",
    "url": "http://127.0.0.1:6080/vnc_auto.html?token=191996c3-7b0f-42f3-95a7-f1839f2da6ed"
  }
}
```

Part 2: Storage

Topics:

- *System storage*
 - *Extended storage*
 - *Backup*
 - *Snapshot*
 - *Images*
 - *Extended storage replication*
 - *Object storage*
-

2.1 System storage

2.1.1 Generate URLs when using APIs

For URLs to be used by APIs of the following categories, use URLs of the "blockstoragev2" type from the Service catalog retrieved from the identity service.

- volume types
- volume
- Block Storage API v2 Volumes
- Upload volume to image service as image

For URLs to be used by APIs of the following categories, use URLs of the "compute" type from the Service catalog retrieved from the identity service.

- Volume extension

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

`https://`*hostName***`/v2/{tenant_id}`**

Host portion **Path portion**

Create the URL in one of the following formats:

- If you remember the tenant_id:
Join the path name of each API in the host section of the end point URL
- If you do not remember the tenant_id:
The endpoint URL and the path name of each API with "/v2/{tenant_id}" removed from the beginning

2.1.2 API list

volume types

Item	API	Description
1	GET /v2/{tenant_id}/types List volume types	Retrieves a list of volume types
2	GET /v2/{tenant_id}/types/ {volume_type_id} Show volume type information	Retrieves information related to the specified volume type

volume

Item	API	Description
1	GET /v2/{tenant_id}/volumes List volumes	Retrieves a list of the summary information about all accessible block storage volumes
2	GET /v2/{tenant_id}/volumes/detail List volumes (detailed)	Retrieves a list of the detailed information about all accessible block storage volumes
3	GET /v2/{tenant_id}/volumes/{volume_id} Show volume information	Retrieves the specified volume information
4	DELETE /v2/{tenant_id}/volumes/{volume_id} Delete volume	Deletes the specified volume

Volume extension

Item	API	Description
1	GET /v1.1/{tenant_id}/os-volumes List volumes	Retrieves a list of the volumes associated with the account
2	GET /v1.1/{tenant_id}/os-volumes/detail List details for volumes	Retrieves details of the specified volumes
3	POST /v1.1/{tenant_id}/os-volumes Create volume	Creates a volume
4	GET /v1.1/{tenant_id}/os-volumes/{volume_id} Show volume information	Retrieves information about the specified volume
5	DELETE /v1.1/{tenant_id}/os-volumes/{volume_id} Delete volume	Deletes the specified volume
6	POST /v1.1/{tenant_id}/os-snapshots Create snapshot	Creates a snapshot
7	GET /v1.1/{tenant_id}/os-snapshots List snapshots	Retrieves a list of snapshots
8	GET /v1.1/{tenant_id}/os-snapshots/detail List details for snapshots	Retrieves a list of the specified snapshots
9	GET /v1.1/{tenant_id}/os-snapshots/{snapshot_id} Show snapshot	Retrieves information about the specified snapshot
10	DELETE /v1.1/{tenant_id}/os-snapshots/{snapshot_id} Delete snapshot	Deletes the specified snapshot from the account

Block Storage API v2 Volumes

Item	API	Description
1	POST /v2/{tenant_id}/volumes Create volume	Creates a volume
2	PUT /v2/{tenant_id}/volumes/{volume_id} Update volume	Updates a volume

Upload volume to image service as image

Item	API	Description
1	POST /v2/{tenant_id}/volumes/{volume_id}/action Create image	Creates an image from a volume

Extend volume size

Item	API	Description
1	POST /v2/{tenant_id}/volumes/{volume_id}/action Extend size of volume	Extends the size of a volume

2.1.3 Request header

Header	Specified value
Accept	application/json
Content-Type	application/json
X-Auth-Token	Authentication token

2.1.4 API error codes

Error code	Description
500, other codes possible	Server Error
400	badRequest
401	unauthorized
403	Forbidden, resizeNotAllowed
404	itemNotFound

2.1.5 Notes

When an API (volume list, etc.) used to display a list of resources is executed, only some of the availability zone information may be returned. If this happens, it is assumed that infrastructure maintenance is in progress, so wait for a few moments (at least one minute) and then execute the API again.

2.1.6 API details

2.1.6.1 List volume types

Method	URI	Description
GET	/v2/{tenant_id}/types	Lists volume types.

Normal response codes: 200

Request

This table shows the URI parameters for the list volume types request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This operation does not require a request body.

Response

Example. List volume types: JSON response

```
{
  "volume_types": [
    {
      "extra_specs": {
        "capabilities": "gpu"
      },
      "id": "6685584b-1eac-4da6-b5c3-555430cf68ff",
      "name": "SSD"
    },
    {
      "extra_specs": {},
      "id": "8eb69a46-df97-4e41-9586-9a40a7533803",
      "name": "SATA"
    }
  ]
}
```

2.1.6.2 Show volume type information

Method	URI	Description
GET	/v2/{tenant_id}/types/{volume_type_id}	Shows information about a specified volume type.

Normal response codes: 200

Request

This table shows the URI parameters for the show volume type information request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.
{volume_type_id}	UUID	The unique identifier for an existing volume type.

This operation does not require a request body.

Response

Example. Show volume type information: JSON response

```
{
  "volume_type": {
    "id": "6685584b-1eac-4da6-b5c3-555430cf68ff",
    "name": "SSD",
    "extra_specs": {
      "capabilities": "gpu"
    },
    "availability_zone": "jp-east-1a"
  }
}
```

2.1.6.3 List volumes

Method	URI	Description
GET	/v2/{tenant_id}/volumes	Lists summary information for all Block Storage volumes that the tenant who submits the request can access.

Normal response codes: 200

Request

This table shows the URI parameters for the list volumes request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This operation does not require a request body.

Response

Example. List volumes: JSON response

```
{
  "volumes": [
    {
      "id": "45baf976-c20a-4894-a7c3-c94b7376bf55",
      "links": [
```

```
{
  {
    "href": "http://localhost:8776/v2/0c2eba2c5af04d3f9e9d0d410b371fde/
volumes/45baf976-c20a-4894-a7c3-c94b7376bf55",
    "rel": "self"
  },
  {
    "href": "http://localhost:8776/0c2eba2c5af04d3f9e9d0d410b371fde/
volumes/45baf976-c20a-4894-a7c3-c94b7376bf55",
    "rel": "bookmark"
  }
],
"name": "vol-004"
},
{
  "id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
  "links": [
    {
      "href": "http://localhost:8776/v2/0c2eba2c5af04d3f9e9d0d410b371fde/
volumes/5aa119a8-d25b-45a7-8d1b-88e127885635",
      "rel": "self"
    },
    {
      "href": "http://localhost:8776/0c2eba2c5af04d3f9e9d0d410b371fde/
volumes/5aa119a8-d25b-45a7-8d1b-88e127885635",
      "rel": "bookmark"
    }
  ],
  "name": "vol-003"
}
]
```

2.1.6.4 List volumes (detailed)

Method	URI	Description
GET	/v2/{tenant_id}/volumes/detail	Lists detailed information for all Block Storage volumes that the tenant who submits the request can access.

Normal response codes: 200

Request

This table shows the URI parameters for the list volumes (detailed) request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This operation does not require a request body.

Response

Example. List volumes (detailed): JSON response

```
{
  "volumes": [
    {
      "status": "available",
      "attachments": [],
```

```

    "links": [
      {
        "href": "http://localhost:8776/v2/0c2eba2c5af04d3f9e9d0d410b371fde/
volumes/45baf976-c20a-4894-a7c3-c94b7376bf55",
        "rel": "self"
      },
      {
        "href": "http://localhost:8776/0c2eba2c5af04d3f9e9d0d410b371fde/
volumes/45baf976-c20a-4894-a7c3-c94b7376bf55",
        "rel": "bookmark"
      }
    ],
    "availability_zone": "nova",
    "os-vol-host-attr:host": "ip-10-168-107-25",
    "source_volid": null,
    "snapshot_id": null,
    "id": "45baf976-c20a-4894-a7c3-c94b7376bf55",
    "description": "Another volume.",
    "name": "vol-004",
    "created_at": "2013-02-25T06:36:28.000000",
    "volume_type": "None",
    "os-vol-tenant-attr:tenant_id":
    "0c2eba2c5af04d3f9e9d0d410b371fde",
    "size": 1,
    "metadata": {
      "contents": "junk"
    }
  },
  {
    "status": "available",
    "attachments": [],
    "links": [
      {
        "href": "http://localhost:8776/v2/0c2eba2c5af04d3f9e9d0d410b371fde/
volumes/5aa119a8-d25b-45a7-8d1b-88e127885635",
        "rel": "self"
      },
      {
        "href": "http://localhost:8776/0c2eba2c5af04d3f9e9d0d410b371fde/
volumes/5aa119a8-d25b-45a7-8d1b-88e127885635",
        "rel": "bookmark"
      }
    ],
    "availability_zone": "nova",
    "os-vol-host-attr:host": "ip-10-168-107-25",
    "source_volid": null,
    "snapshot_id": null,
    "id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
    "description": "This is yet, another volume.",
    "name": "vol-003",
    "created_at": "2013-02-25T02:40:21.000000",
    "volume_type": "None",
    "os-vol-tenant-attr:tenant_id":
    "0c2eba2c5af04d3f9e9d0d410b371fde",
    "size": 1,
    "metadata": {
      "contents": "not junk"
    }
  }
]
}

```

2.1.6.5 Show volume information

Method	URI	Description
GET	/v2/{tenant_id}/volumes/{volume_id}	Shows information about a specified volume.

Normal response codes: 200

Request

This table shows the URI parameters for the show volume information request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.
{volume_id}	UUID	The unique identifier of an existing volume.

This operation does not require a request body.

Response

This table shows the Response parameters:

Name	Type	Description
volume	dict	A volume object.
attachments	list	Instance attachment information. If this volume is attached to a server instance, the attachments list includes the UUID of the attached server, an attachment UUID, the name of the attached host, if any, the volume UUID, the device, and the device UUID. Otherwise, this list is empty.
links	list	The volume links.
availability_zone	string	The availability zone.
os-vol-host-attr:host	string	Current back-end of the volume.
encrypted	boolean	If true, this volume is encrypted.
snapshot_id	UUID	The UUID of the source volume snapshot.
id	UUID	The UUID of the volume.
size	int	The size of the volume, in gibibytes (GiB).
user_id	UUID	The UUID of the user.
os-vol-tenant-attr:tenant_id	UUID	The tenant ID which the volume belongs to.
os-vol-mig-status-attr:migstat	string	The status of this volume migration (None means that a migration is not currently in progress).
metadata	dict	One or more metadata key and value pairs that are associated with the volume.
status	string	The volume status.
description	string	The volume description.

Name	Type	Description
source_volid	UUID	The UUID of the source volume.
os-vol-mig-status-attr:name_id	UUID	The volume ID that this volume name on the back-end is based on.
name	string	The volume name.
bootable	boolean	Enables or disables the bootable attribute. You can boot an instance from a bootable volume.
created_at	dateTime	The date and time when the resource was created. The date and time stamp format is ISO 8601: CCYY-MM-DDThh:mm:ss hh:mm For example, 2015-08-27T09:49:58-05:00. The hh:mm value, if included, is the time zone as an offset from UTC.
volume_type	string	The volume type. In an environment with multiple-storage back ends, the scheduler determines where to send the volume based on the volume type. For information about how to use volume types to create multiple- storage back ends, see Configure multiple-storage back ends.
volume_image_metadata	dict	One or more metadata key and value pairs that are associated with the image of volume.

Example. Show volume information: JSON response

```
{
  "volume": {
    "status": "available",
    "attachments": [],
    "links": [
      {
        "href": "http://localhost:8776/v2/0c2eba2c5af04d3f9e9d0d410b371fde/volumes/5aa119a8-d25b-45a7-8d1b-88e127885635",
        "rel": "self"
      },
      {
        "href": "http://localhost:8776/0c2eba2c5af04d3f9e9d0d410b371fde/volumes/5aa119a8-d25b-45a7-8d1b-88e127885635",
        "rel": "bookmark"
      }
    ],
    "availability_zone": "nova",
    "bootable": "false",
    "os-vol-host-attr:host": "ip-10-168-107-25",
    "source_volid": null,
    "snapshot_id": null,
    "id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
    "description": "Super volume.",
    "name": "vol-002",
    "created_at": "2013-02-25T02:40:21.000000",
    "volume_type": "None",
    "os-vol-tenant-attr:tenant_id": "0c2eba2c5af04d3f9e9d0d410b371fde",
    "size": 1,
    "metadata": {
      "contents": "not junk"
    }
  }
}
```

```
}  
}
```

2.1.6.6 Delete volume

Method	URI	Description
DELETE	/v2/{tenant_id}/volumes/{volume_id}	Deletes a specified volume.

Normal response codes: 202

Request

This table shows the URI parameters for the show volume information request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.
{volume_id}	UUID	The unique identifier of an existing volume.

This operation does not accept a request body and does not return a response body.

2.1.6.7 List volumes

Method	URI	Description
GET	/v1.1/{tenant_id}/os-volumes	Lists the volumes associated with the account.

Normal response codes: 200

Request

This table shows the URI parameters for the list volumes request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This operation does not require a request body.

Response

Example. List volumes: JSON response

