



Vling Cloud

API Guideline

V2.1

Updated at 2016.11

[Vling Cloud]

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Examples can be found from here:

- Check version of API <https://youtu.be/T1N-WKH1Jc>
- Authenticate and generate new tokens <https://youtu.be/4i47UuEVy4Y>
- Create instances <https://youtu.be/CTTZHK68EEE>
- Delete an instance <https://youtu.be/mpvzjFM4Zp0>
- Force shut down (cut down power) & Power on instance <https://youtu.be/ORMfYV1mfIA>

1. API Guideline

1.1. API Guideline

Open source API is one of the most important features of Vling Cloud Platform. Since Vling Cloud is developed on top of the core service of OpenStack, Vling Cloud API is also based on the OpenStack API for the sake of interoperability. Moreover, Vling Cloud APIs are completely compatible with original OpenStack APIs.

1.1.1. History of documents

Date	Modified content
2013/06/17	Initial Version
2016/09/23	Version 2
2016/11/18	Version 2.1



1.2. Quick Start

The following instructions show an example of how to use API/CLI to complete a simple task: Create an instance in the network and bind it to a public IP address.

Note

Get user_id and project_id:

Web Dashboard -> Personal settings (hover the cursor to the right-top corner where your email is shown) -> API information

Instruction: login Vling Cloud, after you get into the Dashboard, hover your cursor to the user-email on the right-top corner. In the dropdown menu, click on 'Personal Settings'. In the next page, click on API information, you will see the user_id and project_id.

demo_project vling Dashboard Bill Account demo

Personal Settings

Personal Settings
English | 中文
Logout

Basic Information

Update Password

API Information

User ID: a89c9bbf798c420d8035bd6b01863939
Project ID: 24be2887cf4b4dc88c4443a104268016

Download UOS API manual CLI manual

Please modify OS_PASSWORD to your own password after downloading.

LIVE CHAT

1.2.1. Step 1: Get Token

API Sample

```
$ curl -i -X POST https://identity.vling.io/v3/auth/tokens \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "auth": {
      "scope": {
        "project": {
          "id": "24be2887cf4b4dc88c4443a104268016"
        }
      },
      "identity": {
        "password": {
          "user": {
            "password": "demo@12345",
            "id": "a89c9bbf798c420d8035bd6b01863939"
          }
        }
      },
      "methods": ["password"]
    }
  }'
```

Get Token:

Notice that the Response Header returned by curl command

```
X-Subject-Token: c7305d0778b64ad5830c76db3a8cd364
```

The value we get is the Token. In the following steps, all the API requests need request header 'X-Auth-Token' , where Token is the value we just got.

1.2.2. Step 2: Create an instance

Create an instance named cloud_vm_test with ubuntu12.04 system, computer-4 configuration, and 'MacBookPro' as password. The corresponding cURL command is:

```
$ curl -i -X POST
https://regionone.compute.vling.io/v2/0f1255df40374d02a23e1a6ceeaeefec7/servers \
-H "X-Auth-Project-Id: uos_project" \
-H "User-Agent: python-novaclient" \
-H "Content-Type: application/json" \
-H "Accept: application/json" \
-H "X-Auth-Token: b258ff6f28704c078e300e79a9b25e21" \
-d '{
  "server": {
    "name": "vm-cli",
    "imageRef": "f1bda9e-0844-45de-aca8-72448bb50876",
    "key_name": "MacBookPro",
    "flavorRef": "c40bf599-a979-4404-8332-5a23f75a66cd",
    "max_count": 1,
    "min_count": 1,
    "networks": [
      {
        "uuid": "4600c9b2-ebdb-4cf8-a7d5-6f8321a781c5"
      }
    ]
  }
}'
```

If the console returns '202 Accepted' , then the instance has been successfully created. And the new UUID is {server_uuid} (You will need this value in the last step). Then you can login [Web Console](#) to double-check if it is successful.

1.2.3. Step 3: Create a public IP address

Create a public IP address in the BGP IP pool:

```
$ curl -i -X POST https://regionone.compute.vling.io/v2/0f1255df40374d02a23e1a6ceeaefec7/os-floating-ips \
-H "X-Auth-Project-Id: uos_project" \
-H "User-Agent: python-novaclient" \
-H "Content-Type: application/json" \
-H "Accept: application/json" \
-H "X-Auth-Token: b258ff6f28704c078e300e79a9b25e21" \
-d '{
    "pool": "BGP"
}'
```

If the console returns 200, then the creation is successful. The new IP address is {fip_address}.

1.2.4. Step 4: Bind the IP address to the instance

After we get the UUID{server_uuid} and the public IP address{fip_address}, we can bind the IP address to the instance we just created. The cURL commands are:

```
$ curl -i -X POST
https://regionone.compute.vling.io/v2/0f1255df40374d02a23e1a6ceeaefec7/servers/{server_uuid}/
action \
-H "User-Agent: python-novaclient" \
-H "Content-Type: application/json" \
-H "Accept: application/json" \
-H "X-Auth-Token: b258ff6f28704c078e300e79a9b25e21" \
-d '{
    "addFloatingIp": {
        "address": "{fip_address}"
    }
}'
```

Attention: please replace {project_id}, {server_id}, and {fip_address} with corresponding values.

Mission accomplished! We can now visit the instance via ssh root@{fip_address}. For the default password, please refer to the description in Image.

1.3. Common field

1.3.1. Common request header

Request header	Type	Description
Content-Type	string	Specify the request content-type, usually as application/json
Accept	string	Specify the response content-type, usually as application/json
X-Auth-Token	string	The authorized Token in the request header when requesting Vling Cloud services
X-Subject-Token	string	This request header only applies to the operations on the Token like DELETE/HEAD/GET

1.3.2. Common response header

Response header	Type	Description
Content-Type	string	Indicates the content-type of the response
X-Subject-Token	string	This response header only applies to the operations on the Token

1.3.3. Common HTTP response code

HTTP error index	Reason	Description
200	Normal	Success. Normal response
201	Created	Creation succeed. Normal response
400	BadRequest	Invalid request
401	Unauthorized	Unauthorized Token
403	Forbidden	Forbidden operation
404	ItemNotFound	Item not found
405	BadMethod	Unsupported HTTP method
413	OverLimit	Exceed the request frequency limit
503	ServiceUnavailable	Exceed the request frequency limit

1.4. Authentication service

1.4.1. Outline

Authentication Service provides authentication, user management and service discovery services, etc. It is based on OpenStack Keystone V3 API.

1.4.2. Core Concept

1.4.2.1. User

User account has email, user name and password. It can be used to login to Web control panel.

1.4.2.2. Project

Users can own their project as an owner, or participate in other users' projects.

1.4.2.3. Region

Right now we have Vancouver region, Toronto region will be provided later.

1.4.2.4. Role

Users can have the following roles:

- **Project_Owner:** Project Owners have the privileges to control all **the projects** resource and account CRUD privileges (Create, Read, Update and Delete).
- **Project_Admin:** Project Administrator has **resource** CRUD privilege, but cannot manage accounts.
- **Project_Observer:** Observer of **the** project has read only privilege to project resource.
- **Project_Noaccess:** Does not have any privilege to the project.

1.4.2.5. Service Catalog

Service Catalog is the service list sent by Vling Cloud authentication service. It needs Token and authorization first.

```
{"token":  
  {  
    .....
```

```

        "catalog": [{"endpoints": [{"interface": "admin", "url":
"https://regionone.compute.vling.io/v1.1/24be2887cf4b4dc88c4443a104268016", "region":
"RegionOne"},
                                {"interface": "public", "url":
"https://regionone.compute.vling.io/v1.1/24be2887cf4b4dc88c4443a104268016", "region":
"RegionOne"},
                                {"interface": "internal", "url":
"https://regionone.compute.vling.io/v1.1/24be2887cf4b4dc88c4443a104268016", "region":
"RegionOne"}]},
                    {"type": "compute",
                     "name": "Compute Service"},
                    {"endpoints": [{"interface": "public", "url":
"https://regionone.network.vling.io/services/Cloud", "region": "RegionOne"}]},
                    {"type": "network",
                     "name": "Network Service"},
                    {"endpoints": [{"interface": "admin", "url":
"https://regionone.image.vling.io/v1", "region": "RegionOne"},
                                   {"interface": "public", "url":
"https://regionone.image.vling.io/v1", "region": "RegionOne"},
                                   {"interface": "internal", "url":
"https://regionone.image.vling.io/v1", "region": "RegionOne"}]},
                    {"type": "image",
                     "name": "Image Service"},
                    {"endpoints": [{"interface": "public", "url":
"https://regionone.monitoring.vling.io", "region": "RegionOne"}]},
                    {"type": "metering",
                     "name": "Monitoring Service"},
                    {"endpoints": [{"interface": "admin", "url":
"https://regionone.network.vling.io/v1/24be2887cf4b4dc88c4443a104268016", "region":
"RegionOne"},
                                   {"interface": "public", "url":
"https://regionone.volume.vling.io/v1/24be2887cf4b4dc88c4443a104268016", "region":
"RegionOne"},
                                   {"interface": "internal", "url":
"https://regionone.network.vling.io/v1/24be2887cf4b4dc88c4443a104268016", "region":
"RegionOne"}]},
                    {"type": "volume",
                     "name": "Volume Service"},
                    {"endpoints": [{"interface": "admin", "url":
"https://identity.vling.io/v2.0", "region": "RegionOne"},
                                   {"interface": "public", "url":
"https://identity.vling.io", "region": "RegionOne"},
                                   {"interface": "internal", "url":
"https://identity.vling.io/v2.0", "region": "RegionOne"}]},
                    {"type": "identity",
                     "name": "Identity Service"}],
                .....
            }
}

```

We have services of Compute, Network, Volume, Metering, Alarm, and Billing, etc.

1.4.3. API rules

The following are the API Entrance and API list

- **API Entrance** : <https://identity.vling.io>
- **API list:**

Resource	Operation	HTTP METHOD	URL Path
Versions	Check API Version	GET	/
Tokens	Authenticate and generate new Tokens	POST	/v3/auth/tokens
Projects	List all the projects of a user	GET	/v3/users/{user_id}/projects

1.4.4. Versions

This API returns the states of different versions which are supported by Vling Cloud authentication services. At this **time** Vling Cloud supports V3.0 version.

1.4.4.1. Check version of API

HTTP Method	URL Path	Description
GET	/	Check API version

Parameter of request

None.

Parameter of return

Field name	Type	Description
versions	dict	Detail of API version
id	string	Version number, for example, v2.0, v3.0
status	string	Current version status, stable (stable, recommend), beta (in test)
updated	string	Latest update time of this API

Example of request

```
$ curl https://identity.vling.io/ | python -m json.tool
```

Example of return

```

% Total    % Received % Xferd  Average Speed   Time    Time       Time  Current
 100    759    100    759     0     0    5519     0  ---:---:--  ---:---:--  ---:---:--  5540
{
  "versions": {
    "values": [
      {
        "id": "v3.0",
        "links": [
          {
            "href": "http://identity.vling.io/v3/",
            "rel": "self"
          }
        ],
        "media-types": [
          {
            "base": "application/json",
            "type": "application/vnd.openstack.identity-v3+json"
          },
          {
            "base": "application/xml",
            "type": "application/vnd.openstack.identity-v3+xml"
          }
        ],
        "status": "stable",
        "updated": "2013-03-06T00:00:00Z"
      },
      {
        "id": "v2.0",
        "links": [
          {
            "href": "http://identity.vling.io/v2.0/",
            "rel": "self"
          },
          {
            "href": "http://docs.openstack.org/",
            "rel": "describedby",
            "type": "text/html"
          }
        ],
        "media-types": [
          {
            "base": "application/json",
            "type": "application/vnd.openstack.identity-v2.0+json"
          },
          {
            "base": "application/xml",
            "type": "application/vnd.openstack.identity-v2.0+xml"
          }
        ],
        "status": "stable",
        "updated": "2014-04-17T00:00:00Z"
      }
    ]
  }
}

```

1.4.5. Tokens

1.4.5.1. Authenticate and generate new tokens.

HTTP Methods	URI Path	Description
POST	/v3/auth/tokens	Acquire tokens

Parameter of request

Field name	Type	Description
auth	dict	Identity of authentication and scope of authentication
identity	dict	Identity includes methods and accessKey
scope	dict	Scope of authentication, mean where the token takes effect, Vling Cloud support project level action scope.
methods	array	Authentication Methods, Vling Cloud support two methods, password and accessKey: password authentication needs user name and password. AccessKey needs accessKey and secretKey.
project	dict	Project identification information, Vling Cloud use project ID to identify projects.

Example of request

```
$ curl -i -s \
  -X POST https://identity.vling.io/v3/auth/tokens \
  -H "Content-Type:application/json" \
  -d '{
    "auth": {
      "identity": {
        "methods": [
          "password"
        ],
        "password": {
          "user": {
            "id": "a89c9bbf798c420d8035bd6b01863939",
            "password": "demo@12345"
          }
        }
      },
      "scope": {
        "project": {
          "id": "24be2887cf4b4dc88c4443a104268016"
        }
      }
    }
  }'
```

Returned parameter

Field name	Type	Description
X-Subject-Token	string	A 32 bit string, it is in the header of returned parameter when successfully authenticated. This Token will be used in later request.

Field name	Type	Description
token	dict	Returned token information, it contains information of catalog, project, rule, user and methods, etc.
catalog	array	Service Catalog, it contains all the endpoints information which within users'privilege.
project	dict	Project information, includes project name, project ID and Domain information.
user	dict	User information, it contains user name, user ID and domain information.
rules	array	User information in this rule.
expires_at	timestamp	Token expiration time
issued_at	timestamp	Token creation time
extras	dict	Extra Token information, right now it is empty.
endpoints	array	Cloud service ID, type and endpoint information

Example of return

```
HTTP/1.1 201 Created
Server: ngx_openresty
Date: Tue, 08 Nov 2016 17:36:30 GMT
Content-Type: application/json
Content-Length: 2670
Connection: keep-alive
X-Subject-Token: d6d7eabe396a43ae906a41969b14299a
Vary: X-Auth-Token,Accept-Encoding
```

```
{"token": {"methods": ["password"], "roles": [{"id": "b84124cc05ad49fb897b748ebecafb84",
"name": "project_admin_hidden"}, {"id": "78fb8b103cdf47a8b769ad87f136994b", "name":
"billing_owner"}, {"id": "3b9fa37b23a0408a9bebfd57bae1b49b", "name": "project_owner"}]},
"expires_at": "2016-11-08T18:36:30.692982Z", "project": {"domain": {"id":
"3279a34124564896882609eb2b7ece88", "name": "36310563cc494a06815ef76907c96024"}, "id":
"24be2887cf4b4dc88c4443a104268016", "name": "demo_project"}, "catalog": [{"endpoints":
[{"interface": "admin", "url":
"https://regionone.compute.vling.io/v1.1/24be2887cf4b4dc88c4443a104268016", "region":
"RegionOne"}, {"interface": "public", "url":
"https://regionone.compute.vling.io/v1.1/24be2887cf4b4dc88c4443a104268016", "region":
"RegionOne"}, {"interface": "internal", "url":
"https://regionone.compute.vling.io/v1.1/24be2887cf4b4dc88c4443a104268016", "region":
"RegionOne"}]}, {"type": "compute", "name": "Compute Service"}, {"endpoints": [{"interface":
"public", "url": "https://regionone.network.vling.io/services/Cloud", "region": "RegionOne"}]},
{"type": "network", "name": "Network Service"}, {"endpoints": [{"interface": "admin", "url":
"https://regionone.image.vling.io/v1", "region": "RegionOne"}, {"interface": "public", "url":
"https://regionone.image.vling.io/v1", "region": "RegionOne"}, {"interface": "internal",
"url": "https://regionone.image.vling.io/v1", "region": "RegionOne"}]}, {"type": "image",
"name": "Image Service"}, {"endpoints": [{"interface": "public", "url":
"https://regionone.monitoring.vling.io", "region": "RegionOne"}]}, {"type": "metering", "name":
"Monitoring Service"}, {"endpoints": [{"interface": "admin", "url":
```

```
"https://regionone.network.vling.io/v1/24be2887cf4b4dc88c4443a104268016", "region":
"RegionOne"}, {"interface": "public", "url":
"https://regionone.volume.vling.io/v1/24be2887cf4b4dc88c4443a104268016", "region":
"RegionOne"}, {"interface": "internal", "url":
"https://regionone.network.vling.io/v1/24be2887cf4b4dc88c4443a104268016", "region":
"RegionOne"}], "type": "volume", "name": "Volume Service"}, {"endpoints": [{"interface":
"admin", "url": "https://identity.vling.io/v2.0", "region": "RegionOne"}, {"interface":
"public", "url": "https://identity.vling.io", "region": "RegionOne"}, {"interface":
"internal", "url": "https://identity.vling.io/v2.0", "region": "RegionOne"}], "type":
"identity", "name": "Identity Service"}], "extras": {}, "user": {"domain": {"id":
"3279a34124564896882609eb2b7ece88", "name": "36310563cc494a06815ef76907c96024"}, "id":
"a89c9bbf798c420d8035bd6b01863939", "name": "demo"}, "audit_ids": ["QvUVpFB2RGiUoSWKEgEaMQ"],
"issued_at": "2016-11-08T17:36:30.693023Z"}}
```

1.4.6. Projects

1.4.6.1. List all the projects of a user.

HTTP Methods	URI Path	Description
GET	/v3/users/{user_id}/projects	List all the accessible projects of a user {user_id}

Parameter of request

Parameter name	Type	Description
X-Auth-Token	string	Get valid Token through Vling Cloud.

Example of request

```
$ curl -s \
-X GET https://identity.vling.io/v3/users/a89c9bbf798c420d8035bd6b01863939/projects \
-H "X-Auth-Token: 0d7e77fef296483c8a25951e4a4c1f6a" | python -m json.tool
```

Parameter of return

Parameter name	Type	Description
projects	array	Projects information
enabled	bool	The project is started or not, value is turn or false.
domain_id	string	Project scope id

There are only some important parameters in the table. For all parameter, check the following example of returned parameters.