```
{  
  "volumes": [  
    {  
      "id": "521752a6-acf6-4b2d-bc7a-119f9148cd8c",  
      "displayName": "vol-001",  
      "displayDescription": "Another volume.",  
      "size": 30,  
      "volumeType": "289da7f8-6440-407c-9fb4-7db01ec49164",  
      "metadata": {  
        "contents": "junk"  
      },  
      "availabilityZone": "us-east1",  
    }  
  ]  
}
```

```

    "snapshotId": null,
    "attachments": [],
    "createdAt": "2012-02-14T20:53:07Z"
  },
  {
    "id": "76b8950a-8594-4e5b-8dce-0dfa9c696358",
    "displayName": "vol-002",
    "displayDescription": "Yet another volume.",
    "size": 25,
    "volumeType": "96c3bda7-c82a-4f50-be73-ca7621794835",
    "metadata": {},
    "availabilityZone": "us-east2",
    "snapshotId": null,
    "attachments": [],
    "createdAt": "2012-03-15T19:10:03Z"
  }
]
}

```

2.1.6.8 List details for volumes

Method	URI	Description
GET	/v1.1/{tenant_id}/os-volumes/detail	Lists details for a specified volume.

Normal response codes: 200

Request

This table shows the URI parameters for the list details for volumes request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This operation does not require a request body.

Response

Example. List details for volumes: JSON response

```

{
  "volumes": [
    {
      "id": "521752a6-acf6-4b2d-bc7a-119f9148cd8c",
      "displayName": "vol-001",
      "displayDescription": "Another volume.",
      "size": 30,
      "volumeType": "289da7f8-6440-407c-9fb4-7db01ec49164",
      "metadata": {
        "contents": "junk"
      },
      "availabilityZone": "us-east1",
      "snapshotId": null,
      "attachments": [],
      "createdAt": "2012-02-14T20:53:07Z"
    },
    {
      "id": "76b8950a-8594-4e5b-8dce-0dfa9c696358",
      "displayName": "vol-002",
      "displayDescription": "Yet another volume.",

```

```

    "size": 25,
    "volumeType": "96c3bda7-c82a-4f50-be73-ca7621794835",
    "metadata": {},
    "availabilityZone": "us-east2",
    "snapshotId": null,
    "attachments": [],
    "createdAt": "2012-03-15T19:10:03Z"
  }
]
}

```

2.1.6.9 Create volume

Method	URI	Description
POST	/v1.1/{tenant_id}/os-volumes	Creates a volume.

Normal response codes: 200



The upper limit for the volume size is 16 TB.

Caution

Request

This table shows the URI parameters for the create volume request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This table shows the body parameters for the create volume request:

Name	Type	Description
display_name	string (Optional)	Volume name.
display_description	string (Optional)	Volume description.
size	integer	Volume size, in GB.
volume_type	string (Optional)	Volume type identifier.
metadata	hash (Optional)	A set of key/value pairs. These pair replace any existing key/value pairs in the resources metadata with matching keys. Any key/value pairs in the parameter with keys that do not occur in the existing resource metadata are added to the resources metadata.
availability_zone	string (Optional)	Volume availability zone.

Example. Create volume: JSON request

```
{
  "volume": {
    "display_name": "vol-001",
    "display_description": "Another volume.",
    "size": 30,
    "volume_type": "289da7f8-6440-407c-9fb4-7db01ec49164",
    "metadata": {
      "contents": "junk"
    },
    "availability_zone": "us-east1"
  }
}
```

Response

Example. Create volume: JSON response

```
{
  "volume": {
    "id": "521752a6-acf6-4b2d-bc7a-119f9148cd8c",
    "displayName": "vol-001",
    "displayDescription": "Another volume.",
    "size": 30,
    "volumeType": "289da7f8-6440-407c-9fb4-7db01ec49164",
    "metadata": {
      "contents": "junk"
    },
    "availabilityZone": "us-east1",
    "snapshotId": null,
    "attachments": [],
    "createdAt": "2012-02-14T20:53:07Z"
  }
}
```

2.1.6.10 Show volume information

Method	URI	Description
GET	/v1.1/{tenant_id}/os-volumes/{volume_id}	Shows information for a specified volume

Normal response codes: 200

Request

This table shows the URI parameters for the show volume information request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.
{volume_id}	UUID	The unique identifier for a volume.

This operation does not require a request body.

Response

Example. Show volume information: JSON response

```
{
  "volume": {
    "id": "521752a6-acf6-4b2d-bc7a-119f9148cd8c",
    "displayName": "vol-001",
    "displayDescription": "Another volume.",
    "size": 30,
    "volumeType": "289da7f8-6440-407c-9fb4-7db01ec49164",
    "metadata": {
      "contents": "junk"
    },
    "availabilityZone": "us-east1",
    "snapshotId": null,
    "attachments": [],
    "createdAt": "2012-02-14T20:53:07Z"
  }
}
```

2.1.6.11 Delete volume

Method	URI	Description
DELETE	/v1.1/{tenant_id}/os-volumes/{volume_id}	Deletes a specified volume.

Normal response codes: 202

Request

This table shows the URI parameters for the delete volume request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.
{volume_id}	String	The unique identifier for a volume.

This operation does not accept a request body and does not return a response body.

2.1.6.12 Create snapshot

Method	URI	Description
POST	/v1.1/{tenant_id}/os-snapshots	Creates a snapshot.

Normal response codes: 200

Request

This table shows the URI parameters for the create snapshot request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This table shows the body parameters for the create snapshot request:

Name	Type	Description
display_name	string (Optional)	A display name for the snapshot.
display_description	string (Optional)	A description of the snapshot.
volume_id	uuid	The source volume for the snapshot.
force	boolean (Optional)	If true the operation will snapshot the source volume even if it is attached to a server. If it is false it will only snapshot if the volume is not attached.

Example. Create snapshot: JSON request

```
{
  "snapshot": {
    "display_name": "snap-001",
    "display_description": "Daily backup",
    "volume_id": "521752a6-acf6-4b2d-bc7a-119f9148cd8c",
    "force": true
  }
}
```

Response

Example. Create snapshot: JSON response

```
{
  "snapshot": {
    "id": "3fbbccccf-d058-4502-8844-6feeffdf4cb5",
    "displayName": "snap-001",
    "displayDescription": "Daily backup",
    "volumeId": "521752a6-acf6-4b2d-bc7a-119f9148cd8c",
    "status": "available",
    "size": 30,
    "createdAt": "2012-02-29T03:50:07Z"
  }
}
```

2.1.6.13 List snapshots

Method	URI	Description
GET	/v1.1/{tenant_id}/os-snapshots	Lists snapshots.

Normal response codes: 200

Request

This table shows the URI parameters for the list snapshots request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This operation does not require a request body.

Response

Example. List snapshots: JSON response

```
{
  "snapshots": [
    {
      "id": "3fbbcccf-d058-4502-8844-6feeffdf4cb5",
      "displayName": "snap-001",
      "displayDescription": "Daily backup",
      "volumeId": "521752a6-acf6-4b2d-bc7a-119f9148cd8c",
      "status": "available",
      "size": 30,
      "createdAt": "2012-02-29T03:50:07Z"
    },
    {
      "id": "e479997c-650b-40a4-9dfe-77655818b0d2",
      "displayName": "snap-002",
      "displayDescription": "Weekly backup",
      "volumeId": "76b8950a-8594-4e5b-8dce-0dfa9c696358",
      "status": "available",
      "size": 25,
      "createdAt": "2012-03-19T01:52:47Z"
    }
  ]
}
```

2.1.6.14 List details for snapshots

Method	URI	Description
GET	/v1.1/{tenant_id}/os-snapshots/detail	Lists details for a specified snapshot.

Normal response codes: 200

Request

This table shows the URI parameters for the list details for snapshots request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This operation does not require a request body.

Response

Example. List details for snapshots: JSON response

```
{
  "snapshots": [
    {
      "id": "3fbbcccf-d058-4502-8844-6feeffdf4cb5",
      "displayName": "snap-001",
      "displayDescription": "Daily backup",
      "volumeId": "521752a6-acf6-4b2d-bc7a-119f9148cd8c",
      "status": "available",

```

```

    "size": 30,
    "createdAt": "2012-02-29T03:50:07Z",
    "availability_zone": "jp-east-1a"
  },
  {
    "id": "e479997c-650b-40a4-9dfe-77655818b0d2",
    "displayName": "snap-002",
    "displayDescription": "Weekly backup",
    "volumeId": "76b8950a-8594-4e5b-8dce-0dfa9c696358",
    "status": "available",
    "size": 25,
    "createdAt": "2012-03-19T01:52:47Z",
    "availability_zone": "jp-east-1a"
  }
]
}

```

2.1.6.15 Show snapshot

Method	URI	Description
GET	/v1.1/{tenant_id}/os-snapshots/{snapshot_id}	Shows information for a specified snapshot.

Normal response codes: 200

Request

This table shows the URI parameters for the show snapshot request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.
{snapshot_id}	String	The unique identifier for a snapshot.

This operation does not require a request body.

Response

Example. Show snapshot: JSON response

```

{
  "snapshot": {
    "id": "3fbbcccf-d058-4502-8844-6feeffdf4cb5",
    "displayName": "snap-001",
    "displayDescription": "Daily backup",
    "volumeId": "521752a6-acf6-4b2d-bc7a-119f9148cd8c",
    "status": "available",
    "size": 30,
    "createdAt": "2012-02-29T03:50:07Z",
    "availability_zone": "jp-east-1a"
  }
}

```

2.1.6.16 Delete snapshot

Method	URI	Description
DELETE	/v1.1/{tenant_id}/os-snapshots/{snapshot_id}	Deletes a specified snapshot from the account.

This operation is asynchronous. You must list snapshots repeatedly to determine whether the snapshot was deleted.

Normal response codes: 202

Request

This table shows the URI parameters for the delete snapshot request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.
{snapshot_id}	String	The unique identifier for a snapshot.

This operation does not accept a request body and does not return a response body.

2.1.6.17 Create volume

Method	URI	Description
POST	/v2/{tenant_id}/volumes	Creates a volume.

To create a bootable volume, include the ID of the image from which you want to create the volume in the imageRef attribute in the request body.

Normal response codes: 202

Request

This table shows the URI parameters for the create volume request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This table shows the body parameters for the create volume request:

Name	Type	Description
availability_zone	string (Optional)	The availability zone.
source_volid	Uuid (Optional)	To create a volume from an existing volume, specify the ID of the existing volume.
description	string (Optional)	The volume description.
snapshot_id	Uuid (Optional)	To create a volume from an existing snapshot, specify the ID of the existing volume snapshot.

Name	Type	Description
size	Int (Optional if snapshot_id is specified)	The size of the volume, in GBs.
name	String (Optional)	The volume name.
imageRef	Uuid (Optional)	The ID of the image from which you want to create the volume. Required to create a bootable volume.
volume_type	string (Optional)	The associated volume type.
metadata	string (Optional)	One or more metadata key and value pairs to associate with the volume.

Example. Create volume: JSON request

```
{
  "volume": {
    "availability_zone": null,
    "source_volid": null,
    "description": null,
    "snapshot_id": null,
    "size": 10,
    "name": "my_volume",
    "imageRef": null,
    "volume_type": null,
    "metadata": {}
  }
}
```

Response

Example. Create volume: JSON response

```
{
  "volume": {
    "status": "creating",
    "name": "my_volume",
    "attachments": [],
    "availability_zone": "nova",
    "bootable": "false",
    "created_at": "2014-02-21T19:52:04.949734",
    "description": null,
    "volume_type": "M1",
    "snapshot_id": null,
    "source_volid": null,
    "metadata": {},
    "id": "93c2e2aa-7744-4fd6-a31a-80c4726b08d7",
    "size": 10
  }
}
```

This table shows the body parameters for the create volume response:

Name	Type	Description
status	String (Required)	The volume status.
name	String (Required)	The volume name.
attachments	String (Required)	One or more instance attachments.
availability_zone	String (Required)	The availability zone.
bootable	Boolean (Required)	Enables or disables the bootable attribute. You can boot an instance from a bootable volume.
created_at	Datetime (Required)	Date and time when the volume was created.
description	String (Required)	The volume description.
volume_type	String (Required)	The associated volume type.
snapshot_id	Uuid (Required)	To create a volume from an existing volume snapshot, specify the ID of the existing volume snapshot.
source_volid	Uuid (Required)	To create a volume from an existing volume, specify the ID of the existing volume.
metadata	String (Required)	One or more metadata key and value pairs to associate with the volume.
id	Uuid (Required)	The volume ID.
size	Int (Required)	The size of the volume, in GBs.

2.1.6.18 Update volume

Method	URI	Description
PUT	/v2/{tenant_id}/volumes/{volume_id}	Updates a volume.

Normal response codes: 200

Request

This table shows the URI parameters for the update volume request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.
{volume_id}	UUID	The unique identifier of an existing volume.

This table shows the query parameters for the update volume request:

Name	Type	Description
description	string (Optional)	A description of the volume.
name	string (Optional)	The name of the volume.

Example. Update volume: JSON request

```
{
  "volume": {
    "name": "vol-003",
    "description": "This is yet, another volume."
  }
}
```

Response

Example. Update volume: JSON response

```
{
  "volume": {
    "status": "available",
    "attachments": [],
    "links": [
      {
        "href": "http://localhost:8776/v2/0c2eba2c5af04d3f9e9d0d410b371fde/volumes/5aa119a8-d25b-45a7-8d1b-88e127885635",
        "rel": "self"
      },
      {
        "href": "http://localhost:8776/0c2eba2c5af04d3f9e9d0d410b371fde/volumes/5aa119a8-d25b-45a7-8d1b-88e127885635",
        "rel": "bookmark"
      }
    ],
    "availability_zone": "nova",
    "source_volid": null,
    "snapshot_id": null,
    "id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
    "description": "This is yet, another volume.",
    "name": "vol-003",
    "created_at": "2013-02-25T02:40:21.000000",
    "volume_type": "None",
    "size": 1,
    "metadata": {
      "contents": "not junk"
    }
  }
}
```

```
}  
}  
}
```

2.1.6.19 Create image

Method	URI	Description
POST	/v2/{tenant_id}/volumes/{volume_id}/action	Creates an image.

Normal response codes: 202



If using Linux in the system volume, before creating an image check whether the following directory exists and whether it is a symbolic link.

```
/var/lib/cloud/instance
```

If the above directory is a real directory, then delete it and after creating the image, check the following.

- An instance is created using the image, and personalized processing such as password change is performed.

Also, before creating the image, check the descriptions in the configuration file below. If an external disk is configured to perform automount, a check for a non-existent disk will be performed when starting the server that used the created image, and as a result the server may not start normally.

```
/etc/fstab
```

Created images are registered to each availability zone so that they can be used from all of them. If image registration fails for another availability zone, an error is recorded in the properties (sync_status_reason) of images that exist in the availability zone where the image was created. If an error occurs, delete the image and then create it again.

Example:

```
"sync_status_reason":"ERROR:A timeout occurred during synchronize  
image the server(http://1.1.1.1:9292) in the image operation.  
image_id=681995bb-26c3-421e-9734-0c02b1acbf7d"
```

Before using an image, check the following for the image that is returned with the image_id of the response information:

- The image exists
- The status of the image is active
- The sync_status_reason property does not exist for the image

If using Windows in the system volume, perform the following tasks before and after creating an image:

Refer to "the FUJITSU Cloud Service K5 IaaS Service Specification" for details on the tasks.

- Tasks before creating an image
Perform tasks 2 to 6 on the Windows operating system.
 1. Retrieve a snapshot

Use the snapshot feature to retrieve a snapshot of the system storage.

Refer to "[Create snapshot](#) on page 249" for details on how to create a snapshot.

2. Allow remote access

Remote access is allowed by default. If remote access is currently set to not allowed, use the following procedure to allow remote access.

Windows Server 2012 SE

Click **Start > Control Panel > System and Security > Allow remote access**, and in the dialog box, select **Allow remote connections**.

Windows Server 2008 SE/EE

Click **Start > Control Panel > System and Security > Allow remote access**, and in the dialog box, select **Allow connections from computers running any version of Remote Desktop** or **Allow connections only from computers running Remote Desktop with Network Level Authentication**.

3. Edit the sysprep response file

Edit the sysprep response file if necessary. The sysprep response file is stored in the following location on the virtual server:

Windows Server 2012 SE

C:\Windows\System32\Sysprep\ans_w2k12.xml

Windows Server 2008 SE

C:\Windows\System32\Sysprep\ans_w2k8_se.xml

Windows Server 2008 EE

C:\Windows\System32\Sysprep\ans_w2k8_ee.xml

4. Delete log files

Delete the following log files described in the definition file on the virtual server.

Cloudbase-init log files.

The paths of the Cloudbase-init log files are described in the following locations on Windows.

- cloudbase-init-unattend log file

cloudbase-initInstallLocation\conf\cloudbase-init-unattend.conf

Log directory is specified in: logdir setting in the [DEFAULT] section

Log file is specified in: logfile setting in the [DEFAULT] section

The normal log file is:

C:\Program Files (x86)\Cloudbase Solutions\Cloudbase-Init\log\cloudbase-init-unattend.log

- cloudbase-init log file

cloudbase-initInstallLocation\conf\cloudbase-init.conf

Log directory is specified in: logdir setting in the [DEFAULT] section

Log file is specified in: logfile setting in the [DEFAULT] section

The normal log file is:

C:\Program Files (x86)\Cloudbase Solutions\Cloudbase-Init\log\cloudbase-init.log

5. Delete registry information

Delete registry information of Cloudbase-init.

Windows operating system, 32-bit version

HKEY_LOCAL_MACHINE\Software\Cloudbase Solutions\Cloudbase-Init

Windows operating system, 64-bit version

HKEY_LOCAL_MACHINE\Software\Wow6432Node\Cloudbase Solutions\Cloudbase-Init

6. Execute sysprep

Execute the following batch file:

C:\Windows\System32\sysprep\sysprep.bat

- Tasks after creating an image

1. Restore the snapshot

Use the snapshot feature to restore the snapshot of the system storage.

Refer to "[Restore volume from the snapshot](#) on page 251" for details.

2. Start the virtual server

Start the virtual server.

Refer to "[Start server](#) on page 97" for details.

Request

This table shows the URI parameters for the create image request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.
{volume_id}	UUID	The unique identifier of an existing volume.

This table shows the body parameters for the create image request:

Name	Type	Description
container_format	string (Optional)	Specifies the container format of the image to be created. Specify "bare". If omitted, "bare" will be used.
disk_format	string (Optional)	Specifies the disk format of the image to be created. Specify "raw". If omitted, "raw" will be used.
image_name	string	Specifies the name of the image to be created.
force	boolean (Optional)	If "False" is specified, images cannot be created when a volume is mounted on the instance. If "True" is specified, images can be created even when a volume is mounted on the instance. If you will specify this parameter, stop the operating system beforehand. If omitted, "false" will be used.

Example. Create volume: JSON request

```
{
  "os-volume_upload_image": {
    "container_format": "bare",
    "disk_format": "raw",
    "image_name": "my_image",
    "force": "True"
  }
}
```

Response

Example. Create volume: JSON response

```
{
  "os-volume_upload_image":{
    "status":"uploading",
    "image_id":"3dc6c4d9-95e9-4cdb-a076-cc3ed50b9654",
    "image_name":"20150430_volume_to_image-003",
    "volume_type":{
      "name":"M1",
      "qos_specs_id":null,
      "deleted":false,
      "created_at":"2014-10-11T11:26:56.000000",
      "updated_at":null,
      "deleted_at":null,
      "id":"13a0247c-9363-401d-acd3-c5d07ccd1a45"
    },
    "container_format":"bare",
    "size":2,
    "disk_format":"raw",
    "id":"52102306-e352-4c84-9233-2ac2b511d29b",
    "display_description":null,
    "updated_at":"2015-04-30T06:31:31.000000"
  }
}
```

This table shows the body parameters for the create image response:

Name	Type	Description
status	String	Status of the volume. The status will become "uploading" immediately after image creation is started from the volume. When image creation is complete, the status will return to "available" or "in-use".
image_id	uuid	ID of the created image.
image_name	String	Value specified in the Request Body.
volume_type	String	Type of the volume. When the volume type is not specified, "null" is returned instead of a child element.
	name	Name of the volume type.
	qos_specs_id	ID of the qos spec.
	deleted	Flag indicating that a volume has been deleted. "true" is used to indicate that it has been deleted.

Name		Type	Description
	created_at	Datetime	Creation datetime of the volume type.
	updated_at	Datetime	Update datetime of the volume type.
	deleted_at	Datetime	Deletion datetime of the volume type.
	id	uuid	ID of the volume type.
container_format		String	Value specified (or omitted) in the Request Body.
size		Int	Volume size, in GB.
disk_format		String	The value specified (or omitted) in the Request Body.
id		Uuid	ID of the volume.
display_description		String	Description of the volume.
updated_at		Datetime	Update datetime of the volume.

2.1.6.20 Extend volume

Method	URI	Description
POST	/v2/{tenant_id}/volumes/{volume_id}/action	Extend size of volume

Normal response codes: 202



Caution

It is necessary to restart the operating system or create a file system for the new size to be recognized by the operating system.

To guarantee proper operation, use this API after shelving an existing space that is in use.

Request

This table shows the URI parameters for the extend size of volume request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.
{volume_id}	UUID	The unique identifier of an existing volume.

This table shows the body parameters for the extend size of volume request:

Name	Type	Description
new_size	Integer	Specifies the size to extend the volume to.

Example. Create volume: JSON request

```
{
  "os-extend": {
    "new_size": 20
  }
}
```

Response

This operation does not return a response body.

2.2 Extended storage

2.2.1 Extended storage

The APIs below can be used.

- APIs used in "API Reference Manual (Application Platform Service) " - "Template/ Development environment" - "Orchestration".
- "Volume attachment" category APIs listed in [API list](#) on page 7.

2.3 Backup

2.3.1 Restrictions

This feature is not supported as at the time of issue of this document.

When using backup products

The APIs listed in [API list](#) on page 244 can be used.

2.4 Snapshot

2.4.1 Generate URLs when using APIs

The APIs require URLs of the blockstoragev2 type, which can be generated by the identity service on the Service catalog.

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

https://hostNamev2/{tenant_id}

Host portion Path portion

Create the URL in one of the following formats:

- If you remember the tenant_id:
Join the path name of each API in the host section of the end point URL
- If you do not remember the tenant_id:
The endpoint URL and the path name of each API with "/v2/{tenant_id}" removed from the beginning

2.4.2 API list

snapshots

Item	API	Description
1	GET /v2/{tenant_id}/snapshots List snapshots	Retrieves a list of the summary information about snapshots of all accessible storage blocks
2	GET /v2/{tenant_id}/snapshots/detail List snapshots (detailed)	Retrieves a list of detailed information about snapshots of all accessible storage blocks
3	GET /v2/{tenant_id}/snapshots/{snapshot_id} Show snapshot information	Retrieves information about the specified snapshot
4	DELETE /v2/{tenant_id}/snapshots/{snapshot_id} Delete snapshot	Deletes the specified snapshot

Block Storage API v2 Snapshots

Item	API	Description
1	POST /v2/{tenant_id}/snapshots Create snapshot	Creates a point-in-time snapshot of a volume

Item	API	Description
2	PUT /v2/{tenant_id}/snapshots/{snapshot_id} Update snapshot	Updates the specified snapshot

Block Storage API v2 Snapshot actions

Item	API	Description
1	POST /v2/{tenant_id}/snapshots/{snapshot_id}/action Restore volume from the snapshot	Restores a volume from a snapshot

2.4.3 Request header

Header	Specified value
Accept	application/json
Content-Type	application/json
X-Auth-Token	Authentication token

2.4.4 API error codes

Error code	Description
500, other codes possible	Server Error
400	badRequest
401	unauthorized
403	Forbidden, resizeNotAllowed
404	itemNotFound

2.4.5 Notes

When an API (snapshot list, etc.) used to display a list of resources is executed, only some of the availability zone information may be returned. If this happens, it is assumed that infrastructure maintenance is in progress, so wait for a few moments (at least one minute) and then execute the API again.

2.4.6 API details

2.4.6.1 List snapshots

Method	URI	Description
GET	/v2/{tenant_id}/snapshots	Lists summary information for all Block Storage snapshots that the tenant who submits the request can access.

Normal response codes: 200

Request

This table shows the URI parameters for the list snapshots request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This operation does not require a request body.

Response

Example. List snapshots: JSON response

```
{
  "snapshots": [
    {
      "status": "available",
      "description": "Very important",
      "created_at": "2013-02-25T04:13:17.000000",
      "metadata": {},
      "volume_id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
      "size": 1,
      "id": "2bb856e1-b3d8-4432-a858-09e4ce939389",
      "name": "snap-001"
    },
    {
      "status": "available",
      "description": "Weekly backup",
      "created_at": "2013-02-25T07:20:38.000000",
      "metadata": {},
      "volume_id": "806092e3-7551-4fff-a005-49016f4943b1",
      "size": 1,
      "id": "e820db06-58b5-439d-bac6-c01faa3f6499",
      "name": "snap-002"
    }
  ]
}
```

2.4.6.2 List snapshots (detailed)

Method	URI	Description
GET	/v2/{tenant_id}/snapshots/detail	Lists detailed information for all Block Storage snapshots that the tenant who submits the request can access.

Normal response codes: 200

Request

This table shows the URI parameters for the list snapshots (detailed) request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This operation does not require a request body.

Response

Example. List snapshots (detailed): JSON response