Example of return

```

{
  "links": {
    "next": null,
    "previous": null,
    "self": "http://identity.vling.io/v3/users/a89c9bbf798c420d8035bd6b01863939/projects"
  },
  "projects": [
    {
      "created_at": "2016-10-31T17:05:35.412209",
      "description": "customer default project",
      "domain_id": "3279a34124564896882609eb2b7ece88",
      "enabled": true,
      "id": "24be2887cf4b4dc88c4443a104268016",
      "links": {
        "self":
"http://identity.vling.io/v3/projects/24be2887cf4b4dc88c4443a104268016"
      },
      "name": "demo_project"
    }
  ]
}

```

1.5. Compute Services

1.5.1. API Rule

The following are the API Entrance and API list

- **API Entrance:**

Region	API Entrance
Vancouver	https://regionone.compute.vling.io

- **API List:**

Resource	Operation	HTTP Methods	URI Path
Instances	Create cloud instance	POST	/v2/{project_id}/servers
	Check the basic information of all cloud instances	GET	/v2/{project_id}/servers
	Check the detailed information of all cloud instances	GET	/v2/{project_id}/servers/detail
	Check designated instance	GET	/v2/{project_id}/servers/{server_id}

Resource	Operation	HTTP Methods	URI Path
	information		
	Change name of instance	PUT	/v2/{project_id}/servers/{server_id}
	Delete instance	DELETE	/v2/{project_id}/servers/{server_id}
	Reboot instance	POST	/v2/{project_id}/servers/{server_id}/action
	Reboot instance	POST	/v2/{project_id}/servers/{server_id}/action
	Soft shut down(sending shut off signal)	POST	/v2/{project_id}/servers/{server_id}/action
	Force shut down(cutting off power)	POST	/v2/{project_id}/servers/{server_id}/action
	Change password of instance	POST	/v2/{project_id}/servers/{server_id}/action
	Create a snapshot of a instance	POST	/v2/{project_id}/servers/{server_id}/action
Key Pairs	Create Key Pairs	POST	/v2/{project_id}/os-keypairs
	Import Key Pairs	POST	/v2/{project_id}/os-keypairs
	List all the Key Pairs	GET	/v2/{project_id}/os-keypairs
	Check all the Key Pairs information	GET	/v2/{project_id}/os-keypairs/{keypair_name}
	Delete Key Pairs	DELETE	/v2/{project_id}/os-keypairs/{keypair_name}
	Attach Key Pairs	POST	/v2/{project_id}/servers/{server_id}/action
	De-Attach Key Pairs	POST	/v2/{project_id}/servers/{server_id}/action
Volumes	Mount Cloud Volumes	POST	/v2/{project_id}/servers/{server_id}/action
	De-mount cloud volumes	POST	/v2/{project_id}/servers/{server_id}/action
Flavors	List all the basic configuration information	GET	/v2/{project_id}/flavors
	List detailed configuration information	GET	/v2/{project_id}/flavors/detail
	List designated configuration information	GET	/v2/{project_id}/flavors/{flavor_id}
VNC Console	Get VNC terminal address	POST	/v2/{project_id}/servers/{server_id}/action
Networks	Attach virtual Network Interface	POST	/v2/{project_id}/servers/{server_id}/os-interface

Resource	Operation	HTTP Methods	URI Path
	Card		
	Detach Virtual Network Interface Card	DELETE	/v2/{project_id}/servers/{server_id}/os-interface/{port_id}
	Join a network	POST	/v2/{project_id}/servers/{server_id}/os-interface
Security Group	Security Group	N/A	N/A
Floating IPs	Floating IP	N/A	N/A

1.5.2. Instances

1.5.2.1. Create instances

HTTP Methods	URI Path	Description
POST	/v2/{project_id}/servers	Create cloud instances

Parameter of request

Field name	Type	Description
flavorRef	uuid	Specification of cloud instances
imageRef	uuid	Image template for cloud instance creation
name	string	Name of cloud instances
max_count	int (optional)	Number of cloud instances created, the default is one
networks	dict	Which network should the instance join to

Example of request

```
$ curl -s \
  -X POST https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: 7ac6d647c5664f9a96167397596a01d2' \
  -d '{
    "server": {
      "flavorRef": "06b954af-791b-4a63-85be-16c25e115b13",
      "imageRef": "be306076-6acb-4e05-9e15-6a8a52fa5d32",
      "max_count": 1,
      "min_count": 1,
      "name": "api-test-1",
```



```

        "networks": [
            {
                "uuid": "f665f66c-1df2-4ed8-bd03-45a8d609818a"
            }
        ]
    }
}' | python -mjson.tool

```

Parameter of return

Field name	Type	Description
id	uuid	ID of instances
links	list	Links of instances, users can get detailed information of cloud instances via these links
adminPass	string	Password of instances
security_groups	dict	Security groups which instances resides

Example of return

HTTP/1.1 202

```

{
  "server": {
    "OS-DCF:diskConfig": "MANUAL",
    "adminPass": "j8PzQtCCp7kL",
    "id": "ac3f14cd-a5cc-47b3-92e9-8e3d1fbff4aa",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/ac3f14cd-
a5cc-47b3-92e9-8e3d1fbff4aa",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/servers/ac3f14cd-a5cc-
47b3-92e9-8e3d1fbff4aa",
        "rel": "bookmark"
      }
    ],
    "security_groups": [
      {
        "name": "default"
      }
    ]
  }
}

```

1.5.2.2. Check the basic information of all instances

HTTP Method	URI path	Description
GET	/v2/{project_id}/servers	Check basic information of all instances

Example of request

```
$ curl -s \  
-X GET https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers \  
-H 'Content-Type: application/json' \  
-H 'Accept: application/json' \  
-H 'X-Auth-Token: 7ac6d647c5664f9a96167397596a01d2' | python -mjson.tool
```

Parameter of return

Field name	Type	Description
id	uuid	ID of instances
name	string	Name of instances
links	list	Links of instances, you can get more detailed information about instances

Example of return

HTTP/1.1 200

```
{  
  "servers": [  
    {  
      "addresses": {  
        "demo": [  
          {  
            "UOS-EXT-IPS:id": "cd84b46c-333e-4224-a21d-8425e6969014",  
            "UOS-EXT-IPS:subnet_id": "49082eb7-2b60-4cee-8553-9ccc06c99b84",  
            "UOS-EXT-IPS:subnet_name": "demo",  
            "UOS-EXT-IPS:subnet_shared": false,  
            "addr": "10.100.100.7",  
            "version": 4  
          }  
        ]  
      },  
      "id": "f5110945-675e-432f-8281-8233c526c3fe",  
      "links": [  
        {  
          "rel": "self",  
          "href": "https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/f5110945-675e-432f-8281-8233c526c3fe"}  
        ]  
    }  
  ]  
}
```

```

    {
      "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/f5110945-
675e-432f-8281-8233c526c3fe",
      "rel": "self"
    },
    {
      "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/servers/f5110945-675e-
432f-8281-8233c526c3fe",
      "rel": "bookmark"
    }
  ],
  "name": "api-test-1"
},
{
  "addresses": {
    "demo": [
      {
        "UOS-EXT-IPS:id": "14e03b31-95b7-4f22-9c57-d62852f6ac5f",
        "UOS-EXT-IPS:subnet_id": "49082eb7-2b60-4cee-8553-9ccc06c99b84",
        "UOS-EXT-IPS:subnet_name": "demo",
        "UOS-EXT-IPS:subnet_shared": false,
        "addr": "10.100.100.2",
        "version": 4
      }
    ]
  },
  "id": "24b3f7bd-b15f-4f63-96e9-e93dbf7d5edb",
  "links": [
    {
      "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/24b3f7bd-
b15f-4f63-96e9-e93dbf7d5edb",
      "rel": "self"
    },
    {
      "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/servers/24b3f7bd-b15f-
4f63-96e9-e93dbf7d5edb",
      "rel": "bookmark"
    }
  ],
  "name": "demo"
}
]
}

```

1.5.2.3. Check detailed information of all instances

HTTP Methods	URI Path	Description
GET	/v2/{project_id}/servers/detail	Check detailed information of all instances

Parameter of request

Example of request

```
$ curl -s \  
-X GET \  
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/detail \  
-H 'Content-Type: application/json' \  
-H 'Accept: application/json' \  
-H 'X-Auth-Token: 7ac6d647c5664f9a96167397596a01d2' | python -mjson.tool
```

Parameter of return

Field name Field Name	TypeType	Description
id	uuid	ID of instances
name	string	Name of instances
links	list	Link of instances, you can get more detailed information about instances with these links
flavor	dict	Specification of cloud instances
image	dict	Image template used by instance
security_groups	dict	Security groups which instances resides in
user_id	uuid	ID of user who created instances
tenant_id	uuid	ID of tenant which instances belong to
addresses	list	IP address of instance
accessIPv4	string	IPv4 address information of instances access
accessIPv6	string	IPv4 address information of instances access
key_name	string	Name of key pair which instance is using
OS-EXT-STS:task_state	string	Status of instance performing a task.
OS-EXT-STS:vm_state	string	Current status of cloud instance
OS-EXT-STS:power_state	string	Current running status of cloud instance
os-extended-volumes:volumes_attached	list	Status of volume attached to the cloud instances.

Example of return

HTTP/1.1 200

```
{
  "servers": [
    {
      "OS-DCF:diskConfig": "MANUAL",
      "OS-EXT-AZ:availability_zone": "nova",
      "OS-EXT-STS:power_state": 1,
      "OS-EXT-STS:task_state": null,
      "OS-EXT-STS:vm_state": "active",
      "OS-SRV-USG:launched_at": "2016-11-08T00:05:10.000000",
      "OS-SRV-USG:terminated_at": null,
      "accessIPv4": "",
      "accessIPv6": "",
      "addresses": {
        "demo": [
          {
            "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:01:cc:b6",
            "OS-EXT-IPS:type": "fixed",
            "UOS-EXT-IPS:id": "cd84b46c-333e-4224-a21d-8425e6969014",
            "UOS-EXT-IPS:subnet_id": "49082eb7-2b60-4cee-8553-9ccc06c99b84",
            "UOS-EXT-IPS:subnet_name": "demo",
            "UOS-EXT-IPS:subnet_shared": false,
            "addr": "10.100.100.7",
            "version": 4
          }
        ]
      },
      "config_drive": "",
      "created": "2016-11-08T00:05:05Z",
      "flavor": {
        "id": "06b954af-791b-4a63-85be-16c25e115b13",
        "links": [
          {
            "href":
https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/06b954af-791b-4a63-85be-16c25e115b13,
            "rel": "bookmark"
          }
        ]
      },
      "name": "micro-2",
      "hostId": "f211fd00eb9033ea494215bc48aaa5fbb7866ee6f1e00f36208444fa",
      "id": "f5110945-675e-432f-8281-8233c526c3fe",
      "image": {
        "id": "be306076-6acb-4e05-9e15-6a8a52fa5d32",
        "links": [
          {
            "href":
https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/images/be306076-6acb-4e05-9e15-6a8a52fa5d32,
            "rel": "bookmark"
          }
        ]
      },
      "name": "Debian 7.6 64bit",
      "key_name": null,
      "links": [
        {
          "href":
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/f5110945-675e-432f-8281-8233c526c3fe,
          "rel": "self"
        }
      ]
    }
  ]
}
```

```

    },
    {
      "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/servers/f5110945-675e-
432f-8281-8233c526c3fe",
      "rel": "bookmark"
    }
  ],
  "metadata": {
    "admin_pass": "nP2zq348SWmD"
  },
  "name": "api-test-1",
  "os-extended-volumes:volumes_attached": [],
  "progress": 0,
  "security_groups": [
    {
      "id": "7f05677c-6266-4810-8eba-7eb607414215",
      "name": "default",
      "port_id": "cd84b46c-333e-4224-a21d-8425e6969014"
    }
  ],
  "status": "ACTIVE",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016",
  "updated": "2016-11-08T00:05:10Z",
  "user_id": "a89c9bbf798c420d8035bd6b01863939"
},
{
  "OS-DCF:diskConfig": "MANUAL",
  "OS-EXT-AZ:availability_zone": "nova",
  "OS-EXT-STS:power_state": 1,
  "OS-EXT-STS:task_state": null,
  "OS-EXT-STS:vm_state": "active",
  "OS-SRV-USG:launched_at": "2016-10-31T17:07:36.000000",
  "OS-SRV-USG:terminated_at": null,
  "accessIPv4": "",
  "accessIPv6": "",
  "addresses": {
    "demo": [
      {
        "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:3c:d8:ec",
        "OS-EXT-IPS:type": "fixed",
        "UOS-EXT-IPS:id": "14e03b31-95b7-4f22-9c57-d62852f6ac5f",
        "UOS-EXT-IPS:subnet_id": "49082eb7-2b60-4cee-8553-9ccc06c99b84",
        "UOS-EXT-IPS:subnet_name": "demo",
        "UOS-EXT-IPS:subnet_shared": false,
        "addr": "10.100.100.2",
        "version": 4
      }
    ]
  },
  "config_drive": "",
  "created": "2016-10-31T17:07:32Z",
  "flavor": {
    "id": "c25c8f8e-d1e8-4420-ba23-3db0e317c35e",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/c25c8f8e-d1e8-
4420-ba23-3db0e317c35e",
        "rel": "bookmark"
      }
    ]
  },
  "name": "micro-1"
}

```

```

    },
    "hostId": "f211fd00eb9033ea494215bc48aaa5fbb7866ee6f1e00f36208444fa",
    "id": "24b3f7bd-b15f-4f63-96e9-e93dbf7d5edb",
    "image": {
      "id": "f0765337-aafd-44cd-915d-8642270fce92",
      "links": [
        {
          "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/images/f0765337-aafd-
44cd-915d-8642270fce92",
          "rel": "bookmark"
        }
      ],
      "name": "CentOS 7.2 64bit"
    },
    "key_name": null,
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/24b3f7bd-
b15f-4f63-96e9-e93dbf7d5edb",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/servers/24b3f7bd-b15f-
4f63-96e9-e93dbf7d5edb",
        "rel": "bookmark"
      }
    ],
    "metadata": {
      "admin_pass": "Demo@12345"
    },
    "name": "demo",
    "os-extended-volumes:volumes_attached": [
      {
        "device_name": "/dev/vdc",
        "id": "e85d96d6-96e6-4638-b18f-24b83647a454"
      },
      {
        "device_name": "/dev/vdd",
        "id": "6a24325d-4a5a-46e5-aff6-ebbc14207ab3"
      }
    ],
    "progress": 0,
    "security_groups": [
      {
        "id": "7f05677c-6266-4810-8eba-7eb607414215",
        "name": "default",
        "port_id": "14e03b31-95b7-4f22-9c57-d62852f6ac5f"
      }
    ],
    "status": "ACTIVE",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "updated": "2016-11-07T17:43:23Z",
    "user_id": "a89c9bbf798c420d8035bd6b01863939"
  }
]
}

```

1.5.2.4. Get information of designated instance

HTTP Method	URI Path	Description
GET	/v2/{project_id}/servers/{server_id}	Get information of designated instance

Parameter of request

Example of request

```
$ curl -s \
  -X GET
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/f5110945-675e-432f-8281-8233c526c3fe \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: 7ac6d647c5664f9a96167397596a01d2' | python -mjson.tool
```

Parameter of return

Field name	Type	Description
id	uuid	ID of instances
name	string	Name of instances
links	list	Links of instances, you can get more detailed information about instances
flavor	dict	Specification of cloud instances
image	dict	Information of image template used by instances
security_groups	dict	Security group joined by instances
user_id	uuid	ID of the user who created the cloud instance
tenant_id	uuid	ID of tenant which instances belong to
addresses	list	IP information of instances
accessIPv4	string	Access IPv4 information of could instances
accessIPv6	string	Access IPv6 information of instances
key_name	string	Key name of which instance is using
OS-EXT-STS:task_state	string	Status of instance performing a task.

Field name	Type	Description
OS-EXT-STS:vm_state	string	Current status of cloud instance
OS-EXT-STS:power_state	string	Current running status of cloud instance
os-extended-volumes:volumes_attached	list	Status of volume attached to the cloud instances.

Example of return

HTTP/1.1 200

```
{
  "server": {
    "OS-DCF:diskConfig": "MANUAL",
    "OS-EXT-AZ:availability_zone": "nova",
    "OS-EXT-STS:power_state": 1,
    "OS-EXT-STS:task_state": null,
    "OS-EXT-STS:vm_state": "active",
    "OS-SRV-USG:launched_at": "2016-11-08T00:05:10.000000",
    "OS-SRV-USG:terminated_at": null,
    "accessIPv4": "",
    "accessIPv6": "",
    "addresses": {
      "demo": [
        {
          "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:01:cc:b6",
          "OS-EXT-IPS:type": "fixed",
          "UOS-EXT-IPS:id": "cd84b46c-333e-4224-a21d-8425e6969014",
          "UOS-EXT-IPS:subnet_id": "49082eb7-2b60-4cee-8553-9ccc06c99b84",
          "UOS-EXT-IPS:subnet_name": "demo",
          "UOS-EXT-IPS:subnet_shared": false,
          "addr": "10.100.100.7",
          "version": 4
        }
      ]
    },
    "config_drive": "",
    "created": "2016-11-08T00:05:05Z",
    "flavor": {
      "id": "06b954af-791b-4a63-85be-16c25e115b13",
      "links": [
        {
          "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/06b954af-791b-4a63-85be-16c25e115b13",
          "rel": "bookmark"
        }
      ]
    },
    "name": "micro-2"
  },
  "hostId": "f211fd00eb9033ea494215bc48aaa5fbb7866ee6f1e00f36208444fa",
  "id": "f5110945-675e-432f-8281-8233c526c3fe",
  "image": {
    "id": "be306076-6acb-4e05-9e15-6a8a52fa5d32",
    "links": [
      {

```

```

        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/images/be306076-6acb-
4e05-9e15-6a8a52fa5d32",
        "rel": "bookmark"
    }
  ],
  "name": "Debian 7.6 64bit"
},
"key_name": null,
"links": [
  {
    "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/f5110945-
675e-432f-8281-8233c526c3fe",
    "rel": "self"
  },
  {
    "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/servers/f5110945-675e-
432f-8281-8233c526c3fe",
    "rel": "bookmark"
  }
],
"metadata": {
  "admin_pass": "nP2zq348SWmD"
},
"name": "api-test-1",
"os-extended-volumes:volumes_attached": [],
"progress": 0,
"security_groups": [
  {
    "id": "7f05677c-6266-4810-8eba-7eb607414215",
    "name": "default",
    "port_id": "cd84b46c-333e-4224-a21d-8425e6969014"
  }
],
"status": "ACTIVE",
"tenant_id": "24be2887cf4b4dc88c4443a104268016",
"updated": "2016-11-08T00:05:10Z",
"user_id": "a89c9bbf798c420d8035bd6b01863939"
}
}

```

1.5.2.5. Change name of instance

HTTP Method	URI Path	Description
PUT	/v2/{project_id}/servers/{server_id}	Change name of instance

Parameter of request

Example of request

```
$ curl -s \
```

```

-X PUT
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/f5110945-675e-432f-8281-8233c526c3fe \
-H 'Content-Type: application/json' \
-H 'Accept: application/json' \
-H 'X-Auth-Token: 7ac6d647c5664f9a96167397596a01d2' \
-d '{
    "server": {
        "name": "api-test-1"
    }
}' | python -mjson.tool

```

Example of return

HTTP/1.1 200

```

{
  "server": {
    "OS-DCF:diskConfig": "MANUAL",
    "accessIPv4": "",
    "accessIPv6": "",
    "addresses": {
      "demo": [
        {
          "UOS-EXT-IPS:id": "cd84b46c-333e-4224-a21d-8425e6969014",
          "UOS-EXT-IPS:subnet_id": "49082eb7-2b60-4cee-8553-9ccc06c99b84",
          "UOS-EXT-IPS:subnet_name": "demo",
          "UOS-EXT-IPS:subnet_shared": false,
          "addr": "10.100.100.7",
          "version": 4
        }
      ]
    },
    "created": "2016-11-08T00:05:05Z",
    "flavor": {
      "id": "06b954af-791b-4a63-85be-16c25e115b13",
      "links": [
        {
          "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/06b954af-791b-4a63-85be-16c25e115b13",
          "rel": "bookmark"
        }
      ]
    },
    "hostId": "f211fd00eb9033ea494215bc48aaa5fbb7866ee6f1e00f36208444fa",
    "id": "f5110945-675e-432f-8281-8233c526c3fe",
    "image": {
      "id": "be306076-6acb-4e05-9e15-6a8a52fa5d32",
      "links": [
        {
          "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/images/be306076-6acb-4e05-9e15-6a8a52fa5d32",
          "rel": "bookmark"
        }
      ]
    }
  },
},

```

```

    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/f5110945-
675e-432f-8281-8233c526c3fe",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/servers/f5110945-675e-
432f-8281-8233c526c3fe",
        "rel": "bookmark"
      }
    ],
    "metadata": {
      "admin_pass": "nP2zq348SWmD"
    },
    "name": "api-test-1",
    "progress": 0,
    "status": "ACTIVE",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "updated": "2016-11-08T00:50:12Z",
    "user_id": "a89c9bbf798c420d8035bd6b01863939"
  }
}

```

1.5.2.6. Delete an instance

HTTP Method	URI Path	Description
DELETE	/v2/{project_id}/servers/{server_id}	Delete a instance

Parameter of request

Example of request

```

$ curl -s \
  -X DELETE
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/ac3f14cd-a5cc-
47b3-92e9-8e3d1fbff4aa \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: 123c305aabaf4b3fa0111a109094591e'

```

Parameter of return

HTTP/1.1 202

1.5.2.6.1. Reboot instance

HTTP Method	URI Path	Description
POST	/v2/{project_id}/servers/{server_id}/action	Reboot instance

Parameter of request

Example of request

```
$ curl -s \
  -X POST
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/829f445f-981e-4cf1-b9bd-75c5731b0805/action \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: 123c305aabaf4b3fa0111a109094591e' \
  -d '{
    "reboot": {
      "type": "SOFT"
    }
  }'
```

Parameter of return

Example of return

HTTP/1.1 202

1.5.2.7. Power on instance

HTTP Method	URI Path	Description
POST	/v2/{project_id}/servers/{server_id}/action	Power on instance

Parameter of request

Example of request

```
$ curl -s \
  -X POST
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/829f445f-981e-4cf1-b9bd-75c5731b0805/action \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: 123c305aabaf4b3fa0111a109094591e' \
  -d '{
```

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

Parameter of return

Example of return

HTTP/1.1 202

1.5.2.8. Soft Shut down (Sending shut down signal)

HTTP Method	URI Path	Description
POST	/v2/{project_id}/servers/{server_id}/action	Send a shut down signal

Parameter of request

Example of request

```
$ curl -s \
  -X POST
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/829f445f-981e-
4cfl-b9bd-75c5731b0805/action \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: {token_id}' \
  -d '{
    "os-shutdown": null
  }'
```

Parameter of return

Example of return

HTTP/1.1 202

1.5.2.9. Force shut down (cut down power)

HTTP Method	URI Path	Description
POST	/v2/{project_id}/servers/{server_id}/action	Force shut down (cut down power)

Parameter of request

Example of request

```
$ curl -s \  
      -X POST  
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/829f445f-981e-  
4cf1-b9bd-75c5731b0805/action \  
-H 'Content-Type: application/json' \  
-H 'Accept: application/json' \  
-H 'X-Auth-Token: 87376935fa22407fbb71815b47b6c247' \  
-d '{  
    "os-stop": null  
}'
```

Parameter of return

Example of return

HTTP/1.1 202

1.5.2.10. Change instance password

HTTP Method	URI Path	Description
POST	/v2/{project_id}/servers/{server_id}/action	Change instance password

Parameter of request

Example of request

```
$ curl -s \  
      -X POST  
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/829f445f-981e-  
4cf1-b9bd-75c5731b0805/action \  
-H 'Content-Type: application/json' \  
-H 'Accept: application/json' \  
-H 'X-Auth-Token: 87376935fa22407fbb71815b47b6c247' \  
-d '{  
    "changePassword": {  
        "adminPass": "newpass"  
    }  
}'
```

Parameter of return

Example of return

HTTP/1.1 202

1.5.2.11. Create snapshot of instance

HTTP Method	URI Path	Description
POST	/v2/{project_id}/servers/{server_id}/action	Create snapshot of instance

Parameter of request

Example of request

```
$ curl -s \  
-X POST \  
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/829f445f-981e-4cf1-b9bd-75c5731b0805/action \  
-H 'Content-Type: application/json' \  
-H 'Accept: application/json' \  
-H 'X-Auth-Token: 87376935fa22407fbb71815b47b6c247' \  
-d '{  
    "createImage": {  
        "name": "foo-iamge",  
        "metadata": {  
            "myvar": "foobar"  
        }  
    }  
}'
```

Parameter of return

Example of return

HTTP/1.1 202

1.5.3. Key Pairs

1.5.3.1. Create Key Pairs

HTTP Method	URI Path	Description
POST	/v2/{project_id}/os-keypairs	Create key pairs

Parameter of request

Field name	Type	Description
name	string	Name of key pairs

Example of request

```
$ curl -s \
  -X POST https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/os-
  keypairs \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: 87376935fa22407fbb71815b47b6c247' \
  -d '{
    "keypair": {
      "name": "key2"
    }
  }'
```

Parameter of return

Field name	Type	Description
user_id	uuid	User ID which created key pairs
name	string	Name of key pairs
public_key	string	Public key of the key pairs
private_key	string	Private key of the key pairs
fingerprint	string	Fingerprint information of the key pairs

Example of return

HTTP/1.1 200

```
{
  "keypair": {
    "fingerprint": "ad:a7:ac:39:95:01:1a:2f:d2:c7:c3:a8:6a:d7:4b:0f",
    "name": "key2",
    "private_key": "-----BEGIN RSA PRIVATE KEY-----
\nMIIEoQIBAAKCAQEAOQ8Kmf14by4uI8qqfWPsbmXrXLBHVVD6niu1p/833AKOPM/\na+IzR49H3pV7xswEhiqXyvnpK
iAeT/Bgilsh22ZK/27B4XVPNMuUqal7wdef8AcL\nMS1ti2eiQpdH9Unf50HDE9q6EggFl3FW2usrjDsteogJ83AN3uOF
Yua4xp2jXTAv\nrD2vxqCji3FvFYGWcg/NgiU5nH5PdywmtaTT6ufzkWCyCMLewG93Z+f+l70N5uGR\nSao6jdLPdUo+/
7mIB39F6CJf/vOblxwOuWziPXDk0oZ9QF*xw10qnkopqPHLR13HB\nneK8WJmI8GLDhooyLLDNvONq6En9FhRESiFviTQIB
IwKCAQAbnC2z/5D9HdwGir4k\nh8Io+0L2Pbq0kkYoMfIWKg4XrM6Na4c3ENWXPSJDahU4Bbeh+KxOrn++FCJ0GpQ0\n+
a4IWq3FY3GxnxTkeqvFUEEZ6nMwdjxu1JZvq121A/21BvmVW7sKt8ggdJM+iHVK\nGa+xo76nSoVc7qNKx+r7Avsau6p9
bzdi/I8o9G5L7Sc8tklrepOtYVORiYJj4cNH\nnQG0lt0lpJVmPZJ4iEXDSbJBYjC+O31U5ihs9KkZAr/jtM7bqR0U6w80
3/3gyHHeH\nbGCCNe1T+qi7jAAYffjMeE8QpRKk2O4ZnaeP/s3UAJRkp7KobRpwjofajo4kHckh\nnCPNLAoGBAM6wWBOJ
oPMdPTSmCKBHCyni6SaebMJih+WkFGGokD1fK1yBmNUdIuDM\nnFKXnqTFeVOI9g6oIIotnw3iB9EhvJkhLepQuR1MOxWW
FZLz1f+q+BRjA5awcH6ZS\nyLuLnjlmacCegtBy3lqmYClh7ROPlwXjwvs/enmq1pLNTfc8b7LSZAoGBAMd7z1kL\nn23mP
0ZYqgWnsTxWcMPQbALqC/vE3HXyyHPvvuhV/wlJ8f7jYSmoKgtfyi8Dn96DH\nnosuBQ2fPU3UofzS6ukiNumyUMU5Cu+3
pB26a2+Onv/jeNsm1rJCzg7T1WmgfzDfW\nnVhsbtDLzaJwcTiq6TYW2p7Ih8FUJkC4ruffVAoGARTlgBrLYGNbTJ/5pW4
```

```

YsDMLT\nmDZRLKsnR2t0s7vZrqrJYYuE21pyW7OvTtMVCAMVyeK0dM+WQhTyj7eG9EOArrrK\n8PnskYFoQBB6T2R9Oop
K4+pdX5SdIxURn2MRrqag96TQCdiLbVizFwWxODGEXcc\n2Y4nr468IDnh/d2wPesCgYBg5F1lw+5CW8wy/rPi/cADLp
tvQFDPrZX55H6vOmB\nrvP70FeOdvwlNdsATg0JzZRWYgqP67yuuyC9ZLOCFsK+5xPIESbI2hn10VWTJ01\nuO51480
kw7Q2FmnCoFXqLgdXJWMxEFW1ZTpEohzeHGB7J0o5odxsduJyclv5Ky7t\nzWKBgQC1LtG9a3sKIbqara+H+odkQxNQO5
GwJQbnxrAIQ22RriXeR+DJQZrCVGI1\nR3JWGiTU49bG+/AkkWBe7ub0LWnduUaFe1H1Cp7/MylKwMjEBR8xweqHtdIPE
nEc\nSQ4Z9Th2gjMZULmU2NEI5H/hKaZhiW26Ugl2jezewPJWNr9KRg==\n-----END RSA PRIVATE KEY-----\n",
    "public_key": "ssh-rsa
AAAAB3NzaC1yc2EAAAABIAAAQEAoQ8Kmf14by4uI8qqfWPsmbmxRxLBHVVD6niulp/833AKOPM/a+IzR49H3pV7xswEh
iqXyvnPKiAeT/Bgilsh22ZK/27B4XVPNMuUqal7wdef8AcLMS1ti2eiQpdH9Unf50HDE9q6EggF13FW2usrjDsteogJ83
AN3uOFYua4xp2jXTAvrD2vxqCji3FvFYGWcg/NgiU5nH5PdywmtaTT6ufzkWCyCMLewG93Z+f+170N5uGRSao6jdLPdUo
+/7mIB39F6CJf/vOblxwOuWziPXdk0oZ9QFfxw10qnkopqPHLR13HBeK8WJmI8GLDhooyLLDNvONq6En9FhRESiFvITQ==
Generated by Nova\n",
    "user_id": "a89c9bbf798c420d8035bd6b01863939"
  }
}

```

1.5.3.2. Import key pairs

HTTP Method	URI Path	Description
POST	/v2/{project_id}/os-keypairs	Import key pairs

Parameter of request

Field name	Type	Description
name	string	Name of key pairs
public_key	string	Public key for creating the key pairs

Example of request

```

$ curl -s \
  -X POST https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/os-
keypairs \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: dda8461d56224bc3b84a8926113007b8' \
  -d '{
    "keypair": {
      "name": "key3",
      "public_key": "ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAQGDx8nkQv/zgGgB4rMYmIf+6A4l6Rr+o/6lHBQdW5aYd44bd8JttDCE/F/pNRr0lR
E+PiqSPO8nDPHw0010JeMH9gYggnFlyY3/OcJ02RhIPyYxYpv9FhY+2YiUkpwFOcLImyrxESYXpD/0d3ac30bNH6Sw9JD
9UZHycpSxsIbECHw== Generated by Nova"
    }
  }'

```

Parameter of return

Field name	Type	Description
------------	------	-------------

Field name	Type	Description
user_id	uuid	User ID of who created the key pairs
name	string	Name of key pairs
public_key	string	Public key of the key pairs
private_key	string	Private key of the key pairs
fingerprint	string	Fingerprint information of the key pairs

Example of return

1.5.3.3. List all key pairs

HTTP Method	URI Path	Description
GET	/v2/{project_id}/os-keypairs	List all key pairs

Parameter of request

Example of request

```
$ curl -s \
  -X GET https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/os-
  keypairs \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: dda8461d56224bc3b84a8926113007b8' |python -m json.tool
```

Parameter of return

Field name	Type	Description
name	string	Name of key pairs
public_key	string	Public key of the key pairs
fingerprint	string	Fingerprint information of the key pairs

Example of return

HTTP/1.1 200

```

{
  "keypairs": [
    {
      "keypair": {
        "fingerprint": "ad:a7:ac:39:95:01:1a:2f:d2:c7:c3:a8:6a:d7:4b:0f",
        "name": "key2",
        "public_key": "ssh-rsa
AAAAB3NzaC1yc2EAAAABIwAAAQEAoQ8Kmf14by4uI8qqfWPsbmXRxLBHVVD6niu1p/833AKOPM/a+IzR49H3pV7xswEh
iqXyvnPKiAeT/Bgilsh22ZK/27B4XVPNMuUqal7wdef8AcLMS1ti2eiQpdH9Unf50HDE9q6EggF13FW2usrjDsteogJ83
AN3uOFYua4xp2jXTAvrD2vxqCji3FvFYGWcg/NgiU5nH5PdywmtaTT6ufzkWCyCMLewG93Z+f+170N5uGRSao6jdLPdUo
+/7mIB39F6CJf/vOblxwOuWziPXDk0oZ9QFxl0qnkopqPHLR13HBeK8WJmI8GLDhooyLLDNvONq6En9FhRESiFviTQ==
Generated by Nova\n"
      },
    },
    {
      "keypair": {
        "fingerprint": "1e:2c:9b:56:79:4b:45:77:f9:ca:7a:98:2c:b0:d5:3c",
        "name": "key3",
        "public_key": "ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAQGDx8nkQv/zgGgB4rMYmIf+6A4l6Rr+o/6lHBQdW5aYd44bd8JttDCE/F/pNRr01R
E+PiqSPO8nDPHw0010JeMH9gYgnnFlyY3/OcJ02RhIPyyxYpv9FhY+2YiUkpwFOcLImyrxEsYXpD/0d3ac30bNH6Sw9JD
9UZHYcpSxsIbEChw== Generated by Nova"
      }
    }
  ]
}

```

1.5.3.4. Check detailed information of key pairs

HTTP Method	URI Path	Description
GET	/v2/{project_id}/os-keypairs/{key_name}	Check detailed information of key pairs

Parameter of request

Example of request

```

$ curl -s \
  -X GET https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/os-
keypairs/key3 \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: dda8461d56224bc3b84a8926113007b8' |python -m json.tool

```

Parameter of return

Field name	Type	Description
id	int	ID of key pairs

Field name	Type	Description
user_id	uuid	User ID which created key pairs
name	string	Name of key pairs
public_key	string	Public key of the key pairs
private_key	string	Private key of the key pairs
fingerprint	string	Fingerprint information of the key pairs
created_at	datetime	Time when the key pairs are created
deleted	bool	Check if the key pairs are deleted or not

Example of return

```
HTTP/1.1 200
{
  "keypair": {
    "created_at": "2016-11-09T19:34:54.000000",
    "deleted": false,
    "deleted_at": null,
    "fingerprint": "1e:2c:9b:56:79:4b:45:77:f9:ca:7a:98:2c:b0:d5:3c",
    "id": 33,
    "name": "key3",
    "public_key": "ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAQGDx8nkQv/zgGgB4rMYmIf+6A4l6Rr+o/6lHBQdW5aYd44bd8JttDCE/F/pNRr01R
E+PiqSPO8nDPHw0010JeMH9gYgmnFlyY3/OcJ02RhIPyyxYpv9FhY+2YiUkpwFOcLImyrxEsYXpD/0d3ac30bNH6Sw9JD
9UZHYcpSxsIbECHw== Generated by Nova",
    "updated_at": null,
    "user_id": "a89c9bbf798c420d8035bd6b01863939"
  }
}
```

1.5.3.5. Delete key pairs

HTTP Method	URI Path	Description
DELETE	/v2/{project_id}/os-keypairs/{key_name}	Delete key pairs

Parameter of request

Example of request

```
$ curl -s \
-X DELETE https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/os-
keypairs/key3 \
-H 'Content-Type: application/json' \
-H 'Accept: application/json' \
-H 'X-Auth-Token: dda8461d56224bc3b84a8926113007b8'
```

Parameter of return

Example of return

HTTP/1.1 200

1.5.3.6. Attach Key Pairs

HTTP Method	URI Path	Description
POST	/v2/{project_id}/servers/{server_id}/action	Attach Key Pairs

Parameter of request

Field name	Type	Description
key_names	list	Name of the key pairs which will be mounted

Example of request

```
curl -s \  
-X POST \  
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/24b3f7bd-b15f-4f63-96e9-e93dbf7d5edb/action \  
-H 'Content-Type: application/json' \  
-H 'Accept: application/json' \  
-H 'X-Auth-Token: f7cf324c2d71472491f93b7015111a73' \  
-d '{  
  "attachKeypairs": {  
    "key_names": ["key2", "key3"]  
  }  
'
```

Parameter of return

Example of return

HTTP/1.1 202

1.5.3.7. Detach the key pairs

HTTP Method	URI Path	Description
POST	/v2/{project_id}/servers/{server_id}/action	Detach the key pairs

Parameter of request

Field name	Type	Description
key_names	list	Name of the key pairs which need to be de-mounted

Example of request

```
$ curl -s \
-X POST
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/24b3f7bd-b15f-
4f63-96e9-e93dbf7d5edb/action \
-H 'Content-Type: application/json' \
-H 'Accept: application/json' \
-H 'X-Auth-Token: f7cf324c2d71472491f93b7015111a73' \
-d '{
  "detachKeypairs": {
    "key_names": [
      "key2",
      "key3"
    ]
  }
}'
```

Parameter of return

Example of return

HTTP/1.1 202

1.5.4. Volumes

1.5.4.1. Mount volumes

HTTP Method	URI Path	Description
POST	/v2/{project_id}/servers/{server_id}/os-volume_attachments	Mount volumes

Parameter of request

Field name	Type	Description
------------	------	-------------

Field name	Type	Description
volumeld	uuid	Volume UUID of which will be mounted

Example of request

```
$ curl -s \
-X POST
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/24b3f7bd-b15f-
4f63-96e9-e93dbf7d5edb/os-volume_attachments \
-H 'Content-Type: application/json' \
-H 'Accept: application/json' \
-H 'X-Auth-Token: f7cf324c2d71472491f93b7015111a73' \
-d '{
  "volumeAttachment": {
    "volumeId": "2ce882be-2ab1-4622-8fee-83620f76c508"
  }
}'
```

Parameter of return

Field name	Type	Description
id	uuid	UUID of mounted volume information
volumeld	uuid	UUID of volume which will be mounted
serverId	uuid	UUID of instance of which the volume attached to
device	string	Path of volume mounted to instance

Example of return

```
HTTP/1.1 202
{
  "volumeAttachment": {
    "device": "/dev/vdd",
    "id": "a26887c6-c47b-4654-abb5-dfadf7d3f803",
    "serverId": "0c92f3f6-c253-4c9b-bd43-e880a8d2eb0a",
    "volumeId": "a26887c6-c47b-4654-abb5-dfadf7d3f803"
  }
}
```

1.5.4.2. Detach volume

HTTP Method	URI Path	Description
DELETE	/v2/{project_id}/servers/{server_id}/os-volume_attachments/{volume_id}	Detach volume

Parameter of request

Example of request

```
$ curl -s \  
-X DELETE  
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/24b3f7bd-b15f-  
4f63-96e9-e93dbf7d5edb/os-volume_attachments/de1287a4-02b9-425f-ac95-4945a553252a \  
-H 'Content-Type: application/json' \  
-H 'Accept: application/json' \  
-H 'X-Auth-Token: 2a669892e29c4c1784465e0cf6369a8e'
```

Parameter of return

Example of return

HTTP/1.1 202

1.5.5. Flavors

1.5.5.1. List basic information of all flavors

HTTP Method	URI Path	Description
GET	/v2/{project_id}/flavors	List basic information of all flavors

Parameter of request

Example of request

```
$ curl -s \  
-X GET https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors \  
-H 'Content-Type: application/json' \  
-H 'Accept: application/json' \  
-H 'X-Auth-Token: 2a669892e29c4c1784465e0cf6369a8e' | python -m json.tool
```

Parameter of return

Field name	Type	Description
id	uuid	ID of a flavor
links	dict	Link information of flavor, you can get more detailed information through this link.