```
{
  "snapshots": [
    {
      "status": "available",
      "os-extended-snapshot-attributes:progress": "100%",
      "description": "Daily backup",
      "created_at": "2013-02-25T07:30:12.000000",
      "metadata": {},
      "volume_id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
      "os-extended-snapshot-attributes:project_id":
        "0c2eba2c5af04d3f9e9d0d410b371fde",
      "size": 30,
      "id": "43f20e0e-2c2c-4770-9d4e-c3d769ae5470",
      "name": "snap-001",
      "availability_zone": "jp-east-1a"
    },
    {
      "status": "available",
      "os-extended-snapshot-attributes:progress": "100%",
      "description": "Weekly backup",
      "created_at": "2013-02-25T07:20:38.000000",
      "metadata": {},
      "volume_id": "806092e3-7551-4fff-a005-49016f4943b1",
      "os-extended-snapshot-attributes:project_id":
        "0c2eba2c5af04d3f9e9d0d410b371fde",
      "size": 1,
      "id": "e820db06-58b5-439d-bac6-c01faa3f6499",
      "name": "snap-002",
      "availability_zone": "jp-east-1a"
    }
  ]
}
```

2.4.6.3 Show snapshot information

Method	URI	Description
GET	/v2/{tenant_id}/snapshots/{snapshot_id}	Shows information for a specified snapshot.

Normal response codes: 200

Request

This table shows the URI parameters for the show snapshot information request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.
{snapshot_id}	UUID	The unique identifier of an existing snapshot.

This operation does not require a request body.

Response

Example. Show snapshot information: JSON response

```
{
  "snapshot": {
    "status": "available",
    "os-extended-snapshot-attributes:progress": "100%",
    "description": "Daily backup",
    "created_at": "2013-02-25T04:13:17.000000",
    "metadata": {},
    "volume_id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
    "os-extended-snapshot-attributes:project_id":
    "0c2eba2c5af04d3f9e9d0d410b371fde",
    "size": 1,
    "id": "2bb856e1-b3d8-4432-a858-09e4ce939389",
    "name": "snap-001",
    "availability_zone": "jp-east-1a"
  }
}
```

2.4.6.4 Delete snapshot

Method	URI	Description
DELETE	/v2/{tenant_id}/snapshots/{snapshot_id}	Deletes a specified snapshot.

Normal response codes: 202

Request

This table shows the URI parameters for the delete snapshot request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

Name	Type	Description
{snapshot_id}	UUID	The unique identifier of an existing snapshot.

This operation does not accept a request body and does not return a response body.

2.4.6.5 Create snapshot

Method	URI	Description
POST	/v2/{tenant_id}/snapshots	Creates a snapshot, which is a point-in-time copy of a volume. You can create a volume from the snapshot.

Normal response codes: 202

Request

This table shows the URI parameters for the create snapshot request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.

This table shows the query parameters for the create snapshot request:

Name	Type	Description
volume_id	String (Required)	To create a snapshot from an existing volume, specify the ID of the existing volume.
force	Boolean (Optional)	[True/False] Indicate whether to snapshot, even if the volume is attached. Default==False.
name	String (Optional)	Name of the snapshot. Default==None.
description	String (Optional)	Description of snapshot. Default==None.

Example. Create snapshot: JSON request

```
{
  "snapshot": {
    "name": "snap-001",
    "description": "Daily backup",
    "volume_id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
    "force": true
  }
}
```

Response

Example. Create snapshot: JSON response

```
{
  "snapshot": {
    "status": "creating",
    "description": "Daily backup",
    "created_at": "2013-02-25T03:56:53.081642",
    "metadata": {},
    "volume_id": "5aa119a8-d25b-45a7-8d1b-88e127885635",
    "size": 1,
    "id": "ffa9bc5e-1172-4021-acaf-cdcd78a9584d",
    "name": "snap-001"
  }
}
```

2.4.6.6 Update snapshot

Method	URI	Description
PUT	/v2/{tenant_id}/snapshots/{snapshot_id}	Updates a specified snapshot.

Normal response codes: 200

Request

This table shows the URI parameters for the update snapshot request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.
{snapshot_id}	UUID	The unique identifier of an existing snapshot.

This table shows the query parameters for the update snapshot request:

Name	Type	Description
description	String (Optional)	Describes the snapshot.
name	String (Optional)	The name of the snapshot.

Example. Update snapshot: JSON request

```
{
  "snapshot": {
    "name": "snap-002",
    "description": "This is yet, another snapshot."
  }
}
```

Response

Example. Update snapshot: JSON response

```
{
  "snapshot": {
    "created_at": "2013-02-20T08:11:34.000000",
    "description": "This is yet, another snapshot",
    "name": "vol-002",
    "id": "4b502fcb-1f26-45f8-9fe5-3b9a0a52eaf2",
    "size": 1,
    "status": "available",
    "volume_id": "2402b902-0b7a-458c-9c07-7435a826f794"
  }
}
```

2.4.6.7 Restore volume from the snapshot

Method	URI	Description
POST	/v2/{tenant_id}/snapshots/{snapshot_id}/action	Restore a volume from the snapshot.

Normal response codes: 202

Request

This table shows the URI parameters for the restore volume from the snapshot request:

Name	Type	Description
{tenant_id}	String	The unique identifier of the tenant or account.
{snapshot_id}	UUID	The unique identifier of an existing snapshot.

Example. Restore volume from the snapshot: JSON request

```
{
  "fcx-restore": {}
}
```

Response

This operation does not return a response body.

2.5 Images

2.5.1 Images

The APIs below can be used.

- "Images" category APIs listed in [API list](#) on page 7.
- "Metadata" category APIs listed in [API list](#) on page 7.
- "Images with size attribute" category APIs listed in [API list](#) on page 192.
- "Image Service API v2 Images" category APIs listed in [API list](#) on page 192.
- "Image Service API v2 Image data" category APIs listed in [API list](#) on page 192.

2.6 Extended storage replication

2.6.1 Extended storage replication

The APIs below can be used.

- APIs listed in [Extended storage](#) on page 242
- APIs listed in [API list](#) on page 244

2.7 Object storage

2.7.1 Generate URLs when using APIs

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

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

```
https://hostName/v1/AUTH_{project_id}
```

In the descriptions that follow, "AUTH_{project_id}" is referred to as "{account}".

2.7.2 API list

Item	API	Description
1	GET /v1/{account}{?limit,marker,end_marker,format,prefix,delimiter} Retrieve container list	Retrieves the account details and a list of the containers.
2	POST /v1/{account} Update account metadata	Creates, updates, or deletes the account metadata.
3	HEAD /v1/{account} Retrieve account metadata	Retrieves the account metadata.
4	GET /v1/{account}/{container}{?limit,marker,end_marker,prefix,format,delimiter,path} Retrieve a list of objects	Retrieves the container details and a list of objects.
5	PUT /v1/{account}/{container} Create container	Creates a container.
6	DELETE /v1/{account}/{container} Delete container	Deletes an empty container.
7	POST /v1/{account}/{container} Update container metadata	Deletes, creates, or updates the custom metadata of a container.
8	HEAD /v1/{account}/{container} Retrieve container metadata	Retrieves the container metadata, including the number of objects and their size in bytes
9	GET /v1/{account}/{container}/{object}{?multipart-manifest,signature,expires} Retrieve object	Retrieves object contents and metadata.

Item	API	Description
10	PUT /v1/{account}/{container}/{object}{? multipart-manifest,signature,expires} Create object	Creates an object using the specified content and metadata or replaces an existing object with the specified content and metadata.
11	COPY /v1/{account}/{container}/{object} Copy object	Copies the specified object.
12	DELETE /v1/{account}/{container}/{object} {?multipart-manifest} Delete object	Deletes an object.
13	HEAD /v1/{account}/{container}/{object}{? signature,expires} Retrieve object metadata	Retrieves object metadata.
14	POST /v1/{account}/{container}/{object} Update object metadata	Creates or updates object metadata.
15	POST /v1/{account}?bulk-delete Deletes bulk objects	Deletes multipul objects or containers by single request.

2.7.3 General requirements

If a value in the request parameter contains a character that cannot be used as is in the URL, it must be encoded using UTF-8.

2.7.4 API error codes

Error code	Description
400 (Bad Request)	Invalid request
401 (Unauthorized)	Autentication error
403 (Forbidden)	Forbidden access
404 (Not Found)	Item not found
408 (Request Timeout)	Request timeout
409 (Conflict)	Conflicting request
411 (Length Required)	Require Content-Length
412 (Precondition Failed)	Precondition failed
416 (Requested Range Not Satisfiable)	Invalid specifiction of Range header
500 (Internal Error)	Internal error
503 (Service Unavailable)	Service Unavailable

2.7.5 API details

2.7.5.1 List containers GET /v1/{account}{?limit,marker,end_marker,format,prefix,delimiter}

Retrieves the account details and a list of its containers

If a format is not specified, the container list will be returned in text/plain format.

Also, when the query parameter is used, the lists in a container can be retrieved, divided by page. When the number of containers retrieved is smaller than the value specified in the limit parameter, a list right to end will be retrieved. When the number of containers retrieved equals the value specified in the limit parameter, containers that are yet to be retrieved remain in the list.

When the list of containers is retrieved successfully, the following status code is returned:

- 200 OK: The container list is included in the response body.
- 204 No Content: The container does not exist or the result of filtering using the limit, marker or end_marker query parameters is empty.

Request headers

X-Auth-Token

Authentication token

Data type	Cardinality
String	1..1

X-Newest

When "True" is set, object storage searches for and returns the newest replica out of all of the replicas. If this header is omitted, object storage selects one normal replica and returns it. When "True" is specified in this header, the response time becomes longer. Only use this item when absolutely necessary.

Data type	Cardinality
String	0..1

Accept

Valid values: application/json, application/xml, and text/xml.

Data type	Cardinality
String	0..*

Request parameters

{account}

Name uniquely assigned by project

Data type	Cardinality
String	1..1

limit

Maximum number of containers to retrieve at once.

Data type	Cardinality
Int	0..1

marker

Returns a list of container names that follow the specified string.

Data type	Cardinality
String	0..1

end_marker

Returns a list of container names that precede the specified string.

Data type	Cardinality
String	0..1

format

Specifies the response format. Valid values: json, xml, and plain. The default is plain.

When format=xml or format=json is specified , the response will include not only the container name but also other details.

When format=plain is specified, a list of container names delimited by line feeds will be returned.

Data type	Cardinality
String	0..1

prefix

Returns a list of containers that start with this string.

Data type	Cardinality
String	0..1

Response headers

Content-Length

Number of bytes of the response body

Data type	Cardinality
String	1..1

Content-Type

MIME type of the response body

Data type	Cardinality
String	1..1

X-Account-Object-Count

Number of objects in the account

Data type	Cardinality
Int	1..1

X-Account-Bytes-Used

Size (in bytes) of the objects stored in object storage by the account

Data type	Cardinality
Int	1..1

X-Account-Container-Count

Number of containers

Data type	Cardinality
Int	1..1

X-Account-Meta-name

Account metadata. {name} is the name of the metadata item.

Data type	Cardinality
String	0..*

X-Account-Meta-Temp-URL-Key

Secret key used for temporary URLs. If not set, this header will not be returned.

Data type	Cardinality
String	0..1

X-Account-Meta-Temp-URL-Key-2

Second secret key used for temporary URLs. If not set, this header will not be returned.

Data type	Cardinality
String	0..1

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime when transaction was executed

Data type	Cardinality
Datetime	1..1

Response elements

account

Envelope of the response

Data type	Cardinality	Parent element	Child element
account	1..1	None	container

container

Set of container information

Data type	Cardinality	Parent element	Child element
container	0..n	account	name count bytes

name

Container name

Data type	Cardinality	Parent element	Child element
string	0..n	container	None

count

Number of objects held by the container

Data type	Cardinality	Parent element	Child element
string	0..1	container	None

bytes

Size of the objects held by the container

Data type	Cardinality	Parent element	Child element
string	0..1	container	None

Example List containers response: HTTP and JSON

Example of request

```
curl -i $publicURL?format=json -X GET -H "X-Auth-Token: $token"
```

Example of response

```
HTTP/1.1 200 OK
Content-Length: 96
X-Account-Object-Count: 1
X-Timestamp: 1389453423.35964
X-Account-Meta-Subject: Literature
X-Account-Bytes-Used: 14
X-Account-Container-Count: 2
```

```
Content-Type: application/json; charset=utf-8
Accept-Ranges: bytes
X-Trans-Id: tx274a77a8975c4a66aeb24-0052d95365
Date: Fri, 17 Jan 2014 15:59:33 GMT
```

```
[
  {
    "count": 0,
    "bytes": 0,
    "name": "janeausten"
  },
  {
    "count": 1,
    "bytes": 14,
    "name": "marktwain"
  }
]
```

Example List containers response: HTTP and XML

Example of request

```
curl -i $publicURL?format=xml -X GET -H "X-Auth-Token: $token"
```

Example of response

```
HTTP/1.1 200 OK
Content-Length: 262
X-Account-Object-Count: 1
X-Timestamp: 1389453423.35964
X-Account-Meta-Subject: Literature
X-Account-Bytes-Used: 14
X-Account-Container-Count: 2
Content-Type: application/xml; charset=utf-8
Accept-Ranges: bytes
X-Trans-Id: tx69f60bc9f7634a01988e6-0052d9544b
Date: Fri, 17 Jan 2014 16:03:23 GMT
```