Field name	Type	Description
name	string	Name of flavors

Example of return 1

```

HTTP/1.1 200
{
  "flavors": [
    {
      "id": "06b954af-791b-4a63-85be-16c25e115b13",
      "links": [
        {
          "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/06b954af-
791b-4a63-85be-16c25e115b13",
          "rel": "self"
        },
        {
          "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/06b954af-791b-
4a63-85be-16c25e115b13",
          "rel": "bookmark"
        }
      ],
      "name": "micro-2"
    },
    {
      "id": "0bcb11fe-14ce-49fa-8396-cf957ad20d46",
      "links": [
        {
          "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/0bcb11fe-
14ce-49fa-8396-cf957ad20d46",
          "rel": "self"
        },
        {
          "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/0bcb11fe-14ce-
49fa-8396-cf957ad20d46",
          "rel": "bookmark"
        }
      ],
      "name": "super-60"
    },
    {
      "id": "0d11cfd5-e0fb-4c8f-acd6-93dfddba6b87",
      "links": [
        {
          "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/0d11cfd5-
e0fb-4c8f-acd6-93dfddba6b87",
          "rel": "self"
        },
        {
          "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/0d11cfd5-e0fb-
4c8f-acd6-93dfddba6b87",
          "rel": "bookmark"
        }
      ],
    }
  ],
}

```

```

    "name": "standard-4"
  },
  {
    "id": "11b8876e-486e-4563-9aae-d1911ac0421b",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/11b8876e-
486e-4563-9aae-d1911ac0421b",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/11b8876e-486e-
4563-9aae-d1911ac0421b",
        "rel": "bookmark"
      }
    ],
    "name": "standard-2"
  },
  {
    "id": "13198b8f-a6f0-49d8-a365-c6e24b67b92a",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/13198b8f-
a6f0-49d8-a365-c6e24b67b92a",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/13198b8f-a6f0-
49d8-a365-c6e24b67b92a",
        "rel": "bookmark"
      }
    ],
    "name": "memory-4"
  },
  {
    "id": "152238e4-e40d-4959-b38b-13f63e7db698",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/152238e4-
e40d-4959-b38b-13f63e7db698",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/152238e4-e40d-
4959-b38b-13f63e7db698",
        "rel": "bookmark"
      }
    ],
    "name": "super-20"
  },
  {
    "id": "3d01565d-3603-4968-a090-c3a23b0713e0",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/3d01565d-
3603-4968-a090-c3a23b0713e0",

```

```

        "rel": "self"
    },
    {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/3d01565d-3603-4968-a090-c3a23b0713e0",
        "rel": "bookmark"
    }
],
"name": "compute-2"
},
{
    "id": "3d651427-084b-4567-a564-4d7feb823116",
    "links": [
        {
            "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/3d651427-084b-4567-a564-4d7feb823116",
            "rel": "self"
        },
        {
            "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/3d651427-084b-4567-a564-4d7feb823116",
            "rel": "bookmark"
        }
    ],
    "name": "compute-4"
},
{
    "id": "4497a757-a4d9-4569-bad1-07b7c49226e1",
    "links": [
        {
            "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/4497a757-a4d9-4569-bad1-07b7c49226e1",
            "rel": "self"
        },
        {
            "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/4497a757-a4d9-4569-bad1-07b7c49226e1",
            "rel": "bookmark"
        }
    ],
    "name": "standard-1"
},
{
    "id": "5409492b-4aa6-4b10-b387-6cdd92203c32",
    "links": [
        {
            "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/5409492b-4aa6-4b10-b387-6cdd92203c32",
            "rel": "self"
        },
        {
            "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/5409492b-4aa6-4b10-b387-6cdd92203c32",
            "rel": "bookmark"
        }
    ]
},
],

```

```

    "name": "super-120"
  },
  {
    "id": "55caeea6-c5b3-41c0-aab5-2c084a02b36e",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/55caeea6-
c5b3-41c0-aab5-2c084a02b36e",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/55caeea6-c5b3-
41c0-aab5-2c084a02b36e",
        "rel": "bookmark"
      }
    ],
    "name": "standard-8"
  },
  {
    "id": "57d9d43f-5916-4946-9266-65e154ee834d",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/57d9d43f-
5916-4946-9266-65e154ee834d",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/57d9d43f-5916-
4946-9266-65e154ee834d",
        "rel": "bookmark"
      }
    ],
    "name": "memory-12"
  },
  {
    "id": "862e5d95-f1f8-4824-8b61-04b411076ff4",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/862e5d95-
f1f8-4824-8b61-04b411076ff4",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/862e5d95-f1f8-
4824-8b61-04b411076ff4",
        "rel": "bookmark"
      }
    ],
    "name": "compute-12"
  },
  {
    "id": "a18867b7-5f20-4ecd-9ede-9c179e0996b2",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/a18867b7-
5f20-4ecd-9ede-9c179e0996b2",

```

```

        "rel": "self"
    },
    {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/a18867b7-5f20-
4ecd-9ede-9c179e0996b2",
        "rel": "bookmark"
    }
],
"name": "memory-2"
},
{
    "id": "c25c8fbe-d1e8-4420-ba23-3db0e317c35e",
    "links": [
        {
            "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/c25c8fbe-
d1e8-4420-ba23-3db0e317c35e",
            "rel": "self"
        },
        {
            "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/c25c8fbe-d1e8-
4420-ba23-3db0e317c35e",
            "rel": "bookmark"
        }
    ],
    "name": "micro-1"
},
{
    "id": "c464cdc0-f5a4-4c34-a909-26979eed0d0e",
    "links": [
        {
            "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/c464cdc0-
f5a4-4c34-a909-26979eed0d0e",
            "rel": "self"
        },
        {
            "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/c464cdc0-f5a4-
4c34-a909-26979eed0d0e",
            "rel": "bookmark"
        }
    ],
    "name": "memory-8"
},
{
    "id": "c957d085-4248-4f03-90ef-e34bdd8e2edb",
    "links": [
        {
            "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/c957d085-
4248-4f03-90ef-e34bdd8e2edb",
            "rel": "self"
        },
        {
            "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/c957d085-4248-
4f03-90ef-e34bdd8e2edb",
            "rel": "bookmark"
        }
    ],

```

```

    "name": "standard-12"
  },
  {
    "id": "cdd474aa-cd74-422d-8f74-cedf5e77a37c",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/cdd474aa-
cd74-422d-8f74-cedf5e77a37c",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/cdd474aa-cd74-
422d-8f74-cedf5e77a37c",
        "rel": "bookmark"
      }
    ],
    "name": "memory-1"
  },
  {
    "id": "cf4a1c2d-6784-4d30-a438-55501753aef1",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/cf4a1c2d-
6784-4d30-a438-55501753aef1",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/cf4a1c2d-6784-
4d30-a438-55501753aef1",
        "rel": "bookmark"
      }
    ],
    "name": "compute-8"
  },
  {
    "id": "d4762b16-a1dd-4580-90c0-535a8dfa0fb7",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/d4762b16-
a1dd-4580-90c0-535a8dfa0fb7",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/d4762b16-a1dd-
4580-90c0-535a8dfa0fb7",
        "rel": "bookmark"
      }
    ],
    "name": "super-38"
  },
  {
    "id": "ebf55dc2-981d-4402-9129-d5c89ebd66c4",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/ebf55dc2-
981d-4402-9129-d5c89ebd66c4",

```

```

        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/ebf55dc2-981d-
4402-9129-d5c89ebd66c4",
        "rel": "bookmark"
      }
    ],
    "name": "standard-16"
  }
]
}

```

Example of return 2

```

$ curl -s \
-X GET https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors \
-H 'Content-Type: application/json' \
-H 'Accept: application/json' \
-H 'X-Auth-Token: 2a669892e29c4c1784465e0cf6369a8e' | python -m json.tool | grep "name"

"name": "micro-2"
"name": "super-60"
"name": "standard-4"
"name": "standard-2"
"name": "memory-4"
"name": "super-20"
"name": "compute-2"
"name": "compute-4"
"name": "standard-1"
"name": "super-120"
"name": "standard-8"
"name": "memory-12"
"name": "compute-12"
"name": "memory-2"
"name": "micro-1"
"name": "memory-8"
"name": "standard-12"
"name": "memory-1"
"name": "compute-8"
"name": "super-38"
"name": "standard-16"

```

1.5.5.2. List all detailed specification

HTTP Method	URI Path	Description
GET	/v2/{project_id}/flavors/detail	List all detailed specification

Parameter of request

Example of request


```

$ curl -s \
  -X GET
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/detail \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: efe31cb9e58a442a9df65a7fae7ee9c2' | python -m json.tool

```

Parameter of return

Example of return

HTTP/1.1 200

```

{
  "flavors": [
    {
      "OS-FLV-DISABLED:disabled": false,
      "OS-FLV-EXT-DATA:ephemeral": 0,
      "disk": 20,
      "id": "06b954af-791b-4a63-85be-16c25e115b13",
      "links": [
        {
          "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/06b954af-791b-4a63-85be-16c25e115b13",
          "rel": "self"
        },
        {
          "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/06b954af-791b-4a63-85be-16c25e115b13",
          "rel": "bookmark"
        }
      ],
      "name": "micro-2",
      "os-flavor-access:is_public": true,
      "ram": 1024,
      "rxtx_factor": 1.0,
      "swap": "",
      "vcpus": 1
    },
    {
      "OS-FLV-DISABLED:disabled": false,
      "OS-FLV-EXT-DATA:ephemeral": 0,
      "disk": 20,
      "id": "0bcb11fe-14ce-49fa-8396-cf957ad20d46",
      "links": [
        {
          "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/0bcb11fe-14ce-49fa-8396-cf957ad20d46",
          "rel": "self"
        },
        {
          "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/0bcb11fe-14ce-49fa-8396-cf957ad20d46",

```

```

        "rel": "bookmark"
    }
],
"name": "super-60",
"os-flavor-access:is_public": true,
"ram": 51200,
"rxtx_factor": 1.0,
"swap": "",
"vcpus": 60
},
{
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "0d11cfd5-e0fb-4c8f-acd6-93dfddb6b87",
    "links": [
        {
            "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/0d11cfd5-
e0fb-4c8f-acd6-93dfddb6b87",
            "rel": "self"
        },
        {
            "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/0d11cfd5-e0fb-
4c8f-acd6-93dfddb6b87",
            "rel": "bookmark"
        }
    ],
    "name": "standard-4",
    "os-flavor-access:is_public": true,
    "ram": 8192,
    "rxtx_factor": 1.0,
    "swap": "",
    "vcpus": 4
},
{
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "11b8876e-486e-4563-9aae-d1911ac0421b",
    "links": [
        {
            "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/11b8876e-
486e-4563-9aae-d1911ac0421b",
            "rel": "self"
        },
        {
            "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/11b8876e-486e-
4563-9aae-d1911ac0421b",
            "rel": "bookmark"
        }
    ],
    "name": "standard-2",
    "os-flavor-access:is_public": true,
    "ram": 4096,
    "rxtx_factor": 1.0,
    "swap": "",
    "vcpus": 2
},
{

```

```

      "OS-FLV-DISABLED:disabled": false,
      "OS-FLV-EXT-DATA:ephemeral": 0,
      "disk": 20,
      "id": "13198b8f-a6f0-49d8-a365-c6e24b67b92a",
      "links": [
        {
          "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/13198b8f-
a6f0-49d8-a365-c6e24b67b92a",
          "rel": "self"
        },
        {
          "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/13198b8f-a6f0-
49d8-a365-c6e24b67b92a",
          "rel": "bookmark"
        }
      ],
      "name": "memory-4",
      "os-flavor-access:is_public": true,
      "ram": 16384,
      "rxtx_factor": 1.0,
      "swap": "",
      "vcpus": 4
    },
    {
      "OS-FLV-DISABLED:disabled": false,
      "OS-FLV-EXT-DATA:ephemeral": 0,
      "disk": 20,
      "id": "152238e4-e40d-4959-b38b-13f63e7db698",
      "links": [
        {
          "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/152238e4-
e40d-4959-b38b-13f63e7db698",
          "rel": "self"
        },
        {
          "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/152238e4-e40d-
4959-b38b-13f63e7db698",
          "rel": "bookmark"
        }
      ],
      "name": "super-20",
      "os-flavor-access:is_public": true,
      "ram": 51200,
      "rxtx_factor": 1.0,
      "swap": "",
      "vcpus": 20
    },
    {
      "OS-FLV-DISABLED:disabled": false,
      "OS-FLV-EXT-DATA:ephemeral": 0,
      "disk": 20,
      "id": "3d01565d-3603-4968-a090-c3a23b0713e0",
      "links": [
        {
          "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/3d01565d-
3603-4968-a090-c3a23b0713e0",
          "rel": "self"
        }
      ],

```

```

        {
            "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/3d01565d-3603-4968-a090-c3a23b0713e0",
            "rel": "bookmark"
        }
    ],
    "name": "compute-2",
    "os-flavor-access:is_public": true,
    "ram": 2048,
    "rxtx_factor": 1.0,
    "swap": "",
    "vcpus": 2
},
{
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "3d651427-084b-4567-a564-4d7feb823116",
    "links": [
        {
            "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/3d651427-084b-4567-a564-4d7feb823116",
            "rel": "self"
        },
        {
            "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/3d651427-084b-4567-a564-4d7feb823116",
            "rel": "bookmark"
        }
    ],
    "name": "compute-4",
    "os-flavor-access:is_public": true,
    "ram": 4096,
    "rxtx_factor": 1.0,
    "swap": "",
    "vcpus": 4
},
{
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "4497a757-a4d9-4569-bad1-07b7c49226e1",
    "links": [
        {
            "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/4497a757-a4d9-4569-bad1-07b7c49226e1",
            "rel": "self"
        },
        {
            "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/4497a757-a4d9-4569-bad1-07b7c49226e1",
            "rel": "bookmark"
        }
    ],
    "name": "standard-1",
    "os-flavor-access:is_public": true,
    "ram": 2048,
    "rxtx_factor": 1.0,

```

```

    "swap": "",
    "vcpus": 1
  },
  {
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "5409492b-4aa6-4b10-b387-6cdd92203c32",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/5409492b-
4aa6-4b10-b387-6cdd92203c32",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/5409492b-4aa6-
4b10-b387-6cdd92203c32",
        "rel": "bookmark"
      }
    ],
    "name": "super-120",
    "os-flavor-access:is_public": true,
    "ram": 51200,
    "rxtx_factor": 1.0,
    "swap": "",
    "vcpus": 120
  },
  {
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "55caeea6-c5b3-41c0-aab5-2c084a02b36e",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/55caeea6-
c5b3-41c0-aab5-2c084a02b36e",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/55caeea6-c5b3-
41c0-aab5-2c084a02b36e",
        "rel": "bookmark"
      }
    ],
    "name": "standard-8",
    "os-flavor-access:is_public": true,
    "ram": 16384,
    "rxtx_factor": 1.0,
    "swap": "",
    "vcpus": 8
  },
  {
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "57d9d43f-5916-4946-9266-65e154ee834d",
    "links": [
      {

```

```

        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/57d9d43f-
5916-4946-9266-65e154ee834d",
        "rel": "self"
    },
    {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/57d9d43f-5916-
4946-9266-65e154ee834d",
        "rel": "bookmark"
    }
],
"name": "memory-12",
"os-flavor-access:is_public": true,
"ram": 49152,
"rxtx_factor": 1.0,
"swap": "",
"vcpus": 12
},
{
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "862e5d95-f1f8-4824-8b61-04b411076ff4",
    "links": [
        {
            "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/862e5d95-
f1f8-4824-8b61-04b411076ff4",
            "rel": "self"
        },
        {
            "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/862e5d95-f1f8-
4824-8b61-04b411076ff4",
            "rel": "bookmark"
        }
    ],
    "name": "compute-12",
    "os-flavor-access:is_public": true,
    "ram": 12288,
    "rxtx_factor": 1.0,
    "swap": "",
    "vcpus": 12
},
{
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "a18867b7-5f20-4ecd-9ede-9c179e0996b2",
    "links": [
        {
            "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/a18867b7-
5f20-4ecd-9ede-9c179e0996b2",
            "rel": "self"
        },
        {
            "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/a18867b7-5f20-
4ecd-9ede-9c179e0996b2",
            "rel": "bookmark"
        }
    ]
}

```

```

    ],
    "name": "memory-2",
    "os-flavor-access:is_public": true,
    "ram": 8192,
    "rxtx_factor": 1.0,
    "swap": "",
    "vcpus": 2
  },
  {
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "c25c8fbc-d1e8-4420-ba23-3db0e317c35e",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/c25c8fbc-d1e8-4420-ba23-3db0e317c35e",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/c25c8fbc-d1e8-4420-ba23-3db0e317c35e",
        "rel": "bookmark"
      }
    ],
    "name": "micro-1",
    "os-flavor-access:is_public": true,
    "ram": 512,
    "rxtx_factor": 1.0,
    "swap": "",
    "vcpus": 1
  },
  {
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "c464cdc0-f5a4-4c34-a909-26979eed0d0e",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/c464cdc0-f5a4-4c34-a909-26979eed0d0e",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/c464cdc0-f5a4-4c34-a909-26979eed0d0e",
        "rel": "bookmark"
      }
    ],
    "name": "memory-8",
    "os-flavor-access:is_public": true,
    "ram": 32768,
    "rxtx_factor": 1.0,
    "swap": "",
    "vcpus": 8
  },
  {
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,

```

```

    "disk": 20,
    "id": "c957d085-4248-4f03-90ef-e34bdd8e2edb",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/c957d085-
4248-4f03-90ef-e34bdd8e2edb",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/c957d085-4248-
4f03-90ef-e34bdd8e2edb",
        "rel": "bookmark"
      }
    ],
    "name": "standard-12",
    "os-flavor-access:is_public": true,
    "ram": 24576,
    "rxtx_factor": 1.0,
    "swap": "",
    "vcpus": 12
  },
  {
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "cdd474aa-cd74-422d-8f74-cedf5e77a37c",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/cdd474aa-
cd74-422d-8f74-cedf5e77a37c",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/cdd474aa-cd74-
422d-8f74-cedf5e77a37c",
        "rel": "bookmark"
      }
    ],
    "name": "memory-1",
    "os-flavor-access:is_public": true,
    "ram": 4096,
    "rxtx_factor": 1.0,
    "swap": "",
    "vcpus": 1
  },
  {
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "cf4a1c2d-6784-4d30-a438-55501753aef1",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/cf4a1c2d-
6784-4d30-a438-55501753aef1",
        "rel": "self"
      },
    ]
  }

```



```

                "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/cf4a1c2d-6784-
4d30-a438-55501753aef1",
                "rel": "bookmark"
            }
        ],
        "name": "compute-8",
        "os-flavor-access:is_public": true,
        "ram": 8192,
        "rxtx_factor": 1.0,
        "swap": "",
        "vcpus": 8
    },
    {
        "OS-FLV-DISABLED:disabled": false,
        "OS-FLV-EXT-DATA:ephemeral": 0,
        "disk": 20,
        "id": "d4762b16-a1dd-4580-90c0-535a8dfa0fb7",
        "links": [
            {
                "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/d4762b16-
a1dd-4580-90c0-535a8dfa0fb7",
                "rel": "self"
            },
            {
                "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/d4762b16-a1dd-
4580-90c0-535a8dfa0fb7",
                "rel": "bookmark"
            }
        ],
        "name": "super-38",
        "os-flavor-access:is_public": true,
        "ram": 51200,
        "rxtx_factor": 1.0,
        "swap": "",
        "vcpus": 38
    },
    {
        "OS-FLV-DISABLED:disabled": false,
        "OS-FLV-EXT-DATA:ephemeral": 0,
        "disk": 20,
        "id": "ebf55dc2-981d-4402-9129-d5c89ebd66c4",
        "links": [
            {
                "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/ebf55dc2-
981d-4402-9129-d5c89ebd66c4",
                "rel": "self"
            },
            {
                "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/ebf55dc2-981d-
4402-9129-d5c89ebd66c4",
                "rel": "bookmark"
            }
        ],
        "name": "standard-16",
        "os-flavor-access:is_public": true,
        "ram": 32768,
        "rxtx_factor": 1.0,
        "swap": "",

```

```

    "vcpus": 16
  }
]
}

```

1.5.5.3. List designated specification

HTTP Method	URI Path	Description
GET	/v2/{project_id}/flavors/{flavor_id}	List designated specification

Parameter of request

Example of request

```

$ curl -s \
  -X GET
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/ebf55dc2-981d-4402-9129-d5c89ebd66c4 \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: 1fcc64ab33544b42befafbb5870f8143' | python -m json.tool

```

Parameter of return

Field name	Type	Description
id	uuid	ID of flavors
links	dict	Link of flavor information, you can get more detailed information through these links
name	string	Name of flavors
ram	int	Size of RAM, in MB.
vcpus	int	How many virtual CPU of the instance
disk	int	Size of root partition, in GB
swap	int	Size of swap partition, in GB
os-flavor-access:is_public	bool	Check if specification information is public or not. If yes, everybody can see and use it.

Example of return

```
HTTP/1.1 200
```

```

{
  "flavor": {
    "OS-FLV-DISABLED:disabled": false,
    "OS-FLV-EXT-DATA:ephemeral": 0,
    "disk": 20,
    "id": "ebf55dc2-981d-4402-9129-d5c89ebd66c4",
    "links": [
      {
        "href":
"https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/flavors/ebf55dc2-981d-4402-9129-d5c89ebd66c4",
        "rel": "self"
      },
      {
        "href":
"https://regionone.compute.vling.io/24be2887cf4b4dc88c4443a104268016/flavors/ebf55dc2-981d-4402-9129-d5c89ebd66c4",
        "rel": "bookmark"
      }
    ],
    "name": "standard-16",
    "os-flavor-access:is_public": true,
    "ram": 32768,
    "rxtx_factor": 1.0,
    "swap": "",
    "vcpus": 16
  }
}

```

1.5.6. Networks

1.5.6.1. Attach a virtual network interface card

HTTP Method	URI Path	Description
POST	/v2/{project_id}/servers/{server_id}/os-interface	Attach a V-NIC

Parameter of request

Field name	Type	Description
port_id	uuid	Assign V-NIC which will be attached to instances.

Example of request

```

$ curl -s \
  -X POST
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/24b3f7bd-b15f-4f63-96e9-e93dbf7d5edb/os-interface \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: a13deca6a15844aca21db3ec1fe61267' \
  -d '{
  "interfaceAttachment": {

```

```

        "port_id": "ad44802b-cc71-4827-9e19-32a8b3d88431"
    }
}'

```

Parameter of return

Example of return

HTTP/1.1 200

1.5.6.2. Detach Virtual Network Interface Card

HTTP Method	URI Path	Description
DELETE	/v2/{project_id}/servers/{server_id}/os-interface/{port_id}	Detach VNIC

Parameter of request

Example of request

```

$ curl -s \
  -X DELETE
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/24b3
f7bd-b15f-4f63-96e9-e93dbf7d5edb/os-interface/ad44802b-cc71-4827-9e19-32a8b3d88431
\
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: a13deca6a15844aca21db3ec1fe61267'

```

Parameter of return

Example of return

HTTP/1.1 202

1.5.6.3. Join a network

HTTP Method	URI Path	Description
POST	/v2/{project_id}/servers/{server_id}/os-interface	Join a network

Parameter of request

Field name	Type	Description
sbunet_id	uuid	Indicate which subnet to join to.
net_id	uuid	Indicate which network the instance will join to.

Example of request

```
$ curl -s \
  -X POST
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/24b3
f7bd-b15f-4f63-96e9-e93dbf7d5edb/os-interface \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: a13deca6a15844aca21db3ec1fe61267' \
  -d '{
    "interfaceAttachment": {
      "fixed_ips": [
        {
          "subnet_id": "49082eb7-2b60-4cee-8553-9ccc06c99b84"
        }
      ]
      "net_id": "f665f66c-1df2-4ed8-bd03-45a8d609818a"
    }
  }'
```

Parameter of return

Parameter of return

HTTP/1.1 200

1.5.7. VNC Console

1.5.7.1. Get address of VNC

HTTP Method	URI Path	Description
POST	/v2/{project_id}/servers/{server_id}/action	Get address of VNC

Parameter of request

Field name	Type	Description
type	string	Type of VNC terminal

Example of request

```

$ curl -s \
  -X POST
https://regionone.compute.vling.io/v2/24be2887cf4b4dc88c4443a104268016/servers/24b3f7bd-b15f-
4f63-96e9-e93dbf7d5edb/action \
  -H 'Content-Type: application/json' \
  -H 'Accept: application/json' \
  -H 'X-Auth-Token: 7250dad139a642b7b3ab88efa88bf26f' \
  -d '{
    "os-getVNCConsole": {
      "type": "novnc"
    }
  }'|python -m json.tool

{
  "console": {
    "type": "novnc",
    "url": "https://vling.io/vnc/RegionOne/vnc_auto.html?token=76edcf6d-71b8-4cd9-b3b7-
d6dee2035b5d"
  }
}

```

Parameter of return

Field name	Type	Description
type	string	Type of VNC terminal
url	string	URL of VNC terminal

Example of return

1.6. Block Storage Service

1.6.1. API Rules

The following are API entrance and API list of Block Storage Service

- API Entrance:

Region	API Entrance
regionone	https://regionone.volume.vling.io

- API List

Resource	Operation	HTTP METHOD Methods	URI PATH Path
Volumes	Create blank volumes	POST	/v2/{project_id}/volumes
	Create volumes from volume snapshot	POST	/v2/{project_id}/volumes
	Check basic list of volume	GET	/v2/{project_id}/volumes
	Check detailed list of volume	GET	/v2/{project_id}/volumes/detail
	Check designated volume information	GET	/v2/{project_id}/volumes/{volume_id}
	Change volume name or description	PUT	/v2/{project_id}/volumes/{volume_id}
	Delete volume	DELETE	/v2/{project_id}/volumes/{volume_id}
	Expand volume	POST	/v2/{project_id}/volumes/{volume_id}/action
Snapshots	Create volume snapshot	POST	/v2/{project_id}/snapshots
	Check basic list of volume snapshot	GET	/v2/{project_id}/snapshots
	Check detailed list of volume snapshot	GET	/v2/{project_id}/snapshots/detail
	Check designated information of snapshot	GET	/v2/{project_id}/snapshots/{snapshot_id}
	Delete volume snapshot	DELETE	/v2/{project_id}/snapshots/{snapshot_id}

1.6.2. Volumes

1.6.2.1. Create blank volumes

HTTP METHOD Method	URI PATH Path	Description
POST	/v2/{project_id}/volumes	Create blank volume

Parameter of request

Field name Field Name	TypeType	Description
display_name	string(optional)	Name of volume
display_description	string(optional)	Description of volume
size	int	Size of volume, in GB
volume_type	string(optional)	Type of volume, default is SSD, options are SSD and SATA

Example of request

```
$ curl -s \
```

```
-X POST https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes \
-H "Content-Type: application/json" \
-H "X-Auth-Token: 7250dad139a642b7b3ab88efa88bf26f" \
-d '{
    "volume": {
        "display_description": "testonly1",
        "snapshot_id": null,
        "size": 1,
        "display_name": "testonly1"
    }
}' | python -m json.tool
```

Parameter of return

Field name	Type	Description
status	string	Status of volume
display_name	string	Name of volume
display_description	string	Description of volume
attachments	string	Time since attached
created_at	datetime	Time when volume was created
snapshot_id	uuid	If the volume is created based on snapshot, it is UUID of the snapshot
size	int	Size of volume, in GB
id	uuid	UUID of volume

Example of return

```
HTTP/1.1 200
{
  "volume": {
    "attachments": [],
    "availability_zone": "nova",
    "bootable": "false",
    "created_at": "2016-11-16T19:24:23.192084",
    "description": "testonly1",
    "encrypted": false,
    "id": "fe99ff76-8447-4b0b-a579-13dca06f970d",
    "links": [
      {
        "href":
"http://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/fe99ff76-8447-4b0b-a579-13dca06f970d",
        "rel": "self"
      },
      {
        "href":
"http://regionone.volume.vling.io/24be2887cf4b4dc88c4443a104268016/volumes/fe99ff76-8447-4b0b-a579-13dca06f970d",
        "rel": "bookmark"
      }
    ]
  },
}
```



```

    "metadata": {},
    "name": "testonly1",
    "shareable": false,
    "size": 1,
    "snapshot_id": null,
    "source_valid": null,
    "status": "creating",
    "user_id": "a89c9bbf798c420d8035bd6b01863939",
    "volume_type": "ssd"
  }
}

```

1.6.2.2. Create volume from volume snapshot

HTTP METHOD	URI PATH Path	Description
POST	/v2/{project_id}/volumes	Create volume from snapshot

Parameter of request

Field name	Type	Description
display_name	string(optional)	Name of volume
display_description	string(optional)	Description of volume
snapshot_id	uuid	UUID of volume
size	int	Size of volume, in GB

Example of request

```

$ curl -s \
  -X POST https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes \
  -H "Content-Type: application/json" \
  -H "X-Auth-Token: 7250dad139a642b7b3ab88efa88bf26f" \
  -d '{
    "volume": {
      "display_description": null,
      "snapshot_id": "b95cc1cf-7e0e-476e-911b-866eff5d6549",
      "size": 10,
      "display_name": null
    }
  }' | python -m json.tool

```

Parameter of return

Field name	Type	Description
status	string	Status of volume
display_name	string	Name of volume
display_description	string	Description of volume
attachments	string	Time since attached

Field name	Type	Description
created_at	datetime	Time when volume was created
snapshot_id	uuid	If the volume is created based on snapshot, it is UUID of the snapshot
size	int	Size of volume, in GB
id	uuid	UUID of volume

Example of return

```
HTTP/1.1 200
{
  "volume": {
    "attachments": [],
    "availability_zone": "nova",
    "bootable": "false",
    "created_at": "2016-11-16T19:32:23.985245",
    "description": null,
    "encrypted": false,
    "id": "3c6df49f-b2e7-4810-b507-426bf51ad9bb",
    "links": [
      {
        "href":
"http://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/3c6df49f-b2e7-4810-b507-426bf51ad9bb",
        "rel": "self"
      },
      {
        "href":
"http://regionone.volume.vling.io/24be2887cf4b4dc88c4443a104268016/volumes/3c6df49f-b2e7-4810-b507-426bf51ad9bb",
        "rel": "bookmark"
      }
    ],
    "metadata": {},
    "name": "vol-3c6df49f-b2e7-4810-b507-426bf51ad9bb",
    "shareable": false,
    "size": 10,
    "snapshot_id": "b95cc1cf-7e0e-476e-911b-866eff5d6549",
    "source_volid": null,
    "status": "creating",
    "user_id": "a89c9bbf798c420d8035bd6b01863939",
    "volume_type": "sata"
  }
}
```

1.6.2.3. Check basic list of volume

HTTP METHOD	URI PATH	Description
GET	/v2/{project_id}/volumes	Get list of volume

Parameter of request

Example of request

```
$ curl -s \
```

```
-X GET https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes \
-H "Content-Type: application/json" \
-H "X-Auth-Token: 7250dad139a642b7b3ab88efa88bf26f" | python -m json.tool
```

Parameter of return

Example of return

```
HTTP/1.1 200
{
  "volumes": [
    {
      "id": "3c6df49f-b2e7-4810-b507-426bf51ad9bb",
      "links": [
        {
          "href":
"http://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/3c6df49f-b2e7-4810-b507-426bf51ad9bb",
          "rel": "self"
        },
        {
          "href":
"http://regionone.volume.vling.io/24be2887cf4b4dc88c4443a104268016/volumes/3c6df49f-b2e7-4810-b507-426bf51ad9bb",
          "rel": "bookmark"
        }
      ],
      "name": "vol-3c6df49f-b2e7-4810-b507-426bf51ad9bb"
    },
    {
      "id": "fe99ff76-8447-4b0b-a579-13dca06f970d",
      "links": [
        {
          "href":
"http://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/fe99ff76-8447-4b0b-a579-13dca06f970d",
          "rel": "self"
        },
        {
          "href":
"http://regionone.volume.vling.io/24be2887cf4b4dc88c4443a104268016/volumes/fe99ff76-8447-4b0b-a579-13dca06f970d",
          "rel": "bookmark"
        }
      ],
      "name": "testonly1"
    },
    {
      "id": "6a24325d-4a5a-46e5-aff6-ebbc14207ab3",
      "links": [
        {
          "href":
"http://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/6a24325d-4a5a-46e5-aff6-ebbc14207ab3",
          "rel": "self"
        }
      ],
    }
  ]
}
```

```

        "href":
"http://regionone.volume.vling.io/24be2887cf4b4dc88c4443a104268016/volumes/6a24325d-4a5a-
46e5-aff6-ebbc14207ab3",
        "rel": "bookmark"
    }
  ],
  "name": "demo1-2"
},
{
  "id": "e85d96d6-96e6-4638-b18f-24b83647a454",
  "links": [
    {
      "href":
"http://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/e85d96d6-96e6-
4638-b18f-24b83647a454",
      "rel": "self"
    },
    {
      "href":
"http://regionone.volume.vling.io/24be2887cf4b4dc88c4443a104268016/volumes/e85d96d6-96e6-
4638-b18f-24b83647a454",
      "rel": "bookmark"
    }
  ],
  "name": "demo1"
}
]
}
}

```

1.6.2.4. Check detailed list of volume

HTTP METHOD	URI PATH	Description
GET	/v2/{project_id}/volumes/detail	Check detailed list of volume

Parameter of request

Example of request

```

$ curl -s \
-X GET https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/detail \
-H "Content-Type: application/json" \
-H "X-Auth-Token: 7250dad139a642b7b3ab88efa88bf26f" | python -m json.tool

```

Parameter of return

Example of return

```

HTTP/1.1 200
{
  "volumes": [
    {
      "attachments": [],
      "availability_zone": "nova",
      "bootable": "false",
      "created_at": "2016-11-16T19:32:23.000000",
      "description": null,
      "encrypted": false,

```

```

      "id": "3c6df49f-b2e7-4810-b507-426bf51ad9bb",
      "links": [
        {
          "href":
"http://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/3c6df49f-b2e7-4810-b507-426bf51ad9bb",
          "rel": "self"
        },
        {
          "href":
"http://regionone.volume.vling.io/24be2887cf4b4dc88c4443a104268016/volumes/3c6df49f-b2e7-4810-b507-426bf51ad9bb",
          "rel": "bookmark"
        }
      ],
      "metadata": {},
      "name": "vol-3c6df49f-b2e7-4810-b507-426bf51ad9bb",
      "os-vol-tenant-attr:tenant_id": "24be2887cf4b4dc88c4443a104268016",
      "shareable": false,
      "size": 10,
      "snapshot_id": "b95cc1cf-7e0e-476e-911b-866eff5d6549",
      "source_volid": null,
      "status": "available",
      "user_id": "a89c9bbf798c420d8035bd6b01863939",
      "volume_type": "sata"
    },
    {
      "attachments": [],
      "availability_zone": "nova",
      "bootable": "false",
      "created_at": "2016-11-16T19:24:23.000000",
      "description": "testonly1",
      "encrypted": false,
      "id": "fe99ff76-8447-4b0b-a579-13dca06f970d",
      "links": [
        {
          "href":
"http://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/fe99ff76-8447-4b0b-a579-13dca06f970d",
          "rel": "self"
        },
        {
          "href":
"http://regionone.volume.vling.io/24be2887cf4b4dc88c4443a104268016/volumes/fe99ff76-8447-4b0b-a579-13dca06f970d",
          "rel": "bookmark"
        }
      ],
      "metadata": {},
      "name": "testonly1",
      "os-vol-tenant-attr:tenant_id": "24be2887cf4b4dc88c4443a104268016",
      "shareable": false,
      "size": 1,
      "snapshot_id": null,
      "source_volid": null,
      "status": "available",
      "user_id": "a89c9bbf798c420d8035bd6b01863939",
      "volume_type": "ssd"
    },
    {
      "attachments": [
        {
          "attachment_id": "93dbc3d2-8bba-4269-9098-3495f3266e71",