```
<?xml version="1.0" encoding="UTF-8"?>
<account name="my_account">
  <container>
    <name>janeausten</name>
    <count>0</count>
    <bytes>0</bytes>
  </container>
  <container>
    <name>marktwain</name>
    <count>1</count>
    <bytes>14</bytes>
  </container>
</account>
```

2.7.5.2 Update account metadata POST /v1/{account}

Creates, updates or deletes account metadata items

Specify the X-Account-Meta-{name} header to create, update, or delete a metadata item, where {name} is its name.

If a specified {name} matches the name of an existing metadata item, then it will be overwritten.

To delete a metadata item, either issue a request with an empty value in the header or specify the "X-Remove-Account-Meta-{name}: *anyValue*" header (for example, "X-Remove-Account-Meta-Book: x" - in this case, the arbitrary value section will be ignored).

Existing metadata items not specified using this API will remain unchanged.

The request body will not be accepted.

Upon successful completion, the 204 status code will be returned.

After updating, perform an account metadata retrieval request to check if the changes took effect.

Request headers

X-Auth-Token

Authentication token

Data type	Cardinality
String	0..1

X-Account-Meta-Temp-URL-Key

Secret key used for temporary URLs.

Data type	Cardinality
String	0..1

X-Account-Meta-Temp-URL-Key-2

Second secret key used for temporary URLs. By using two keys, key rotation is possible.

Data type	Cardinality
String	0..1

X-Account-Meta-name

Account metadata. In {name}, specify the name of the metadata item to be created, updated, or deleted. To delete an item, leave the value empty in the header.

Data type	Cardinality
String	0..*

Request parameters

{account}

Name uniquely assigned by project

Data type	Cardinality
String	1..1

Response headers

Content-Length

If the request was successful, this will be 0. If the request failed, this will be the size (in bytes) of the error text returned in the response body.

Data type	Cardinality
String	1..1

Content-Type

If the request failed, this will be the MIME type of the error text returned in the response body.

Data type	Cardinality
String	1..1

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime of request execution.

Data type	Cardinality
Datetime	1..1

Response elements

None.

Create account metadata items

Example of request

```
curl -i $publicURL -X POST -H "X-Auth-Token: $token" -H "X- Account-Meta-Book: MobyDick" -H "X-Account-Meta-Subject: Literature"
```

Example of response

```
HTTP/1.1 204 No Content
Content-Length: 0
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx8c2dd6aee35442a4a5646-0052d954fb
Date: Fri, 17 Jan 2014 16:06:19 GMT
```

Update account metadata items

Example of request

```
curl -i $publicURL -X POST -H "X-Auth-Token: $token" -H "X-Account-Meta-Subject: AmericanLiterature"
```

Example of response

```
HTTP/1.1 204 No Content
Content-Length: 0
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx1439b96137364ab581156-0052d95532
Date: Fri, 17 Jan 2014 16:07:14 GMT
```

Delete account metadata items

Example of request

```
curl -i $publicURL -X POST -H "X-Auth-Token: $token" -H "X-Remove-Account-Meta-Subject: x"
```

Example of response

```
HTTP/1.1 204 No Content
Content-Length: 0
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx411cf57701424da99948a-0052d9556f
Date: Fri, 17 Jan 2014 16:08:15 GMT
```

2.7.5.3 Retrieve account metadata HEAD /v1/{account}

Retrieves the account metadata

The account metadata comprises the following:

- Number of containers
- Number of objects
- Bytes used by object storage
- Custom metadata specified by the user

When processing the number of bytes used by object storage, handle with care. A large number of objects can be stored in the object storage. If possible, it is recommended to use a 64-bit unsigned integer.

The request body will not be accepted.

The metadata header must not be included in the request.

Upon successful completion, the 204 status code will be returned.

If the authentication token is not suitable, the 401 status code will be returned.

Request headers

X-Auth-Token

Authentication token

Data type	Cardinality
String	0..1

X-Newest

When "True" is set, object storage searches for and returns the newest replica out of all of the replicas. If this header is omitted, object storage selects one normal replica and returns it. When "True" is specified in this header, it becomes extremely costly. Only use this item when absolutely necessary.

Data type	Cardinality
Boolean	0..1

Request parameter

{account}

Name that is uniquely assigned by project

Data type	Cardinality
String	1..1

Response headers

X-Account-Object-Count

Number of objects in the account

Data type	Cardinality
Int	1..1

X-Account-Container-Count

Number of containers

Data type	Cardinality
Int	1..1

X-Account-Bytes-Used

Size of the objects stored in object storage by the account.

Data type	Cardinality
Int	1..1

X-Account-Meta-name

Account metadata. {name} is the name of the metadata item.

Data type	Cardinality
String	0..*

X-Account-Meta-Temp-URL-Key

Secret key used for temporary URLs. If not set, this header will not be returned.

Data type	Cardinality
String	0..1

X-Account-Meta-Temp-URL-Key-2

Second secret key used for temporary URLs. If not set, this header will not be returned.

Data type	Cardinality
String	0..1

Content-Length

Number of bytes of the response body

Data type	Cardinality
String	1..1

Content-Type

MIME type of the response body

Data type	Cardinality
String	1..1

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime when transaction was executed

Data type	Cardinality
Datetime	1..1

Response elements

None.

Example of request

```
curl -i $publicURL -X HEAD -H "X-Auth-Token: $token"
```

Example of response

```
HTTP/1.1 204 No Content
```

```
Content-Length: 0
X-Account-Object-Count: 1
X-Account-Meta-Book: MobyDick
X-Timestamp: 1389453423.35964
X-Account-Bytes-Used: 14
X-Account-Container-Count: 2
Content-Type: text/plain; charset=utf-8
Accept-Ranges: bytes
X-Trans-Id: txafb3504870144b8ca40f7-0052d955d4
Date: Fri, 17 Jan 2014 16:09:56 GMT
```

2.7.5.4 List objects GET /v1/{account}/{container}{?limit,marker,end_marker,prefix,format,delimiter,path}

Retrieves the container details and the list of objects

Object names can be specified in the query parameter.

If omitted, up to 10,000 object names stored in the container can be retrieved.

Also, when the query parameter is used, the lists in a container can be retrieved, divided by page. When the number of containers retrieved is smaller than the value specified in the limit parameter, a list right to end will be retrieved. When the number of containers retrieved equals the value specified in the limit parameter, containers that are yet to be retrieved remain in the list.

Upon successful completion, one of the following status code will be returned:

- 200 OK: If objects exist, a list of objects is returned.
- 204 No Content: The container does not exist or the result of filtering using the limit, marker or end_marker query parameters is empty.

If the specified container does not exist, 404 Not Found will be returned.

Request headers

X-Auth-Token

Authentication token

Data type	Cardinality
String	0..1

X-Newest

When "True" is set, object storage searches for and returns the newest replica out of all of the replicas. If this header is omitted, object storage selects one normal replica and returns it. When "True" is specified in this header, it becomes extremely costly. Only use this item when absolutely necessary.

Data type	Cardinality
String	0..1

Accept

Valid values: application/json, application/xml, text/xml. This header is prioritized over the format query parameter.

Data type	Cardinality
String	0..1

Request parameters

{account}

Name that is uniquely assigned by project

Data type	Cardinality
String	1..1

{container}

Container name

Data type	Cardinality
String	1..1

limit

Maximum number of lists to retrieve.

Data type	Cardinality
Int	0..1

marker

Returns a list of object names that follow the specified string.

Data type	Cardinality
String	0..1

end_marker

Returns a list of object names that precede the specified string.

Data type	Cardinality
String	0..1

prefix

Prefix. Returns a list of objects that start with this string.

Data type	Cardinality
String	0..1

format

Specifies the response format. Valid values: json, xml, and plain. The default is plain.

When format=xml or format=json is specified, the response will include not only the object name but also other details.

When format=plain is specified, a list of object names delimited by line feeds will be returned.

Data type	Cardinality
String	0..1

delimiter

Delimiter for nested display of object names

Data type	Cardinality
Char	0..1

path

Returns a list of object names nested using a pseudo path. This is the same specifying "/" for "delimiter" and "{path}/" for "prefix".

Data type	Cardinality
String	0..1

Response headers

Content-Length

Number of bytes of the response body

Data Type	Cardinality
String	1..1

X-Container-Object-Count

Number of objects in the container

Data type	Cardinality
Int	1..1

Accept-Ranges

Indicates that objects included in the body can be retrieved using the Range header.

Data type	Cardinality
String	1..1

X-Container-Meta-name

Container metadata. {name} is the name of the metadata item.

Data type	Cardinality
String	1..1

X-Container-Bytes-Used

Size (in bytes) of the objects in the container

Data type	Cardinality
Int	1..1

Content-Type

MIME type of the response body

Data type	Cardinality
String	1..1

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime when transaction was executed

Data type	Cardinality
Datetime	1..1

Response elements

container

Envelope of the response

Data type	Cardinality	Parent element	Child element
container	1..1	None	object

object

Set of object information

Data type	Cardinality	Parent element	Child element
object	0..n	container	name hash bytes content_type last_modified

name

Object name

Data type	Cardinality	Parent element	Child element
string	1..1	object	None

hash

MD5 checksum of the object

Data type	Cardinality	Parent element	Child element
string	1..1	object	None

bytes

Size of the object

Data type	Cardinality	Parent element	Child element
string	1..1	object	None

content_type

MIME type of an object

Data type	Cardinality	Parent element	Child element
string	1..1	object	None

last_modified

Datetime when an object was created, or the datetime when the metadata was modified

Data type	Cardinality	Parent element	Child element
string	1..1	object	None

Example Show container details response: HTTP and JSON

Example of request

```
curl -i $publicURL/marktwain?format=json -X GET -H "X-Auth-Token:$token"
```

Example of response

```
HTTP/1.1 200 OK
Content-Length: 341
X-Container-Object-Count: 2
Accept-Ranges: bytes
X-Container-Meta-Book: TomSawyer
X-Timestamp: 1389727543.65372
X-Container-Bytes-Used: 26
Content-Type: application/json; charset=utf-8
X-Trans-Id: tx26377fe5fab74869825d1-0052d6bdf
Date: Wed, 15 Jan 2014 16:57:35 GMT
```

```
[
  {
    "hash": "451e372e48e0f6b1114fa0724aa79fa1",
    "last_modified": "2014-01-15T16:41:49.390270",
    "bytes": 14,
    "name": "goodbye",
    "content_type": "application/octet-stream"
  },
  {
    "hash": "ed076287532e86365e841e92bfc50d8c",
    "last_modified": "2014-01-15T16:37:43.427570",
    "bytes": 12,
    "name": "helloworld",
    "content_type": "application/octet-stream"
  }
]
```

Example Show container details response: HTTP and XML

Example of request

```
curl -i $publicURL/marktwain?format=xml -X GET -H "X-Auth-Token:$token"
```

Example of response

```
HTTP/1.1 200 OK
Content-Length: 500
X-Container-Object-Count: 2
Accept-Ranges: bytes
X-Container-Meta-Book: TomSawyer
X-Timestamp: 1389727543.65372
X-Container-Bytes-Used: 26
Content-Type: application/xml; charset=utf-8
X-Trans-Id: txc75ea9a6e66f47d79e0c5-0052d6be76
Date: Wed, 15 Jan 2014 16:59:35 GMT

<?xml version="1.0" encoding="UTF-8"?>
  <container name="marktwain">
    <object>
      <name>goodbye</name>
      <hash>451e372e48e0f6b1114fa0724aa79fa1</hash>
      <bytes>14</bytes>
      <content_type>application/octet-stream</content_type>
      <last_modified>2014-01-15T16:41:49.390270</last_modified>
    </object>
    <object>
      <name>helloworld</name>
      <hash>ed076287532e86365e841e92bfc50d8c</hash>
      <bytes>12</bytes>
      <content_type>application/octet-stream</content_type>
      <last_modified>2014-01-15T16:37:43.427570</last_modified>
    </object>
  </container>
```

2.7.5.5 Create container PUT /v1/{account}/{container}

Creates a container

It is not necessary to check if a container with the same name already exists before executing this API - if the container does not exist yet, it will be created, otherwise it will be updated.

If a container is created successfully, the 201 status code will be returned. If an existing container is updated successfully, the 202 status code will be returned.

Request headers

X-Auth-Token

Authentication token

Data type	Cardinality
String	0..1

X-Container-Read

Sets the read permissions ACL.

Data type	Cardinality
String	0..*

X-Container-Write

Sets the write permissions ACL.

Data type	Cardinality
String	0..*

X-Versions-Location

Enables versioning of objects in a container. The name of another container that has been URL-encoded in UTF-8 format must be specified. To disable versioning, leave the value empty.

Data type	Cardinality
String	0..1

X-Container-Meta-name

Container metadata. {name} is the name of the metadata item.

Data type	Cardinality
String	0..*

X-Container-Meta-Web-Index

Sets the object name of the Index file. For example, when index.html is set, the index page will become /{container}/index.html.

Data type	Cardinality
String	0..1

X-Container-Meta-Web-Error

Sets the object name of error page files. For example, if error.html is set, 401 errors will become /{container}/401error.html, and 404 errors will become /{container}/404error.html objects.

Data type	Cardinality
String	0..1

X-Container-Meta-Web-Listing

When "TRUE" is set, directory list display becomes enabled. For security purposes, this item should not normally be enabled.

Data type	Cardinality
Boolean	0..1

X-Container-Meta-Web-Listing-CSS

Sets an object name of the style sheet for displaying directory lists. For example, if lists.css is set, the /{container}/lists.css object will be used as the style sheet.

Data type	Cardinality
String	0..1

Request parameters

{account}

Name that is uniquely assigned by project

Data type	Cardinality
String	1..1

{container}

Container name

Data type	Cardinality
String	1..1

Response headers

Content-Length

Number of bytes of the response body

Data type	Cardinality
String	1..1

Content-Type

MIME type of the response body

Data type	Cardinality
String	1..1

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime when transaction was executed

Data type	Cardinality
Datetime	1..1

Response elements

None.

When metadata is not set

Example of Request