```

```

        "device": "/dev/vdb",
        "host_name": "cindersata-ceph",
        "id": "6a24325d-4a5a-46e5-aff6-ebbc14207ab3",
        "server_id": "24b3f7bd-b15f-4f63-96e9-e93dbf7d5edb",
        "volume_id": "6a24325d-4a5a-46e5-aff6-ebbc14207ab3"
    }
],
"availability_zone": "nova",
"bootable": "false",
"created_at": "2016-11-07T21:41:56.000000",
"description": "",
"encrypted": false,
"id": "6a24325d-4a5a-46e5-aff6-ebbc14207ab3",
"links": [
    {
        "href":
"http://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/6a24325d-4a5a-46e5-aff6-ebbc14207ab3",
        "rel": "self"
    },
    {
        "href":
"http://regionone.volume.vling.io/24be2887cf4b4dc88c4443a104268016/volumes/6a24325d-4a5a-46e5-aff6-ebbc14207ab3",
        "rel": "bookmark"
    }
],
"metadata": {
    "attached_mode": "rw",
    "readonly": "False"
},
"name": "demo1-2",
"os-vol-tenant-attr:tenant_id": "24be2887cf4b4dc88c4443a104268016",
"shareable": false,
"size": 10,
"snapshot_id": null,
"source_vol_id": null,
"status": "in-use",
"user_id": "a89c9bbf798c420d8035bd6b01863939",
"volume_type": "sata"
},
{
    "attachments": [
        {
            "attachment_id": "234cb96f-5d01-4588-bf5e-dcf91d00ed9e",
            "device": "/dev/vdc",
            "host_name": "cindersata-ceph",
            "id": "e85d96d6-96e6-4638-b18f-24b83647a454",
            "server_id": "24b3f7bd-b15f-4f63-96e9-e93dbf7d5edb",
            "volume_id": "e85d96d6-96e6-4638-b18f-24b83647a454"
        }
    ],
    "availability_zone": "nova",
    "bootable": "false",
    "created_at": "2016-11-07T19:15:30.000000",
    "description": "",
    "encrypted": false,
    "id": "e85d96d6-96e6-4638-b18f-24b83647a454",
    "links": [
        {
            "href":
"http://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/e85d96d6-96e6-4638-b18f-24b83647a454",

```

```

        "rel": "self"
    },
    {
        "href":
"http://regionone.volume.vling.io/24be2887cf4b4dc88c4443a104268016/volumes/e85d96d6-96e6-
4638-b18f-24b83647a454",
        "rel": "bookmark"
    }
],
"metadata": {
    "attached_mode": "rw",
    "readonly": "False"
},
"name": "demol",
"os-vol-tenant-attr:tenant_id": "24be2887cf4b4dc88c4443a104268016",
"shareable": false,
"size": 10,
"snapshot_id": null,
"source_volid": null,
"status": "in-use",
"user_id": "a89c9bbf798c420d8035bd6b01863939",
"volume_type": "sata"
}
]
}

```

1.6.2.5. Check designated volume information

HTTP METHOD	URI PATH	Description
GET	/v2/{project_id}/volumes/{volume_id}	Check designated volume information

Parameter of request

Example of request

```

$ curl -s \
-X GET
https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/fe99ff76-8447-
4b0b-a579-13dca06f970d \
-H "Content-Type: application/json" \
-H "X-Auth-Token: 7250dad139a642b7b3ab88efa88bf26f" | python -m json.tool

```

Parameter of return

Example of return

```

HTTP/1.1 200
{
  "volume": {
    "attachments": [],
    "availability_zone": "nova",
    "bootable": "false",
    "created_at": "2016-11-16T19:24:23.000000",
    "description": "testonly1",
    "encrypted": false,
    "id": "fe99ff76-8447-4b0b-a579-13dca06f970d",

```

```

    "links": [
      {
        "href":
"http://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/fe99ff76-8447-4b0b-a579-13dca06f970d",
        "rel": "self"
      },
      {
        "href":
"http://regionone.volume.vling.io/24be2887cf4b4dc88c4443a104268016/volumes/fe99ff76-8447-4b0b-a579-13dca06f970d",
        "rel": "bookmark"
      }
    ],
    "metadata": {},
    "name": "testonly1",
    "os-vol-tenant-attr:tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "shareable": false,
    "size": 1,
    "snapshot_id": null,
    "source_volid": null,
    "status": "available",
    "user_id": "a89c9bbf798c420d8035bd6b01863939",
    "volume_type": "ssd"
  }
}

```

1.6.2.6. Change volume name or description

HTTP METHOD	URI PATH	Description
PUT	/v2/{project_id}/volumes/{volume_id}	Change volume name or description

Parameter of request

Field name	Type	Description
display_name	string(optional)	Name of volume
display_description	string(optional)	Description of volume

Example of request

```

$ curl -s \
  -X PUT
https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/fe99ff76-8447-4b0b-a579-13dca06f970d \
  -H "Content-Type: application/json" \
  -H "X-Auth-Token: 7250dad139a642b7b3ab88efa88bf26f" \
  -d '{
  "volume": {
    "display_description": "This is yet, another volume.",
    "display_name": "testonly-vol003"
  }
}' | python -m json.tool

```


Example of return

```
HTTP/1.1 200
{
  "volume": {
    "attachments": [],
    "availability_zone": "nova",
    "bootable": "false",
    "created_at": "2016-11-16T19:24:23.000000",
    "description": "This is yet, another volume.",
    "encrypted": false,
    "id": "fe99ff76-8447-4b0b-a579-13dca06f970d",
    "links": [
      {
        "href":
"http://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/fe99ff76-8447-4b0b-a579-13dca06f970d",
        "rel": "self"
      },
      {
        "href":
"http://regionone.volume.vling.io/24be2887cf4b4dc88c4443a104268016/volumes/fe99ff76-8447-4b0b-a579-13dca06f970d",
        "rel": "bookmark"
      }
    ],
    "metadata": {},
    "name": "testonly-vol003",
    "shareable": false,
    "size": 1,
    "snapshot_id": null,
    "source_volid": null,
    "status": "available",
    "user_id": "a89c9bbf798c420d8035bd6b01863939",
    "volume_type": "ssd"
  }
}
```

1.6.2.7. Delete volume

HTTP METHOD	URI PATH	Description
DELETE	/v2/{project_id}/volumes/{volume_id}	Delete volume

Example of request

```
$ curl -s \
  -X DELETE
https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/fe99ff76-8447-4b0b-a579-13dca06f970d \
  -H "Content-Type: application/json" \
  -H "X-Auth-Token: 7250dad139a642b7b3ab88efa88bf26f"
```

Example of return

HTTP/1.1 202

1.6.2.8. Expand volume

HTTP METHOD	URI PATH	Description
POST	/v2/{project_id}/volumes/{volume_id}/action	Expand volume

Parameter of request

Field name	Type	Description
new_size	int	Size of expanded volume

Example of request

```
$ curl -s \  
  -X POST  
https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/volumes/3c6df49f-b2e7-  
4810-b507-426bf51ad9bb/action \  
  -H "Content-Type: application/json" \  
  -H "X-Auth-Token: 7250dad139a642b7b3ab88efa88bf26f" \  
  -d '{  
    "os-extend": {  
      "new_size": 15  
    }  
  }'
```

Example of return

HTTP/1.1 202

1.6.3. Snapshots

1.6.3.1. Create snapshot

HTTP Methods	URI Path	Description
POST	/v2/{project_id}/snapshots	Create volume snapshot

Parameter of request

Field name	Type	Description
name	string(optional)	Name of volume snapshot
description	string(optional)	Description of volume snapshot
volume_id	uuid	UUID of volume
force	boolean(optional)	Force create volume snapshot(when volume is attached to instance) or not

Example of request

```

$ curl -s \
-X POST https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/snapshots \
-H "Content-Type: application/json" \
-H "X-Auth-Token: 7250dad139a642b7b3ab88efa88bf26f" \
-d '{
    "snapshot": {
        "name": "snap-testonly",
        "description": "Daily backup",
        "volume_id": "3c6df49f-b2e7-4810-b507-426bf51ad9bb",
        "force": true
    }
}' | python -m json.tool

```

Parameter of return

Field name	Type	Description
status	string	Status of volume snapshot
name	string	Name of volume snapshot
description	string	Description of volume snapshot
created_at	datetime	Time when volume was created
volume_id	uuid	UUID of volume
size	int	Size of volume snapshot, in GB
id	uuid	UUID of volume snapshot

Example of return

```

HTTP/1.1 200
{
  "snapshot": {
    "created_at": "2016-11-16T20:07:30.045959",
    "description": "Daily backup",
    "id": "7fcb1116-f712-495b-a331-62dfce32d6dd",
    "metadata": {},
    "name": "snap-testonly",
    "size": 15,
    "status": "creating",
    "volume_id": "3c6df49f-b2e7-4810-b507-426bf51ad9bb"
  }
}

```

1.6.3.2. Check basic list of volume snapshot

HTTP METHOD	URI PATH	Description
GET	/v2/{project_id}/snapshots	Check basic list of volume snapshot

Parameter of request

Example of request

```
$ curl -s \
-X GET https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/snapshots \
-H "Content-Type: application/json" \
-H "X-Auth-Token: 7250dad139a642b7b3ab88efa88bf26f" | python -m json.tool
```

Parameter of return

Example of return

HTTP/1.1 200

```
{
  "snapshots": [
    {
      "created_at": "2016-11-09T18:35:24.000000",
      "description": "Daily backup",
      "id": "080dc82a-331a-4948-93ec-80702decdd52",
      "metadata": {},
      "name": "demo1-snap-2016-11-09-18-37-06",
      "size": 10,
      "status": "available",
      "volume_id": "e85d96d6-96e6-4638-b18f-24b83647a454"
    },
    {
      "created_at": "2016-11-09T18:46:58.000000",
      "description": "Daily backup",
      "id": "ead13d5c-6ecb-4005-9321-eae878c5484b",
      "metadata": {},
      "name": "demo1-2-snap-2016-11-09-18-50-21",
      "size": 10,
      "status": "available",
      "volume_id": "6a24325d-4a5a-46e5-aff6-ebbc14207ab3"
    }
  ]
}
```

1.6.3.3. Check detailed list of volume snapshot

HTTP METHOD	URI PATH	Description
GET	/v2/{project_id}/snapshots/detail	Check detailed list of volume snapshot

Parameter of request

Example of request

```
$ curl -s \
-X GET
https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/snapshots/detail \
-H "Content-Type: application/json" \
-H "X-Auth-Token: 1ec3a3ebcfa54b3ca0322a21959d8120" | python -m json.tool
```

Parameter of return

Example of return

```

HTTP/1.1 200
{
  "snapshots": [
    {
      "created_at": "2016-11-09T18:35:24.000000",
      "description": "Daily backup",
      "id": "080dc82a-331a-4948-93ec-80702decdd52",
      "metadata": {},
      "name": "demo1-snap-2016-11-09-18-37-06",
      "os-extended-snapshot-attributes:progress": "100%",
      "os-extended-snapshot-attributes:project_id": "24be2887cf4b4dc88c4443a104268016",
      "size": 10,
      "status": "available",
      "volume_id": "e85d96d6-96e6-4638-b18f-24b83647a454"
    },
    {
      "created_at": "2016-11-09T18:46:58.000000",
      "description": "Daily backup",
      "id": "ead13d5c-6ecb-4005-9321-eae878c5484b",
      "metadata": {},
      "name": "demo1-2-snap-2016-11-09-18-50-21",
      "os-extended-snapshot-attributes:progress": "100%",
      "os-extended-snapshot-attributes:project_id": "24be2887cf4b4dc88c4443a104268016",
      "size": 10,
      "status": "available",
      "volume_id": "6a24325d-4a5a-46e5-aff6-ebbc14207ab3"
    }
  ]
}

```

1.6.3.4. Check snapshot information of a volume

HTTP METHOD	URI PATH	Description
GET	/v2/{project_id}/snapshots/{snapshot_id}	Check snapshot information of a volume

Parameter of request

Example of request

```

$ curl -s \
  -X GET
https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/snapshots/080dc82a-
331a-4948-93ec-80702decdd52 \
  -H "Content-Type: application/json" \
  -H "X-Auth-Token: 1ec3a3ebcfa54b3ca0322a21959d8120" | python -m json.tool

```

Example of return

```

HTTP/1.1 200
{
  "snapshot": {
    "created_at": "2016-11-09T18:35:24.000000",
    "description": "Daily backup",
    "id": "080dc82a-331a-4948-93ec-80702decdd52",
    "metadata": {},
    "name": "demo1-snap-2016-11-09-18-37-06",
    "os-extended-snapshot-attributes:progress": "100%",
    "os-extended-snapshot-attributes:project_id": "24be2887cf4b4dc88c4443a104268016",

```

```

    "size": 10,
    "status": "available",
    "volume_id": "e85d96d6-96e6-4638-b18f-24b83647a454"
  }
}

```

1.6.3.5. Change snapshot name or description

HTTP METHOD	URI PATH	Description
PUT	/v2/{project_id}/snapshots/{snapshot_id}	Change snapshot name or description

Parameter of request

Field name	Type	Description
name	string(optional)	Name of volume snapshot
description	string(optional)	Description of volume snapshot

Example of request

```

$ curl -s \
  -X PUT
https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/snapshots/080dc82a-
331a-4948-93ec-80702decdd52 \
  -H "Content-Type: application/json" \
  -H "X-Auth-Token: lec3a3ebcfa54b3ca0322a21959d8120" \
  -d '{
    "snapshot": {
      "description": "Another snapshot.",
      "name": "snap-002"
    }
  }'| python -m json.tool

```

Example of return

```

HTTP/1.1 200
{
  "snapshot": {
    "created_at": "2016-11-09T18:35:24.000000",
    "description": "Another snapshot.",
    "id": "080dc82a-331a-4948-93ec-80702decdd52",
    "metadata": {},
    "name": "snap-002",
    "size": 10,
    "status": "available",
    "volume_id": "e85d96d6-96e6-4638-b18f-24b83647a454"
  }
}

```

1.6.3.6. Delete volume snapshot

HTTP METHOD	URI PATH	Description
-------------	----------	-------------

HTTP METHOD	URI PATH	Description
DELETE	/v2/{project_id}/snapshots/{snapshot_id}	Delete volume snapshot

Example of request

```
$ curl -s \
  -X DELETE
https://regionone.volume.vling.io/v2/24be2887cf4b4dc88c4443a104268016/snapshots/ead13d5c-
6ecb-4005-9321-eae878c5484b \
  -H "Content-Type: application/json" \
  -H "X-Auth-Token: 7a8ae42afbc14fe89a2e65788b79fc70"
```

Example of return

```
HTTP/1.1 202
```

1.7. Network Service

1.7.1. API rules

Network service API entrance and API list:

- API entrance:

Region	API ENTRANCE
regionone	https://regionone.network.vling.io

- API list:

Resource	Operation	HTTP method	URI Path
Network	Check all the Networks	GET	/v2.0/networks
	Create Networks	POST	/v2.0/networks
	Check detailed information of Network	GET	/v2.0/networks/{network_id}
	Change Network name	PUT	/v2.0/networks/{network_id}
	Disable Network	PUT	/v2.0/networks/{network_id}
	Enable Network	PUT	/v2.0/networks/{network_id}
Subnet	Check all subnets	GET	/v2.0/subnets

Resource	Operation	HTTP method	URI Path
	Create subnet in a designated Network	POST	/v2.0/subnets
	Check detailed information of a subnet	GET	/v2.0/subnets/{subnet_id}
	Change name of subnet	PUT	/v2.0/subnets/{subnet_id}
	Disable/Enable DHCP service of subnet	PUT	/v2.0/subnets/{subnet_id}
	Delete subnet	DELETE	/v2.0/subnets/{subnet_id}
Router	Check all routers	GET	/v2.0/routers
	Create router	POST	/v2.0/routers
	Check router	GET	/v2.0/routers/{router_id}
	Change router name	PUT	/v2.0/routers/{router_id}
	Enable/Disable gateway of router	PUT	/v2.0/routers/{router_id}
	Attach subnet to router/ add router interface	PUT	/v2.0/routers/{router_id}/add_router_interface
	Detach subnet from router/ delete router interface	PUT	/v2.0/routers/{router_id}/remove_router_interface
Port Forwarding	Add port forwarding rule to router	PUT	/v2.0/uos_resources/{router_id}/add_router_portforwarding
	Delete one port forwarding rule	PUT	/v2.0/uos_resources/{router_id}/remove_router_portforwarding
	List port forwarding rule of router	GET	/v2.0/routers/{router_id}
Floating IP	Create floating IP	POST	/v2.0/floatingips
	Change bandwidth of floating IP	PUT	/v2.0/uos_resources/{floatingip_id}/update_floatingip_ratelimit
	Check detail information of floating IP	GET	/v2.0/floatingips/{floatingip_id}
	Attach floating IP to VNIC	PUT	/v2.0/floatingips/{floatingip_id}
	Detach floating IP from	PUT	/v2.0/floatingips/{floatingip_id}

Resource	Operation	HTTP method	URI Path
	VNIC		
	Delete floating IP	DELETE	/v2.0/floatingips/{floatingip_id}
VNIC	Check all VNIC	GET	/v2.0/ports
	Create VNIC in designated Network or subnet	POST	/v2.0/ports
	Check VNIC	GET	/v2.0/ports/{port_id}
	Change name of VNIC	PUT	/v2.0/ports/{port_id}
	Change security group of VNIC	PUT	/v2.0/ports/{port_id}
	Change allowed IP of VNIC	PUT	/v2.0/ports/{port_id}
	Enable/disable VNIC	PUT	/v2.0/ports/{port_id}
	Delete VNIC	DELETE	/v2.0/ports/{port_id}
Security Group	Check all security group	GET	/v2.0/security-groups
	Create security group	POST	/v2.0/security-groups
	Check security group	GET	/v2.0/security-groups/{security_group_id}
	Delete security group	DELETE	/v2.0/security-groups/{security_group_id}
	Check rules of security group	GET	/v2.0/security-group-rules
	Create rules of security group	POST	/v2.0/security-group-rules
	Check rule of security group	GET	/v2.0/security-group-rules/{rules-security-groups-id}
	Delete rule of security group	DELETE	/v2.0/security-group-rules/{rules-security-groups-id}
Load Balancer	Check all Load Balancer	GET	/v2.0/lbaas/loadbalancers
	Create Load Balancer	POST	/v2.0/lbaas/loadbalancers
	Change none-read-only attribute of Load Balancer	PUT	/v2.0/lbaas/loadbalancers/{loadbalancer_id}