```
curl -i $publicURL/steven -X PUT -H "Content-Length: 0" -H "X-Auth-Token: $token"
```

Example of response

```
HTTP/1.1 201 Created
Content-Length: 0
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx7f6b7fa09bc2443a94df0-0052d58b56
Date: Tue, 14 Jan 2014 19:09:10 GMT
```

When metadata is set

Example of request

```
curl -i $publicURL/steven -X PUT -H "Content-Length: 0" -H "X-Auth-Token: $token"
```

Example of response

```
HTTP/1.1 201 Created
Content-Length: 0
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx06021f10fc8642b2901e7-0052d58f37
Date: Tue, 14 Jan 2014 19:25:43 GMT
```

2.7.5.6 Delete container DELETE /v1/{account}/{container}

Deletes an empty container.

This operation will fail if the container contains any objects.

Upon successful completion, the 204 No Content status code will be returned.

If the operation fails, the 404 No Content or 409 Conflict status code will be returned.

Request header

X-Auth-Token

Authentication token

Data type	Cardinality
String	0..1

Request parameters

{account}

Name that is uniquely assigned by project

Data type	Cardinality
String	1..1

{container}

Container name

Data type	Cardinality
String	1..1

Response headers

Content-Length

Number of bytes of the response body

Data type	Cardinality
String	1..1

Content-Type

MIME type of the response body

Data type	Cardinality
String	1..1

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime when transaction was executed

Data type	Cardinality
Datetime	1..1

Response elements

None.

Example of request

```
curl -i $publicURL/steven -X DELETE -H "X-Auth-Token: $token"
```

Example of response

Response when the container does not exist

```
HTTP/1.1 404 Not Found
Content-Length: 70
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx4d728126b17b43b598bf7-0052d81e34
Date: Thu, 16 Jan 2014 18:00:20 GMT
```

Response when the container existed and deletion was successful

```
HTTP/1.1 204 No Content
Content-Length: 0
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx7f76c375e8e4df19c84c-0052d81f14
Date: Thu, 16 Jan 2014 18:04:04 GMT
```

Response when the container exists but is not empty

```
HTTP/1.1 409 Conflict
Content-Length: 95
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx7782dc6a97b94a46956b5-0052d81f6b
Date: Thu, 16 Jan 2014 18:05:31 GMT
<html><h1>Conflict</h1><p>There was a conflict when trying to complete your
request.</p></html>
```

2.7.5.7 Update container metadata POST /v1/{account}/{container}

Creates, updates or deletes custom container metadata items

Specify the X-Container-Meta-{name} header to create, update, or delete a metadata item. where {name} is its name.

If a specified {name} matches the name of an existing metadata item, then it will be overwritten.

To delete a metadata item, either issue a request with an empty value in the header or specify the "X-Remove-Container-Meta-{name}: *anyvalue*" header. (for example, "X-Remove-Container-Meta-Book: x" - in this case, the arbitrary value section will be ignored).

Existing metadata items not specified using this API will remain unchanged.

Upon successful completion, the 204 status code will be returned.

After updating, perform a container metadata retrieval request to check if the changes took effect.

Request headers

X-Auth-Token

Authentication token

Data type	Cardinality
String	0..1

X-Container-Read

Sets the read permissions ACL.

Data type	Cardinality
String	0..1

X-Remove-Container-name

X-Remove-Container-Meta-name

Deletes the {name} metadata item.

For example, if "X-Remove-Container-Read" is specified, the "X-Container-Read" metadata item will be deleted.

For custom metadata, if "X-Remove-Container-Meta-Book" is specified, the "X- Remove-Container-Meta-Book" metadata item will be deleted.

Data type	Cardinality
String	0..1

X-Container-Write

Sets the write permissions ACL.

Data type	Cardinality
String	0..1

X-Versions-Location

Enables versioning of objects in a container. The name of another container that has been URL-encoded in UTF-8 format must be specified. To disable versioning, leave the value empty.

Data type	Cardinality
String	0..1

X-Remove-Versions-Location

Disables versioning.

Data type	Cardinality
String	0..1

X-Container-Meta-name

Container metadata. {name} is the name of the metadata item.

Data type	Cardinality
String	0..*

X-Container-Meta-Web-Index

Sets the object name of the Index file. For example, when index.html is set, the index page will become /{container}/index.html.

Data type	Cardinality
String	0..1

X-Container-Meta-Web-Error

Sets the object name of error page files. For example, if error.html is set, 401 errors will become /{container}/401error.html, and 404 errors will become /{container}/404error.html objects.

Data type	Cardinality
String	0..1

X-Container-Meta-Web-Listing

When "TRUE" is set, directory list display becomes enabled. For security purposes, this item should not normally be enabled.

Data type	Cardinality
Boolean	0..1

X-Container-Meta-Web-Listing-CSS

Sets an object name of the style sheet for displaying directory lists. For example, if lists.css is set, the /{container}/lists.css object will be used as the style sheet.

Data type	Cardinality
String	0..1

Request parameters

{account}

Name uniquely assigned by project

Data type	Cardinality
String	1..1

{container}

Container name

Data type	Cardinality
String	1..1

Response headers

Content-Length

Number of bytes of the response body

Data type	Cardinality
String	1..1

Content-Type

MIME type of the response body

Data type	Cardinality
String	1..1

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime when transaction was executed

Data type	Cardinality
Datetime	1..1

Response elements

None.

Create container metadata:

Example of request

```
curl -i $publicURL/marktwain -X POST -H "X-Auth-Token: $token" -H "X-Container-Meta-Author: MarkTwain" -H "X-Container-Meta-Century: Nineteenth"
```

Example of response

```
HTTP/1.1 204 No Content
Content-Length: 0
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx05dbd434c651429193139-0052d82635
Date: Thu, 16 Jan 2014 18:34:29 GMT
```

Update container metadata:

Example of request

```
curl -i $publicURL/marktwain -X POST -H "X-Auth-Token: $token" -H "X-Container-Meta-Author: SamuelClemens"
```

Example of response

```
HTTP/1.1 204 No Content
Content-Length: 0
Content-Type: text/html; charset=UTF-8
X-Trans-Id: txe60c7314bf614bb39dfe4-0052d82653
Date: Thu, 16 Jan 2014 18:34:59 GMT
```

Delete container metadata:

Example of request

```
curl -i $publicURL/marktwain -X POST -H "X-Auth-Token: $token" -H "X-Remove-Container-Meta-Century: x"
```

Example of response

```
HTTP/1.1 204 No Content
Content-Length: 0
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx7997e18da2a34a9e84ceb-0052d826d0
Date: Thu, 16 Jan 2014 18:37:04 GMT
```

2.7.5.8 Retrieve container metadata HEAD /v1/{account}/{container}

Retrieves the container metadata, including the number of objects and their size in bytes

Upon successful completion, the 204 status code is returned.

Request headers

X-Auth-Token

Authentication token

Data type	Cardinality
String	0..1

X-Newest

When "True" is set, object storage searches for and returns the newest replica out of all of the replicas. If this header is omitted, object storage selects one normal replica and returns it. When "True" is specified in this header, it becomes extremely costly. Only use this item when absolutely necessary.

Data type	Cardinality
String	0..1

Request parameters

{account}

Name uniquely assigned by project

Data type	Cardinality
String	1..1

{container}

Container name

Data type	Cardinality
String	1..1

Response headers

Content-Length

Number of bytes of the response body

Data type	Cardinality
String	1..1

X-Container-Object-Count

Number of objects in the container

Data type	Cardinality
Int	1..1

X-Container-Meta-name

Container metadata. {name} is the name of the metadata item.

Data type	Cardinality
String	1..1

X-Container-Bytes-Used

Size (in bytes) of the objects in the container

Data type	Cardinality
Int	1..1

X-Container-Read

Read permissions ACL. If omitted, this will not be returned.

Data type	Cardinality
String	0..1

X-Container-Write

Write permissions ACL. If omitted, this will not be returned.

Data type	Cardinality
String	0..1

X-Versions-Location

Versioning settings of objects in a container. If omitted, this will not be returned.

Data type	Cardinality
String	0..1

Content-Type

MIME type of the response body

Data type	Cardinality
String	1..1

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime when transaction was executed.

Data type	Cardinality
Datetime	1..1

X-Container-Meta-Web-Index

Object name of Index file.

Data type	Cardinality
String	0..1

X-Container-Meta-Web-Error

Object name of Error page file.

Data type	Cardinality
String	0..1

X-Container-Meta-Web-Listing

When display of directory lists is enabled, "True" is returned.

Data type	Cardinality
String	0..1

X-Container-Meta-Web-Listing-CSS

Object name of the style sheet for displaying directory lists.

Data type	Cardinality
String	0..1

Response elements

None.

Example of request

```
curl -i $publicURL/marktwain -X HEAD -H "X-Auth-Token: $token"
```

Example of response

```
HTTP/1.1 204 No Content
Content-Length: 0
X-Container-Object-Count: 1
Accept-Ranges: bytes
X-Container-Meta-Book: TomSawyer
X-Timestamp: 1389727543.65372
X-Container-Meta-Author: SamuelClemens
X-Container-Bytes-Used: 14
Content-Type: text/plain; charset=utf-8
X-Trans-Id: tx0287b982a268461b9ec14-0052d826e2
Date: Thu, 16 Jan 2014 18:37:22 GMT
```

2.7.5.9 Download object GET /v1/{account}/{container}/{object}

Retrieves object contents and their metadata.

When handling large objects, the response will include the object name after joining. When retrieving the manifest file of a static large object as is, use the multipart-manifest query parameter.

Upon successful completion, the 200 status code is returned. If the object does not exist, the 404 status code is returned.

Request headers

X-Auth-Token

Authentication token

Data type	Cardinality
String	0..1

X-Newest

When "True" is set, object storage searches for and returns the newest replica out of all of the replicas. If this header is omitted, object storage selects one normal replica and returns it. When "True" is specified in this header, it becomes extremely costly. Only use this item when absolutely necessary.

Data type	Cardinality
String	0..1

Range

Range of contents to be retrieved.

You can use the Range header to specify a range to retrieve part of the data. When multiple ranges are specified, separate them with a comma.

The method for specifying a range is as follows:

- Byte range:

Specify from which byte to which byte of the data is to be returned. When the end byte of the data is omitted, the data up to the end will be returned.

- Suffix byte range:
Specify how many bytes to return for the data suffix.

Data type	Cardinality
Dict	0..1

If-Match

Refer to <http://www.ietf.org/rfc/rfc2616.txt>

Data type	Cardinality
Dict	0..1

If-Modified-Since

Refer to <http://www.ietf.org/rfc/rfc2616.txt>

Data type	Cardinality
Dict	0..1

If-Unmodified-Since

Refer to <http://www.ietf.org/rfc/rfc2616.txt>

Data type	Cardinality
Dict	0..1

Request parameters

{account}

Name uniquely assigned by project

Data type	Cardinality
String	1..1

{container}

Container name

Data type	Cardinality
String	1..1

{object}

Object name

Data type	Cardinality
String	1..1

Signature

Uses a signature for requests in the URL feature with effective period.

Data type	Cardinality
String	0..1

Expires

Specifies the effective period of the signature in the URL feature with effective period.

Data type	Cardinality
String	0..1

multipart-manifest

When the object is large, multipart-manifest=get can be specified in the query parameter. The object itself is not returned at that time. Instead, in the case of a dynamic large object, the X-Object-Manifest response header is returned, and in the case of a static large object, Manifest is returned in the response body.

Data type	Cardinality
String	0..1

Response headers

Content-Length

Size of object (bytes)

Data type	Cardinality
String	1..1

Accept-Ranges

Ranges type that can be specified when retrieving objects

Data type	Cardinality
String	1..1

Last-Modified

Datetime when an object was created, or the datetime when the metadata was last modified

Data type	Cardinality
String	1..1

ETag

When an object is smaller than 5 GB, this value will be the MD5 checksum of the object. Also, this value is not enclosed in quotations.

In the case of a manifest object, a value with the retrieved MD5 checksum for a string that combines the ETag and MD5 checksums of each segment of the manifest is returned.

You are strongly advised to compare the ETag header value with the MD5 checksum value of the object that was actually downloaded. If the values are different, this indicates that the contents are corrupted, so perform retry processing.

Data type	Cardinality
String	1..1

Content-Type

MIME type of the response body

Data type	Cardinality
String	1..1

Content-Encoding

Metadata of Content-Encoding.

If omitted, this will not be returned.

Data type	Cardinality
String	0..1

Content-Disposition

This is returned when the browser behavior has been set.

Refer to "<http://www.ietf.org/rfc/rfc2183.txt>" for details on the value that is returned.

Data type	Cardinality
String	0..1

X-Delete-At

The date on which an object will be deleted is returned in UNIX Epoch timestamp format. If omitted, this will not be returned.

Data type	Cardinality
Int	1..1

X-Object-Meta-name

Object metadata {name} is the name of the metadata item.

Data type	Cardinality
String	0..1

X-Object-Manifest

Returns the dynamic large object settings. This value takes the container name and prefix name of the split object, as follows. container/prefix

Data type	Cardinality
String	0..1

X-Static-Large-Object

If the object is the manifest object of a static large object, "True" will be returned.

Data type	Cardinality
Bool	0..1

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime when transaction was executed

Data type	Cardinality
Datetime	1..1

Response elements

The object is returned.

When an object exists

Example of request