Resource	Operation	HTTP method	URI Path
	Check detailed information of Load Balancer	GET	/v2.0/lbaas/loadbalancers/{loadbalancer_id}
	Delete Load Balancer	DELETE	/v2.0/lbaas/loadbalancers/{loadbalancer_id}
Listener	Check all Listener	GET	/v2.0/lbaas/listeners
	Check listener of designated Load Balancer	GET	/v2.0/lbaas/loadbalancers/{loadbalancer_id}/lbaas_listeners
	Create listener for designated Load Balancer	POST	/v2.0/lbaas/listeners
	Change none-read-only attribute of listener	PUT	/v2.0/lbaas/listeners/{listener_id}
	Check detailed information of listener	GET	/v2.0/lbaas/listeners/{listener_id}
	Delete listener	DELETE	/v2.0/lbaas/listeners/{listener_id}
L7 Policy	Check all L7 policies	GET	/v2.0/lbaas/l7policies
	Check L7 policies of designated listener	GET	/v2.0/lbaas/listeners/{listener_id}/lbaas_l7policies
	Create L7 policies for designated listener	POST	/v2.0/lbaas/l7policies
	Change none-read-only attribute of L7 policies	PUT	/v2.0/lbaas/l7policies/{l7policy_id}
	Check detailed information of L7 policies	GET	/v2.0/lbaas/l7policies/{l7policy_id}
	Delete L7 policies	DELETE	/v2.0/lbaas/l7policies/{l7policy_id}
L7 rule	Check L7 matching rules of designated L7 policy	GET	/v2.0/lbaas/l7policies/{l7policy_id}/rules
	Create L7 matching rule for designated L7 policy	POST	/v2.0/lbaas/l7policies/{l7policy_id}/rules
	Change none-read-only attribute of L7 matching rule	PUT	/v2.0/lbaas/l7policies/{l7policy_id}/rules/{l7rule_id}

Resource	Operation	HTTP method	URI Path
	Check detailed information of L7 matching rule	GET	/v2.0/lbaas/l7policies/{l7policy_id}/rules/{l7rule_id}
	Delete L7 matching rule	DELETE	/v2.0/lbaas/l7policies/{l7policy_id}/rules/{l7rule_id}
Resource Pool	Check all Pool	GET	/v2.0/lbaas/pools
	Create pool	POST	/v2.0/lbaas/pools.json
	Change none-read-only attribute of pool	PUT	/v2.0/lbaas/pools/{pool_id}
	Check detailed information of pool	GET	/v2.0/lbaas/pools/{pool_id}
	Delete pool	DELETE	/v2.0/lbaas/pools/{pool_id}
Member	Check all members of a pool	GET	/v2.0/lbaas/pools/{pool_id}/members
	Add member to a pool	POST	/v2.0/lbaas/pools/{pool_id}/members
	Change none-read-only attribute of a member	PUT	/v2.0/lbaas/pools/{pool_id}/members/{member_id}
	Check detailed information of members	GET	/v2.0/lbaas/pools/{pool_id}/members/{member_id}
	Delete member	DELETE	/v2.0/lbaas/pools/{pool_id}/members/{member_id}

1.7.2. Networks

1.7.2.1. Check all the Networks

HTTP method	URI Path	Description
GET	/v2.0/networks	Check all the Networks

Parameter of request

None.

Parameter of return

Field Name	Type	Description
------------	------	-------------

Field Name	Type	Description
status	string	Shows status of network, can be ACTIVE, DOWN, BUILD, ERROR
subnets	list	Subnets which are belongs to this Network
name	string	Name of the Network
admin_state_up	bool	Admin status of the Network
tenant_id	string	UUID of user who is in this Network
created_at	string	Time when the Network is created, in UTC time
uos:rate_limit	int	Speed limit, in Mbps, it is a expanded field, which does not exist in Openstack
router:external	bool	Is it a Public Network or not
shared	bool	Can it be shared between users?
id	string	The only UUID of the network

Example of request

```
$ curl -s \
  -X GET https://regionone.network.vling.io/v2.0/networks \
  -H "X-Auth-Token: 7a8ae42afbc14fe89a2e65788b79fc70" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" | python -m json.tool
```

Example of return:

```
{
  "networks": [
    {
      "admin_state_up": true,
      "created_at": "2016-09-05T07:32:57.000000",
      "id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51",
      "name": "Vanx-Canada",
      "provider:unmanaged_network": false,
      "router:external": true,
      "shared": false,
      "status": "ACTIVE",
      "subnets": [
        "00302982-cdf5-49d2-b837-b0a463dfd156",
        "2add15df-78ad-4255-a936-47f4d3a84e0c",
        "6d939407-9c4f-41fc-b5a4-1a1dc9d57529"
      ],
      "tenant_id": "6c7575d588084d03927a9cee851551a5",
      "uos:rate_limit": 600
    },
    {
      "admin_state_up": true,
      "created_at": "2016-09-05T07:32:57.000000",
      "id": "b16c51e5-2a3d-4c44-84eb-b35d3b9d42ef",
      "name": "shared",
      "provider:unmanaged_network": false,

```

```

"router:external": false,
"shared": true,
"status": "ACTIVE",
"subnets": [
  "4b384a14-de49-46ac-9c4d-bab75a8b81f9"
],
"tenant_id": "6c7575d588084d03927a9cee851551a5",
"uos:rate_limit": 1000
},
{
  "admin_state_up": true,
  "created_at": "2016-10-31T17:06:54.000000",
  "id": "f665f66c-1df2-4ed8-bd03-45a8d609818a",
  "name": "demo",
  "provider:unmanaged_network": false,
  "router:external": false,
  "shared": false,
  "status": "ACTIVE",
  "subnets": [
    "49082eb7-2b60-4cee-8553-9ccc06c99b84",
    "a8937133-7126-421f-8a3b-b2faad8a3b73"
  ],
  "tenant_id": "24be2887cf4b4dc88c4443a104268016",
  "uos:rate_limit": 600
}
]
}

```

1.7.2.2. Create Networks

HTTP method	URI Path	Description
POST	/v2.0/networks	Create Networks

Parameter of request

Parameter name	Type	Description
admin_state_up	bool	Admin status, default is "True", not recommended to modify
name	string	Network name, which has to be unique

Parameter of return

Field Name	Type	Description
status	string	Shows status of network, can be ACTIVE,DOWN,BUILD,ERROR
subnets	list	Subnets which are belongs to this Network
provider:unmanaged_network	bool	Is the network self-managed or not
name	string	Name of the Network

Field Name	Type	Description
admin_state_up	bool	Admin status of the Network
tenant_id	string	UUID of user who is in this Network
shared	bool	Can it be shared between users?
id	string	The only UUID of the network

Example of request

```
$ curl -s \
  -X POST https://regionone.network.vling.io/v2.0/networks \
  -H "X-Auth-Token: 7a8ae42afbc14fe89a2e65788b79fc70" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "network": {
      "name": "test",
      "admin_state_up": true
    }
  }' | python -m json.tool
```

Example of return:

```
{
  "network": {
    "admin_state_up": true,
    "id": "7148697f-0c19-4616-b99a-70a46227268f",
    "name": "test",
    "provider:unmanaged_network": false,
    "router:external": false,
    "shared": false,
    "status": "ACTIVE",
    "subnets": [],
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  }
}
```

1.7.2.3. Create Networks

HTTP method	URI Path	Description
POST	/v2.0/networks	Create Networks

Parameter of request

Parameter name	Type	Description
----------------	------	-------------

Parameter name	Type	Description
admin_state_up	bool	Network name, which has to be unique
name	string	Network name, which has to be unique
provider:unmanaged_network	bool	Whether it is self-managed network or not

Parameter of return

Field Name	Type	Description
status	string	Shows status of network, can be ACTIVE,DOWN,BUILD,ERROR
subnets	list	Subnets which are belongs to this Network
provider:unmanaged_network	bool	Is the network self-managed or not
name	string	Name of the Network
admin_state_up	bool	Admin status of the Network
tenant_id	string	UUID of user who is in this Network
shared	bool	Can it be shared between users?
id	string	The only UUID of the network

Example of request

```
$ curl -s \
  -X POST https://regionone.network.vling.io/v2.0/networks \
  -H "X-Auth-Token: 7a8ae42afbc14fe89a2e65788b79fc70" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{"network": {"name": "test-only", "admin_state_up": true,
"provider:unmanaged_network": true}}' | python -m json.tool
```

Example of return:

```
{
  "network": {
    "admin_state_up": true,
    "id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
    "name": "test-only",
    "provider:unmanaged_network": true,
    "router:external": false,
    "shared": false,
    "status": "ACTIVE",
    "subnets": [],
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  }
}
```

1.7.2.4. Check detailed information of Network

HTTP method	URI Path	Description
GET	/v2.0/networks/{network_id}	Check detailed information of Network

Parameter of request

None.

Parameter of return

Field Name	Type	Description
status	string	Shows status of network, can be ACTIVE,DOWN,BUILD,ERROR
subnets	list	Subnets which are belongs to this Network
name	string	Name of the Network
provider:unmanaged_network	bool	Is the network self-managed or not
admin_state_up	bool	Admin status of the Network
tenant_id	string	UUID of user who is in this Network
created_at	string	Time when the Network is created, in UTC time
uos:rate_limit	int	Speed limit, in Mbps, it is a expanded field, which does not exist in Openstack
router:external	bool	Is it a Public Network or not
shared	bool	Can it be shared between users?
id	string	The only UUID of the network

Example of request

```
$ curl -s \  
-X GET https://regionone.network.vling.io/v2.0/networks/da475a0d-1c32-4480-8d56-  
c0a953ddec3c \  
-H "X-Auth-Token: 7a8ae42afbc14fe89a2e65788b79fc70" \  
-H "Content-Type: application/json" \  
-H "Accept: application/json" | python -m json.tool
```

Example of return:

```
{
```



```

"network": {
  "admin_state_up": true,
  "created_at": "2016-11-16T22:05:06.000000",
  "id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
  "name": "test-only",
  "provider:unmanaged_network": true,
  "router:external": false,
  "shared": false,
  "status": "ACTIVE",
  "subnets": [],
  "tenant_id": "24be2887cf4b4dc88c4443a104268016",
  "uos:rate_limit": 600
}
}

```

1.7.2.5. Change Network name

HTTP method	URI Path	Description
PUT	/v2.0/networks/{network_id}	Change Network name

Parameter of request

Parameter name	Type	Description
name	string	Network name(it's OK to be not unique)

Parameter of return

Field Name	Type	Description
status	string	Shows status of network, can be ACTIVE,DOWN,BUILD,ERROR
subnets	list	Subnets which are belongs to this Network
name	string	Name of the Network
admin_state_up	bool	Admin status of the Network
tenant_id	string	UUID of user who is in this Network
created_at	string	Time when the Network is created, in UTC time
uos:rate_limit	int	Speed limit, in Mbps, it is a expanded field, which does not exist in Openstack
router:external	bool	Is it a Public Network or not
shared	bool	Can it be shared between users?
id	string	The only UUID of the network

Example of request

```
$ curl -s \
```

```
-X PUT https://regionone.network.vling.io/v2.0/networks/da475a0d-1c32-4480-8d56-
c0a953ddec3c \
-H "X-Auth-Token: 7a8ae42afbc14fe89a2e65788b79fc70" \
-H "Content-Type: application/json" \
-H "Accept: application/json" \
-d '{
  "network": {
    "name": "newtest"
  }
}' | python -m json.tool
```

Example of return:

```
{
  "network": {
    "admin_state_up": true,
    "created_at": "2016-11-16T22:05:06.000000",
    "id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
    "name": "newtest",
    "provider:unmanaged_network": true,
    "router:external": false,
    "shared": false,
    "status": "ACTIVE",
    "subnets": [],
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "uos:rate_limit": 600
  }
}
```

1.7.2.6. Disable Network

Instances which are powered on or rebooted after this operation cannot have access to Network, but can get IP address as usual.

HTTP method	URI Path	Description
PUT	/v2.0/networks/{network_id}	Disable Network

Parameter of request

Parameter name	Type	Description
admin_stat_up	string	False

Parameter of return

Field Name	Type	Description
status	string	Shows status of network, can be ACTIVE,DOWN,BUILD,ERROR
subnets	list	Subnets which are belongs to this Network

Field Name	Type	Description
name	string	Name of the Network
admin_state_up	bool	Admin status of the Network (it will be "False" after successful execution)
tenant_id	string	UUID of user who is in this Network
created_at	string	Time when the Network is created, in UTC time
uos:rate_limit	int	Speed limit, in Mbps, it is a expanded field, which does not exist in Openstack
router:external	bool	Is it a Public Network or not
shared	bool	Can it be shared between users?
id	string	The only UUID of the network

Example of request

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/networks/7148697f-0c19-4616-b99a-70a46227268f \
  -H "X-Auth-Token: 7a8ae42afbc14fe89a2e65788b79fc70" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "network": {
      "admin_state_up": "False"
    }
  }' | python -m json.tool
```

Example of return:

```
{
  "network": {
    "admin_state_up": false, <-----
    "created_at": "2016-11-16T21:57:54.000000",
    "id": "7148697f-0c19-4616-b99a-70a46227268f",
    "name": "test",
    "provider:unmanaged_network": false,
    "router:external": false,
    "shared": false,
    "status": "ACTIVE",
    "subnets": [],
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "uos:rate_limit": 600
  }
}
```

1.7.2.7. Enable Network

Instances which are powered on or rebooted after this operation will join Network again.

HTTP method	URI Path	Description
PUT	/v2.0/networks/{network_id}	Enable Network

Parameter of request

Parameter name	Type	Description
admin_stat_up	string	True

Parameter of return

Field Name	Type	Description
status	string	Shows status of network, can be ACTIVE,DOWN,BUILD,ERROR
subnets	list	Subnets which are belongs to this Network
name	string	Name of the Network
admin_state_up	bool	Admin status of the Network (it will be "True" after successful execution)
tenant_id	string	UUID of user who is in this Network
created_at	string	Time when the Network is created, in UTC time
uos:rate_limit	int	Speed limit, in Mbps, it is a expanded field, which does not exist in Openstack
router:external	bool	Is it a Public Network or not
shared	bool	Can it be shared between users?
id	string	The only UUID of the network

Example of request

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/networks/da475a0d-1c32-4480-8d56-
c0a953ddec3c \
  -H "X-Auth-Token: 7a8ae42afbc14fe89a2e65788b79fc70" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "network": {
      "admin_state_up": "True"
    }
  }' | python -m json.tool
```

Example of return:

```
{
```

```

"network": {
  "admin_state_up": true,          <-----
  "created_at": "2016-11-16T22:05:06.000000",
  "id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
  "name": "newtest",
  "provider:unmanaged_network": true,
  "router:external": false,
  "shared": false,
  "status": "ACTIVE",
  "subnets": [],
  "tenant_id": "24be2887cf4b4dc88c4443a104268016",
  "uos:rate_limit": 600
}
}

```

1.7.3. Subnets

1.7.3.1. Check all subnets

HTTP method	URI Path	Description
GET	/v2.0/subnets	Check all subnets

Parameter of request

None

Parameter of return

Field Name	Type	Description
name	string	Name of the subnet
enable_dhcp	bool	Whether start DHCP or not
network_id	string	UUID of Network which the subnet belongs to
tenant_id	string	UUID of user who is in the subnet
created_at	string	Time when the subnet is created, in UTC time.
dns_nameserver	list	Default DNS address of server in the subnet
ipv6_ra_mode	bool	Whether IPv6 RA is opened or not
allocation_pools	dict	Show start and end address of IP pool, using "start" and "end" button
gateway_ip	string	Gateway of subnet
shared	bool	Can it be shared between users?