```
curl -i $publicURL/marktwain/goodbye -X GET -H "X-Auth-Token: $token"
```

Example of response

```
HTTP/1.1 200 OK
Content-Length: 14
Accept-Ranges: bytes
Last-Modified: Wed, 15 Jan 2014 16:41:49 GMT
Etag: 451e372e48e0f6b1114fa0724aa79fa1
X-Timestamp: 1389804109.39027
X-Object-Meta-Orig-Filename: goodbyeworld.txt
Content-Type: application/octet-stream
X-Trans-Id: tx8145a190241f4cf6b05f5-0052d82a34
Date: Thu, 16 Jan 2014 18:51:32 GMT
Goodbye World!
```

When an object does not exist

Example of request

```
curl -i $publicURL/janeausten/goodbye -X GET -H "X-Auth-Token: $token"
```

Example of response

```
HTTP/1.1 404 Not Found
Content-Length: 70
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx073f7cbb850c4c99934b9-0052d82b04
Date: Thu, 16 Jan 2014 18:55:00 GMT
<html><h1>Not Found</h1><p>The resource could not be found.</p></html>
```

2.7.5.10 Upload object PUT /v1/{account}/{container}/{object}{?multipart-manifest,signature,expires}

Creates an object using the specified content and metadata or replaces an existing object with the specified content and metadata.

When this operation is used to copy a manifest object, the new object becomes a normal object with all segments joined. Therefore, it is not possible to copy an object that has a combined size exceeding 5 GB.

When creation of an object is successful, the 201 Created status code is returned.

When a request times out, the 408 Request Timeout error code is returned.

If neither Transfer-Encoding nor Content-Length request header are specified, the 411 Length Required error code is returned.

If the value set for ETag and the MD5 checksum of the data do not match, the 422 Unprocessable Entity error code is returned.

Request headers

X-Object-Manifest

Sets the manifest object of a dynamic large object. This value takes the container name and prefix name of the split object as follows: {container}/{prefix}. Also, it is necessary for the container name and prefix name of the split object to be UTF-8-encoded as well as URL-encoded before being set in the header.

Data type	Cardinality
String	0..1

X-Auth-Token

Authentication token

Data type	Cardinality
String	0..1

Content-Length

Size of object (bytes). This item cannot be set if transferring in chunked format.

Data type	Cardinality
String	0..1

Transfer-Encoding

If transferring in chunked format, use Transfer-Encoding: chunked. If using this header, a Content-Length header cannot be assigned.

Data type	Cardinality
String	0..1

Content-Type

Changes the MIME type of an object.

Data type	Cardinality
String	0..1

X-Detect-Content-Type

When "true" is set, the object storage will automatically set the MIME type based on the file extension. Settings using the Content-Type header will be ignored.

Data type	Cardinality
Boolean	0..1

X-Copy-From

Specifies the copy source object name.

This value is specified in {container}/{object} format.

Also, it is necessary for this value to be UTF-8-encoded as well as URL-encoded before being set in the header.

A PUT operation using the X-Copy-From header is the same as performing a COPY operation.

Data type	Cardinality
String	0..1

ETag

MD5 checksum of the request body. For example, an MD5 checksum of the files to be uploaded. In order to perform full uploads, it is strongly recommended to calculate the MD5 checksum of the object in advance, set it for this header and issue the request. This value is not to be enclosed in quotation marks.

Data type	Cardinality
String	0..1

Content-Disposition

Sets the browser behavior.

Refer to "<http://www.ietf.org/rfc/rfc2183.txt>" for details on the value to set.

Data type	Cardinality
String	0..1

Content-Encoding

Sets the Content-Encoding metadata.

Data type	Cardinality
String	0..1

X-Delete-At

Specify the date on which an object should be deleted in UNIX Epoch timestamp format.

Data type	Cardinality
Int	0..1

X-Delete-After

Specify the number of seconds until an object is deleted. This value is converted to X-Delete-At in the object storage.

Data type	Cardinality
Int	0..1

X-Object-Meta-name

Object metadata {name} is the name of the metadata item.

Data type	Cardinality
String	0..*

If-None-Match

Expect: Use in combination with 100-Continue. This is used to check if the server is holding a cache of the data already specified in the header.

Data type	Cardinality
String	0..1

Request parameters

{account}

Name uniquely assigned by project

Data type	Cardinality
String	1..1

{container}

Container name

Data type	Cardinality
String	1..1

{object}

Object name

Data type	Cardinality
String	1..1

signature

Uses a signature for requests in the URL feature with effective period.

Data type	Cardinality
String	0..1

expires

Specifies the effective period of the signature in the URL feature with effective period.

Data type	Cardinality
String	0..1

multipart-manifest

When ?multipart-manifest=put is specified, the object is uploaded as the manifest of a static large object. The request body includes a description of the manifest.

Data type	Cardinality
String	0..1

Response header

Content-Length

Number of bytes of the response body

Data type	Cardinality
String	1..1

ETag

When an object is smaller than 5 GB, this value will be the MD5 checksum of the uploaded object. This value is not to be enclosed in quotation marks.

When an ETag header is assigned and the PUT operation is successful for the request, this value will be the same as the specified ETag.

Also, when an ETag header has not been assigned, check if this value is the same as the ETag value of the object that was uploaded.

In the case of a static large object, a value with the retrieved MD5 checksum for a string that combines the ETag and MD5 checksums of each segment of the manifest is returned.

In the case of a dynamic large object, this value will be the MD5 checksum of a null character.

Data type	Cardinality
String	1..1

Content-Type

MIME type of an object

Data type	Cardinality
String	1..1

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime when transaction was executed

Data type	Cardinality
Datetime	1..1

Response elements

None

Example of request

```
curl -i $publicURL/janeausten/helloworld.txt -X PUT -H "Content-Length: 1" -H "Content-Type: text/html; charset=UTF-8" -H "X-Auth-Token: $token"
```

Example of response

```
HTTP/1.1 201 Created
Last-Modified: Fri, 17 Jan 2014 17:28:35 GMT
Content-Length: 116
Etag: d41d8cd98f00b204e9800998ecf8427e
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx4d5e4f06d357462bb732f-0052d96843
Date: Fri, 17 Jan 2014 17:28:35 GMT
```

2.7.5.11 Copy object COPY /v1/{account}/{container}/{object}

Copies an object.

This is the same as using PUT and specifying X-Copy-From.

When this operation is used to copy a manifest object, the new object becomes a normal object with all segments joined. Therefore, it is not possible to copy an object that has a combined size exceeding 5 GB.

The same metadata as that of the copy source object is assigned. If metadata is specified when making a request, the metadata of the copy destination object will be updated after copying is done.

When creation of an object is successful, the 201 Created status code is returned.



Caution

The object storage is in state in which a number of replicas exist, based on Eventual Consistency, and the COPY operation is performed with the latest replica selected. In other words, when COPY is used, this performs the same operation as when the X-Newest header is used.

Request headers

X-Auth-Token

Authentication token

Data type	Cardinality
String	0..1

Destination

Specify the copy destination container name and object name using the `/container/object` format. Also, it is necessary for the container name and object name to be UTF-8-encoded as well as URL-encoded before being set in the header.

Data type	Cardinality
String	1..1

Content-Type

MIME type of an object

Data type	Cardinality
String	0..1

Content-Encoding

Sets the Content-Encoding metadata.

Data type	Cardinality
String	0..1

Content-Disposition

Sets the browser behavior.

Refer to "<http://www.ietf.org/rfc/rfc2183.txt>" for details on the value to set.

Data type	Cardinality
String	0..1

X-Object-Meta-name

Object metadata {name} is the name of the metadata item.

Data type	Cardinality
String	0..1

Request parameters

{account}

Name uniquely assigned by project

Data type	Cardinality
String	1..1

{container}

Container name

Data type	Cardinality
String	1..1

{object}

Object name

Data type	Cardinality
String	1..1

Response Headers

X-Copied-From-Last-Modified

Last modified datetime of copy source object

Data type	Cardinality
String	0..1

X-Copied-From

Container name and object name of copy source object. This is returned using the {container}/{object} format.

Data type	Cardinality
String	0..1

Last-Modified

Datetime when an object was created, or the datetime when the metadata was modified

Data type	Cardinality
String	1..1

ETag

MD5 checksum of an object. This value is not to be enclosed in quotation marks.

Data type	Cardinality
String	1..1

Content-Type

MIME type of an object

Data type	Cardinality
String	1..1

X-Object-Meta-name

Object metadata {name} is the name of the metadata item.

Data type	Cardinality
String	0..

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime when transaction was executed

Data type	Cardinality
Datetime	1..1

Response elements

None

COPY

Example of request

```
curl -i $publicURL/marktwain/goodbye -X COPY -H "X-Auth-Token: $token" -H "Destination: janeausten/goodbye"
```

Example of response

```
HTTP/1.1 201 Created
Content-Length: 0
X-Copied-From-Last-Modified: Thu, 16 Jan 2014 21:19:45 GMT
X-Copied-From: marktwain/goodbye
Last-Modified: Fri, 17 Jan 2014 18:22:57 GMT
Etag: 451e372e48e0f6b1114fa0724aa79fa1
Content-Type: text/html; charset=UTF-8
X-Object-Meta-Movie: AmericanPie
X-Trans-Id: txdc481ad49d24e9a81107-0052d97501
Date: Fri, 17 Jan 2014 18:22:57 GMT
```

(Reference) When copying using a "X-Copy-From" header with PUT

Example of request

```
curl -i $publicURL/janeausten/goodbye -X PUT -H "X-Auth-Token: $token" -H "X-Copy-From: /marktwain/goodbye" -H "Content-Length: 0"
```

Example of response

```
HTTP/1.1 201 Created
Content-Length: 0
X-Copied-From-Last-Modified: Thu, 16 Jan 2014 21:19:45 GMT
X-Copied-From: marktwain/goodbye
Last-Modified: Fri, 17 Jan 2014 18:22:57 GMT
Etag: 451e372e48e0f6b1114fa0724aa79fa1
Content-Type: text/html; charset=UTF-8
X-Object-Meta-Movie: AmericanPie
X-Trans-Id: txdc481ad49d24e9a81107-0052d97501
Date: Fri, 17 Jan 2014 18:22:57 GMT
```

2.7.5.12 Delete object DELETE /v1/{account}/{container}/{object}

Deletes an object

Objects are deleted immediately. If a GET, HEAD, POST, or DELETE operation is performed after deletion, the 404 Not Found error code is returned.

To delete static large objects, it is necessary to delete the manifest and split objects. By specifying the multipart-manifest=delete query parameter, the manifest and split objects are deleted at once.

Normally, the DELETE operation does not return the response body. When the multipart-manifest=delete query parameter is specified, a list of the manifests and split objects along with their deletion status will be included in the response body.

Response code when an error occurs: 400, 500, ...

Request header

X-Auth-Token

Authentication token If omitted, the request will fail, unless access using an access control list (ACL) is permitted by the account owner.

Data type	Cardinality
String	0..1

Request parameters

{account}

Unique name of the account. An "account" is also referred to as a "project" or "tenant".

{container}

Unique name of the container.

{object}

Unique name of the object.

multipart-manifest

When the target is a static large object

- Specify multipart-manifest=delete
The manifest and split objects will be deleted.
- Omit multipart-manifest=delete
Only the manifest will be deleted. The split objects will not be deleted.

Response headers

Content-Length

When the operation is successful, this value will be 0. When the operation fails, this value will be the length of the error text stored in the response body.

Data type	Cardinality
String	1..1

Content-Type

MIME type of the object.

Data type	Cardinality
String	1..1

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime when transaction was executed.

Data type	Cardinality
Datetime	1..1

Response elements

None

Delete the helloworld object from Marktwain content

Example of request

```
curl -i $publicURL/marktwain/helloworld -X DELETE -H "X-Auth-Token: $token"
```

Example of response

```
HTTP/1.1 204 No Content
Content-Length: 0
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx36c7606fcd1843f59167c-0052d6fdac
Date: Wed, 15 Jan 2014 21:29:16 GMT
```

2.7.5.13 Retrieve object metadata HEAD /v1/{account}/{container}/{object}

Retrieves object metadata

Response code when the state is normal: 204

Request headers

X-Auth-Token

Authentication token

Data type	Cardinality
String	1..1

X-Newest

When "True" is set for this header, a search of all replicas is performed, and the latest replica is returned. If this header is omitted, the response will be faster because the search is for one valid replica only. This item will increase the load on the system, so it should only be used when absolutely necessary.

Data type	Cardinality
Boolean	0..1

Request parameters

{account}

Unique name of the account. An "account" is also referred to as a "project" or "tenant".

Data type	Cardinality
String	1..1

{container}

Unique name of the container.

Data type	Cardinality
String	1..1

{object}

Unique name of the object.

Data type	Cardinality
String	1..1

Query Parameters

Signature

Uses a signature for requests in the URL feature with effective period.

Data type	Cardinality
String	0..1

Expires

Specifies the effective period of the signature in the URL feature with effective period.

Data type	Cardinality
String	0..1

Response headers

Last-Modified

Datetime when the object was created, or datetime when the metadata was updated previously.

Data type	Cardinality
String	1..1

Content-Length

Size of the object.

Data type	Cardinality
String	1..1

Content-Type

MIME type of the object.

Data type	Cardinality
String	1..1

ETag

For objects smaller than 5 GB, this value is the MD5 checksum of the object content.

When an object is smaller than 5 GB, the MD5 checksum of the object will be returned. This value is not to be enclosed in quotation marks.

In the case of a manifest object, a value with the retrieved MD5 checksum for a string that combines the ETag and MD5 checksums of each segment of the manifest is returned. This is not the MD5 checksum of the downloaded object. Also, the value is to be enclosed in double quotation marks.

You are strongly advised to calculate the MD5 checksum of the response body, and compare it with the value retrieved using the ETag header. If the values are different, this indicates that the contents are corrupt, so it will be necessary to try again.

Data type	Cardinality
String	1..1

Content-Encoding

If a value has been set, the Content-Encoding metadata value will be returned. If a value has not been set, a value will not be returned by this operation.

Data type	Cardinality
String	0..1

Content-Disposition

This is returned when the browser behavior has been set.

Refer to "<http://www.ietf.org/rfc/rfc2183.txt>" for details on the value that is returned.

Data type	Cardinality
String	0..1

X-Delete-At

The date on which an object will be deleted is returned in UNIX Epoch timestamp format. If omitted, this will not be returned.

Data type	Cardinality
Int	0..1

X-Object-Manifest

Returns the dynamic large object settings. This value takes the container name and prefix name of the split object in the {container}/{prefix} format.

Data type	Cardinality
String	0..1

X-Object-Meta-name

Object metadata {name} is the name of the metadata item.

Data type	Cardinality
String	0..1

X-Static-Large-Object

If the object is the manifest object of a static large object, "True" will be returned.

Data type	Cardinality
String	1..1

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime when transaction was executed

Data type	Cardinality
Datetime	1..1

Response elements

None.

Retrieve object metadata

Example of request

```
curl -i $publicURL/marktwain/goodbye -X HEAD -H "X-Auth-Token:$token"
```

Example of response

```
HTTP/1.1 200 OK
Content-Length: 14
Accept-Ranges: bytes
Last-Modified: Thu, 16 Jan 2014 21:12:31 GMT
Etag: 451e372e48e0f6b1114fa0724aa79fa1
X-Timestamp: 1389906751.73463
X-Object-Meta-Book: GoodbyeColumbus
Content-Type: application/octet-stream
X-Trans-Id: tx37ea34dcd1ed48ca9bc7d-0052d84b6f
Date: Thu, 16 Jan 2014 21:13:19 GMT
```

2.7.5.14 Update object metadata POST /v1/{account}/{container}/{object}

Creates or updates object metadata

Use the X-Object-Meta-{name} header to create or update custom metadata items. Specify the name of custom metadata item in {name}.

Previously assigned custom metadata items will be deleted. It will be necessary to use a POST request to re-create custom metadata items.

The system metadata will not be updated.

However, updating is possible using the following headers: Content-Type, Content-Encoding, Content-Disposition, and X-Delete-At. Unless these are specified as a request header, the metadata will not be changed.

Normal response codes: 202

Request headers

X-Auth-Token

Authentication token If omitted, the request will fail, unless access using an access control list (ACL) is permitted by the account owner.

Data type	Cardinality
String	0..1

X-Object-Meta-name

Container metadata. {name} is the name of the metadata.

Data type	Cardinality
String	0..1

X-Delete-At

Specify the date on which an object should be deleted in UNIX Epoch timestamp format.

Data type	Cardinality
Int	0..1

Content-Disposition

Sets the browser behavior.

Refer to "<http://www.ietf.org/rfc/rfc2183.txt>" for details on the value to set.

Data type	Cardinality
String	0..1

Content-Encoding

Specify the Content-Encoding metadata.

Data type	Cardinality
String	0..1

X-Delete-After

Specify the time that should elapse until the object is deleted.

The Object Storage system holds this value as "X-Delete-At" metadata

Data type	Cardinality
Int	0..1

Content-Type

Change the MIME type of an object.

Data type	Cardinality
String	0..1

X-Detect-Content-Type

Specify automatic detection of the Content-Type of an object.

When "True" is specified for this header, the value specified in the Content-Type header will be ignored, and the content type will be inferred from the file extension.

Data type	Cardinality
Boolean	0..1

Request parameters

{account}

Unique name of the account. An "account" is also referred to as a "project" or "tenant".

Data type	Cardinality
String	1..1

{container}

Unique name of the container.

Data type	Cardinality
String	1..1

{object}

Unique name of the object.

Data type	Cardinality
String	1..1

Response headers

Content-Length

When the operation is successful, this value will be 0. When the operation fails, this value will be the length of the error text stored in the response body.

Data type	Cardinality
String	1..1

Content-Type

MIME type of the object.

Data type	Cardinality
String	1..1

X-Trans-Id

ID assigned to this request. This is used when inquiring about issues.

Data type	Cardinality
Uuid	1..1

Date

Datetime information of a transaction.

Data type	Cardinality
Datetime	1..1

Response elements

The HTML content indicating that the metadata was created is returned.

Create object metadata

Example of request

```
curl -i $publicURL/marktwain/goodbye -X POST -H "X-Auth-Token:
$token" -H "X-Object-Meta-Book: GoodbyeColumbus"
```

Example of Response

```
HTTP/1.1 202 Accepted
Content-Length: 76
Content-Type: text/html; charset=UTF-8
X-Trans-Id: txb5fb5c91ba1f4f37bb648-0052d84b3f
Date: Thu, 16 Jan 2014 21:12:31 GMT
```

```
<html><h1>Accepted</h1><p>The request is accepted for processing.</p></html>
```

Update object metadata

Example of request

```
curl -i $publicURL/marktwain/goodbye -X POST -H "X-Auth-Token: $token" -H "X-Object-Meta-Book: GoodbyeOldFriend"
```

Example of response

```
HTTP/1.1 202 Accepted
Content-Length: 76
Content-Type: text/html; charset=UTF-8
X-Trans-Id: tx5ec7ab81cdb34ced887c8-0052d84ca4
Date: Thu, 16 Jan 2014 21:18:28 GMT
<html><h1>Accepted</h1><p>The request is accepted for processing.</p></html>
```

2.7.5.15 Bulk operation POST /v1/{account}?bulk-delete

Delete multiple objects or containers by one request.

Requesting POST specifying "?bulk-delete" for query parameter enables delete of multiple objects and containers. Two or more objects or containers can be deleted by requesting POST specifying "?bulk-delete" for query parameter. Objects can be deleted up to 10000 by one request. Specify the object and the container to be deleted by a line feed code in request body.

The object to be deleted is specified by the following formats. Please specify the object name that is encoded to URL encode after UTF-8 encoding.

```
/container_name/obj_name
```

The container to be deleted is specified by the following formats. Please specify the container name that is encoded to URL encode after UTF-8 encoding. Container must be empty at delete time.

```
/container_name
```

When the request is accepted, status code 200 is always returned.

To identify whether delete of object was success or not, the response body that exists in the following examples should be analyzed.

```
{
  "Number Not Found": 0,
  "Response Status": "200 OK",
  "Errors": [],
  "Number Deleted": 12,
  "Response Body": ""
}
```

In case all of the delete target objects and the containers are deleted or they didn't exist already, "Response Status" is "200 OK". In case delete process failed, response code 400 or 5XX are

returned in "Response Status". The object name of error and response code that indicate error are included in "Errors".

Also refer to the [API error codes](#) on page 255 for the status code of failed case.

Request Headers

X-Auth-Token

Authentication token. When omitting it, The request fails unless the account owner has permitted access by access control list (ACL).

Data Type	Cardinality
String	0..1

Content-Type

Specify text/plain.

Data Type	Cardinality
String	0..1

Accept

application/json, application/xml, and text/xml can be set.

Data Type	Cardinality
String	0..1

Request Parameter

{account}

Allocated name that is unique in a project.

Data Type	Cardinality
String	1..1

Response Headers

Content-Type

MIME type of Response body.

Data Type	Cardinality
String	1..1

X-Trans-Id

ID allocated for this request. Used as inquiring the trouble.

Data Type	Cardinality
Uuid	1..1

Date

Date and time that transaction was executed.

Data Type	Cardinality
Datetime	1..1

Response Elements

delete

Envelope of the response

Data Type	Cardinality	Parent Element	Child Element(s)
delete	1..1	None	number_deleted number_not_found response_body response_status errors

number_deleted

Number of deleted objects and containers.

Data Type	Cardinality	Parent Element	Child Element(s)
String	1..1	delete	None

number_not_found

Number of not found objects and containers.

Data Type	Cardinality	Parent Element	Child Element(s)
String	1..1	delete	None

response_body

Response messages.

Data Type	Cardinality	Parent Element	Child Element(s)
String	1..1	delete	None

response_status

Status code of the response.

Data Type	Cardinality	Parent Element	Child Element(s)
String	1..1	delete	None

errors

Error information.

Data Type	Cardinality	Parent Element	Child Element(s)
String	1..1	delete	None

object

Object information

Data Type	Cardinality	Parent Element	Child Element(s)
String	1..1	errors	name status

name

Object name or container name.

Data Type	Cardinality	Parent Element	Child Element(s)
String	1..1	object	None

status

Error status code

Data Type	Cardinality	Parent Element	Child Element(s)
String	1..1	object	None

Example Bulk delete response: HTTP and JSON

Example of Request

```
curl -i $publicURL?bulk-delete -X POST -H "X-Auth-Token:$token" -
H "Accept: application/json" -H "Content-Type:text/plain" --data-binary
@DeleteList.txt
```

Example of Response

```
HTTP/1.1 200 OK
X-Trans-Id: tx893edf2c486e4fe98e128-005786df1d
Date: Thu, 14 Jul 2016 00:38:58 GMT
Content-Type: application/json

{
  "Number Not Found": 0,
  "Response Status": "200 OK",
  "Errors": [],
  "Number Deleted": 4,
  "Response Body": ""
}
```

Example of Error Response

```
HTTP/1.1 200 OK
X-Trans-Id: txa5824c2ada3047d78a5d8-005786f942
Date: Thu, 14 Jul 2016 02:30:28 GMT
Content-Type: application/json

{
  "Number Not Found": 0,
  "Response Status": "400 Bad Request",
  "Errors": [
    ["/container1", "409 Conflict"],
    ["/container2", "409 Conflict"],
  ]
}
```

```
["/container3", "409 Conflict"]
],
"Number Deleted": 0,
"Response Body": ""
}
```

Example Bulk delete response: HTTP and XML

Example of Request

```
curl -i $publicURL?bulk-delete -X POST -H "X-Auth-Token: $token" -H
"Accept:
  application/xml" -H "Content-Type:text/plain" --data-binary
@DeleteList.txt
```

Example of Response

```
HTTP/1.1 200 OK
X-Trans-Id: tx4aac9fc900e442f9a42f3-005783745e
Date: Mon, 11 Jul 2016 10:26:38 GMT
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<delete>
  <number_deleted>4</number_deleted>
  <number_not_found>0</number_not_found>
  <response_body></response_body>
  <response_status>200 OK</response_status>
  <errors></errors>
</delete>
```

Example of Error Response

```
HTTP/1.1 200 OK
X-Trans-Id: tx42fb89d1157b4d7f95c54-005787125b
Date: Thu, 14 Jul 2016 04:17:31 GMT
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<delete>
  <number_deleted>0</number_deleted>
  <number_not_found>0</number_not_found>
  <response_body></response_body>
  <response_status>400 Bad Request</response_status>
  <errors>
    <object>
      <name>/container1</name>
      <status>409 Conflict</status>
    </object>
    <object>
      <name>/container2</name>
      <status>409 Conflict</status>
    </object>
    <object>
      <name>/container3</name>
      <status>409 Conflict</status>
    </object>
  </errors>
</delete>
```



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