Field Name	Type	Description
ip_version	int	Version of IP protocol
host_routes	list	Host routing information
cidr	string	CIDR address of subnet
ipv6_address_mode	bool	Whether get DHCP optional information from dnsmasq or not
id	string	The only UUID of the subnet

Example of request

```
$ curl -s \
  -X GET https://regionone.network.vling.io/v2.0/subnets \
  -H "X-Auth-Token: 7a8ae42afbc14fe89a2e65788b79fc70" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" | python -m json.tool
```

Example of return:

```
{
  "subnets": [
    {
      "allocation_pools": [
        {
          "end": "10.100.100.254",
          "start": "10.100.100.2"
        }
      ],
      "cidr": "10.100.100.0/24",
      "created_at": "2016-10-31T17:06:54.000000",
      "dns_nameservers": [
        "66.28.0.45",
        "66.28.0.61"
      ],
      "enable_dhcp": true,
      "gateway_ip": "10.100.100.1",
      "host_routes": [],
      "id": "49082eb7-2b60-4cee-8553-9ccc06c99b84",
      "ip_version": 4,
      "ipv6_address_mode": null,
      "ipv6_ra_mode": null,
      "name": "demo",
      "network_id": "f665f66c-1df2-4ed8-bd03-45a8d609818a",
      "shared": false,
      "tenant_id": "24be2887cf4b4dc88c4443a104268016",
      "uos:service_provider": ""
    },
    {
      "allocation_pools": [
        {
          "end": "172.30.251.254",
          "start": "172.30.248.3"
        }
      ]
    }
  ]
}
```

```

    ],
    "cidr": "172.30.248.0/22",
    "created_at": "2016-09-05T07:32:57.000000",
    "dns_nameservers": [
        "66.28.0.45",
        "66.28.0.61"
    ],
    "enable_dhcp": true,
    "gateway_ip": "172.30.248.2",
    "host_routes": [],
    "id": "4b384a14-de49-46ac-9c4d-bab75a8b81f9",
    "ip_version": 4,
    "ipv6_address_mode": null,
    "ipv6_ra_mode": null,
    "name": "SHARED_SUBNET",
    "network_id": "b16c51e5-2a3d-4c44-84eb-b35d3b9d42ef",
    "shared": true,
    "tenant_id": "6c7575d588084d03927a9cee851551a5",
    "uos:service_provider": ""
  },
  {
    "allocation_pools": [
      {
        "end": "172.16.5.254",
        "start": "172.16.5.2"
      }
    ],
    "cidr": "172.16.5.0/24",
    "created_at": "2016-11-09T19:10:51.000000",
    "dns_nameservers": [
        "66.28.0.45",
        "66.28.0.61"
    ],
    "enable_dhcp": true,
    "gateway_ip": "172.16.5.1",
    "host_routes": [],
    "id": "a8937133-7126-421f-8a3b-b2faad8a3b73",
    "ip_version": 4,
    "ipv6_address_mode": null,
    "ipv6_ra_mode": null,
    "name": "win7test",
    "network_id": "f665f66c-1df2-4ed8-bd03-45a8d609818a",
    "shared": false,
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "uos:service_provider": ""
  }
]
}

```

1.7.3.2. Create subnet in a designated Network

HTTP method	URI Path	Description
POST	/v2.0/subnets	Create subnet in a designated Network

Parameter of request

Field Name	Type	Description
------------	------	-------------

Field Name	Type	Description
name	string	Name of subnet
enable_dhcp	bool	Whether start DHCP or not
network_id	string	UUID of Network which the subnet belongs to
dns_nameserver	list	Default DNS address of server in the subnet
allocation_pools	dict	Show start and end address of IP pool, using “start” and “end” button
gateway_ip	string	Gateway of subnet
ip_version	int	VERSION OF IP PROTOCOL
host_routes	list	Host routing information
cidr	string	CIDR address of subnet

Parameter of return

Field Name	Type	Description
name	string	Name of subnet
enable_dhcp	bool	Whether start DHCP or not
network_id	string	UUID of Network which the subnet belongs to
tenant_id	string	UUID of user who is in the subnet
created_at	string	Time when the subnet is created, in UTC time.
dns_nameserver	list	Default DNS address of server in the subnet
ipv6_ra_mode	bool	Whether IPv6 RA is opened or not
allocation_pools	dict	Show start and end address of IP pool, using “start” and “end” button
gateway_ip	string	Gateway of subnet
shared	bool	Can it be shared between users?
ip_version	int	VERSION OF IP PROTOCOL
host_routes	list	Host routing information
cidr	string	CIDR address of subnet
ipv6_address_mode	bool	Whether get DHCP optional information from dnsmasq or not
id	string	The only UUID of the subnet

Example of request


```
$ curl -s \
-X POST https://regionone.network.vling.io/v2.0/subnets \
-H "X-Auth-Token: 8fcfb2ad691c417194b0ec2418217553" \
-H "Content-Type: application/json" \
-H "Accept: application/json" \
-d '{
  "subnet": {
    "network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
    "ip_version": 4,
    "cidr": "10.0.1.0/24",
    "name": "sub_newtest"
  }
}' | python -m json.tool
```

Example of return:

```
{
  "subnet": {
    "allocation_pools": [
      {
        "end": "10.0.1.254",
        "start": "10.0.1.2"
      }
    ],
    "cidr": "10.0.1.0/24",
    "created_at": "2016-11-16T22:48:13.354066",
    "dns_nameservers": [
      "66.28.0.45",
      "66.28.0.61"
    ],
    "enable_dhcp": true,
    "gateway_ip": "10.0.1.1",
    "host_routes": [],
    "id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192",
    "ip_version": 4,
    "ipv6_address_mode": null,
    "ipv6_ra_mode": null,
    "name": "sub_newtest",
    "network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
    "shared": false,
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "uos:service_provider": ""
  }
}
```

1.7.3.3. Check detailed information of a subnet

HTTP method	URI Path	Description
GET	/v2.0/subnets/{subnet_id}	Check detailed information of a subnet

Parameter of request

None

Parameter of return

Field Name	Type	Description
name	string	Name of subnet
enable_dhcp	bool	Whether start DHCP or not
network_id	string	UUID of Network which the subnet belongs to
tenant_id	string	UUID of user who is in the subnet
created_at	string	Time when the subnet is created, in UTC time.
dns_nameserver	list	Default DNS address of server in the subnet
ipv6_ra_mode	bool	Whether IPv6 RA is opened or not
allocation_pools	dict	Show start and end address of IP pool, using "start" and "end" button
gateway_ip	string	Gateway of subnet
shared	bool	Can it be shared between users?
ip_version	int	VERSION OF IP PROTOCOL
host_routes	list	Host routing information
cidr	string	CIDR address of subnet
ipv6_address_mode	bool	Whether get DHCP optional information from dnsmasq or not
id	string	The only UUID of the subnet

Example of request

```
$ curl -s \  
-X GET https://regionone.network.vling.io/v2.0/subnets/764d9c94-f02a-41fc-a7c7-  
bb2ee5e95192 \  
-H "X-Auth-Token: 8fcfb2ad691c417194b0ec2418217553" \  
-H "Content-Type: application/json" \  
-H "Accept: application/json" | python -m json.tool
```

Example of return:

```
{  
  "subnet": {  
    "allocation_pools": [  
      {  
        "end": "10.0.1.254",  
        "start": "10.0.1.2"  
      }  
    ],  
    "cidr": "10.0.1.0/24",  
    "created_at": "2016-11-16T22:48:13.000000",
```

```

    "dns_nameservers": [
      "66.28.0.45",
      "66.28.0.61"
    ],
    "enable_dhcp": true,
    "gateway_ip": "10.0.1.1",
    "host_routes": [],
    "id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192",
    "ip_version": 4,
    "ipv6_address_mode": null,
    "ipv6_ra_mode": null,
    "name": "sub_newtest",
    "network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
    "shared": false,
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "uos:service_provider": ""
  }
}

```

1.7.3.4. Change name of subnet

HTTP method	URI Path	Description
PUT	/v2.0/subnets/{subnet_id}	Change name of subnet

Parameter of request

Field Name	Type	Description
name	string	Name of subnet

Parameter of return

Field Name	Type	Description
name	string	Name of subnet
enable_dhcp	bool	Whether start DHCP or not
network_id	string	UUID of Network which the subnet belongs to
tenant_id	string	UUID of user who is in the subnet
created_at	string	Time when the subnet is created, in UTC time.
dns_nameserver	list	Default DNS address of server in the subnet
ipv6_ra_mode	bool	Whether IPv6 RA is opened or not
allocation_pools	dict	Show start and end address of IP pool, using "start" and "end" button
gateway_ip	string	Gateway of subnet
shared	bool	Can it be shared between users?

Field Name	Type	Description
ip_version	int	VERSION OF IP PROTOCOL
host_routes	list	Host routing information
cidr	string	CIDR address of subnet
ipv6_address_mode	bool	Whether get DHCP optional information from dnsmasq or not
id	string	The only UUID of the subnet

Example of request

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/subnets/764d9c94-f02a-41fc-a7c7-
bb2ee5e95192 \
  -H "X-Auth-Token: 8fcfb2ad691c417194b0ec2418217553" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "subnet": {
      "name": "sub_00_newtest"
    }
  }' | python -m json.tool
```

Example of return:

```
{
  "subnet": {
    "allocation_pools": [
      {
        "end": "10.0.1.254",
        "start": "10.0.1.2"
      }
    ],
    "cidr": "10.0.1.0/24",
    "created_at": "2016-11-16T22:48:13.000000",
    "dns_nameservers": [
      "66.28.0.45",
      "66.28.0.61"
    ],
    "enable_dhcp": true,
    "gateway_ip": "10.0.1.1",
    "host_routes": [],
    "id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192",
    "ip_version": 4,
    "ipv6_address_mode": null,
    "ipv6_ra_mode": null,
    "name": "sub_00_newtest",
    "network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
    "shared": false,
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "uos:service_provider": ""
  }
}
```

1.7.4. Routers

1.7.4.1. Check all routers

HTTP method	URI Path	Description
GET	/v2.0/routers	Check all routers

Parameter of request

None.

Parameter of return

Field Name	Type	Description
status	string	Status of virtual router
external_gateway_info	dict	External gateway information, including UUID and SNAT(start or not)
portforwardings	list	Port forwarding information, for detail please refer to "port forwarding"
name	string	Name of virtual router
admin_state_up	bool	Admin status of the virtual router
tenant_id	string	UUID of user who has this router
created_at	string	Time when the router is created, in UTC time.
routes	list	Static route
id	string	The only UUID of the virtual router

Example of request

```
$ curl -s \  
-X GET https://regionone.network.vling.io/v2.0/routers \  
-H "X-Auth-Token: 8fcfb2ad691c417194b0ec2418217553" \  
-H "Content-Type: application/json" \  
-H "Accept: application/json" | python -m json.tool
```

Example of return:

```
{  
  "routers": [  
    {  
      "admin_state_up": true,  
      "created_at": "2016-11-09T18:46:00.000000",  
      "external_gateway_info": {  
        "enable_snat": true,
```

```

        "network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51"
    },
    "id": "1d0a23e8-d5ad-45da-8fb6-ed01e5c41b5e",
    "name": "R2",
    "portforwardings": [],
    "routes": [],
    "status": "ACTIVE",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "tunnels": []
},
{
    "admin_state_up": true,
    "created_at": "2016-11-08T20:09:42.000000",
    "external_gateway_info": {
        "enable_snat": true,
        "network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51"
    },
    "id": "ea28ffd0-f0c2-4d43-9c2a-3dfb97856962",
    "name": "R01",
    "portforwardings": [
        {
            "id": "6f1ae9ee-dc14-4bf4-9f1b-356afbd9837c",
            "inside_addr": "10.100.100.11",
            "inside_port": 1723,
            "outside_port": 1723,
            "protocol": "TCP"
        }
    ],
    "routes": [],
    "status": "ACTIVE",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "tunnels": []
}
]
}

```

1.7.4.2. Create router

HTTP method	URI Path	Description
POST	/v2.0/routers	Create router

Parameter of request

Field Name	Type	Description
name	string	Name of router
admin_state_up	bool	Admin status of the virtual router
external_gateway_info	dict	External gateway information, include a parameter "network_id"

Parameter of return

Field Name	Type	Description
------------	------	-------------

Field Name	Type	Description
status	string	Status of virtual router
external_gateway_info	dict	External gateway information, including UUID and SNAT(start or not)
name	string	Name of virtual router
admin_state_up	bool	Admin status of the virtual router
tenant_id	string	UUID of user who has this router
id	string	The only UUID of the virtual router

Example of request

```
$ curl -s \
  -X POST https://regionone.network.vling.io/v2.0/routers \
  -H "X-Auth-Token: 8fcfb2ad691c417194b0ec2418217553" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "router": {
      "external_gateway_info": {
        "network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51"
      },
      "name": "R-test",
      "admin_state_up": true
    }
  }' | python -m json.tool
```

Example of return:

```
{
  "router": {
    "admin_state_up": true,
    "created_at": "2016-11-16T23:34:48.017179",
    "distributed": false,
    "external_gateway_info": {
      "enable_snat": true,
      "network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51"
    },
    "id": "6ec5ddd4-a76e-446c-b736-48cd207aadaa",
    "name": "R-test",
    "portforwardings": [],
    "routes": [],
    "status": "ACTIVE",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "tunnels": []
  }
}
```

1.7.4.3. Change router name

HTTP method	URI Path	Description
PUT	/v2.0/routers/{router_id}	Change router name

Parameter of request

Field Name	Type	Description
name	string	Name of router

Parameter of return

Field Name	Type	Description
status	string	Status of virtual router
external_gateway_info	dict	External gateway information, including UUID and SNAT(start or not)
portforwardings	list	Port forwarding information, for detail please refer to "port forwarding"
name	string	Name of virtual router
admin_state_up	bool	Admin status of the virtual router
tenant_id	string	UUID of user who has this router
created_at	string	Time when the router is created, in UTC time.
routes	list	Static routing information
id	string	The only UUID of the virtual router

Example of request

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/routers/6ec5ddd4-a76e-446c-b736-48cd207aadaa \
  -H "X-Auth-Token: 8fcfb2ad691c417194b0ec2418217553" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "router": {
      "name": "R03-test"
    }
  }' | python -m json.tool
```

Example of return:

```
{
  "router": {
```



```

    "admin_state_up": true,
    "created_at": "2016-11-16T23:34:48.000000",
    "distributed": false,
    "external_gateway_info": {
      "enable_snat": true,
      "network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51"
    },
    "id": "6ec5ddd4-a76e-446c-b736-48cd207aadaa",
    "name": "R03-test",
    "portforwardings": [],
    "routes": [],
    "status": "ACTIVE",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "tunnels": []
  }
}

```

1.7.4.4. Enable/Disable gateway of router

After this execution, all cross subnets data flow will be cut off.

HTTP method	URI Path	Description
PUT	/v2.0/routers/{router_id}	Enable/Disable gateway of router

Parameter of request

Field Name	Type	Description
admin_state_up	string	True/False

Parameter of return

Field Name	Type	Description
status	string	Status of virtual router
external_gateway_info	dict	External gateway information, including UUID and SNAT(start or not)
portforwardings	list	Port forwarding information, for detail please refer to "port forwarding"
name	string	Name of virtual router
admin_state_up	bool	Admin status of the virtual router
tenant_id	string	UUID of user who has this router
created_at	string	Time when the router is created, in UTC time.
routes	list	Static routes
id	string	The only UUID of the virtual router

Example of request

```

$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/routers/6ec5ddd4-a76e-446c-b736-48cd207aadaa \
  -H "X-Auth-Token: 8fcfb2ad691c417194b0ec2418217553" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "router": {
      "admin_state_up": "False"
    }
  }' | python -m json.tool

```

Example of return:

```

{
  "router": {
    "admin_state_up": false, <-----
    "created_at": "2016-11-16T23:34:48.000000",
    "distributed": false,
    "external_gateway_info": {
      "enable_snat": true,
      "network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51"
    },
    "id": "6ec5ddd4-a76e-446c-b736-48cd207aadaa",
    "name": "R03-test",
    "portforwardings": [],
    "routes": [],
    "status": "ACTIVE",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "tunnels": []
  }
}

```

1.7.4.5. Attach subnet to router/ add router interface

HTTP method	URI Path	Description
PUT	/v2.0/routers/{router_id}/add_router_interface	Attach subnet to router/ add router interface

Parameter of request

Field Name	Type	Description
subnet_id	string	UUID of subnet which you want to attach to Network

Parameter of return

Field Name	Type	Description
subnet_id	string	UUID of subnet which is attached to Network
tenant_id	string	UUID of user who has this router
port_id	string	UUID of virtual interface which is conneted

Field Name	Type	Description
id	string	The only UUID of the virtual router

Example of request:

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/routers/6ec5ddd4-a76e-446c-b736-48cd207aadaa/add_router_interface \
  -H "X-Auth-Token: b8e80a4b3d1b4a85a3ee254606d5599b" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192"
  }' | python -m json.tool
```

Example of return:

```
{
  "id": "6ec5ddd4-a76e-446c-b736-48cd207aadaa",
  "port_id": "bc80c7e5-192c-4624-ae1d-3901d3869206",
  "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016"
}
```

1.7.4.6. Detach subnet from router/ delete router interface

HTTP method	URI Path	Description
PUT	/v2.0/routers/{router_id}/remove_router_interface	Detach subnet from router/ delete router interface

Parameter of request

Field Name	Type	Description
subnet_id	string	UUID of subnet which will be detached

Parameter of return

Field Name	Type	Description
subnet_id	string	UUID of subnet which is detached
tenant_id	string	UUID of user who has this router
port_id	string	UUID of virtual interface which is detached
id	string	The only UUID of the virtual router

Example of request

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/routers/6ec5ddd4-a76e-446c-b736-48cd207aedaa/remove_router_interface \
  -H "X-Auth-Token: b8e80a4b3d1b4a85a3ee254606d5599b" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192"
  }' | python -m json.tool
```

Example of return:

```
{
  "id": "6ec5ddd4-a76e-446c-b736-48cd207aedaa",
  "port_id": "bfc6f73b-b1a1-41ff-bb63-939c76000398",
  "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016"
}
```

1.7.5. Port Forwarding

1.7.5.1. Add port forwarding rule to router

HTTP method	URI Path	Description
PUT	/v2.0/uos_resources/{router_id}/add_router_portforwarding	Add port forwarding rule to router

Parameter of request

Field Name	Type	Description
inside_addr	string	CIDR address of hosts in private network
protocol	string	Network Protocol
outside_port	int	Outbound port of virtual router
inside_port	int	instance port in private network

Parameter of return

Field Name	Type	Description
inside_addr	string	CIDR address of hosts in private network
protocol	string	Network Protocol
outside_port	int	Outbound port of virtual router

Field Name	Type	Description
inside_port	int	instance port in private network
id	string	UUID of this port forwarding rule

Example of request

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/uos_resources/6ec5ddd4-a76e-446c-b736-48cd207aadaa/add_router_portforwarding \
  -H "X-Auth-Token: b8e80a4b3d1b4a85a3ee254606d5599b" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "inside_addr": "10.0.1.1",
    "protocol": "TCP",
    "outside_port": 80,
    "inside_port": 80
  }' | python -m json.tool
```

Example of return:

```
{
  "id": "51022057-9a1b-4757-bb24-458363b1f4fb",
  "inside_addr": "10.0.1.1",
  "inside_port": 80,
  "outside_port": 80,
  "protocol": "TCP"
}
```

1.7.5.2. Delete one port forwarding rule

HTTP method	URI Path	Description
PUT	/v2.0/uos_resources/{router_id}/remove_router_portforwarding	Delete one port forwarding rule

Parameter of request

Field Name	Type	Description
id	string	UUID of port forwarding which will be deleted

Parameter of return

Field Name	Type	Description
inside_addr	string	CIDR address of hosts in private network
protocol	string	Network Protocol
outside_port	int	Outbound port of virtual router

Field Name	Type	Description
inside_port	int	instance port in private netowrk
id	string	UUID of this port forwarding rule
router_id	string	UUID of virtual router

Example of request

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/uos_resources/6ec5ddd4-a76e-446c-b736-48cd207aedaa/remove_router_portforwarding \
  -H "X-Auth-Token: b8e80a4b3d1b4a85a3ee254606d5599b" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "id": "51022057-9a1b-4757-bb24-458363b1f4fb"
  }' | python -m json.tool
```

Example of return:

```
{
  "id": "51022057-9a1b-4757-bb24-458363b1f4fb",
  "inside_addr": "10.0.1.1",
  "inside_port": 80,
  "outside_port": 80,
  "protocol": "TCP",
  "router_id": "6ec5ddd4-a76e-446c-b736-48cd207aedaa"
}
```

1.7.5.3. List port forwarding rule of router

HTTP method	URI Path	Description
GET	/v2.0/{routers/{router_id}}	List port forwarding rule of router

Parameter of request

None.

Parameter of return

Field Name	Type	Description
status	string	Status of virtual router
external_gateway_info	dict	External gateway information, including UUID and SNAT(start or not)

Field Name	Type	Description
portforwardings	list	Portforwarding information, please refer to returned information
name	string	Name of virtual router
admin_state_up	bool	Admin status of the virtual router
tenant_id	string	UUID of user who has this router
created_at	string	Time when the router is created, in UTC time.
routes	list	Static routes
id	string	The only UUID of the virtual router

Example of request

```
$ curl -s \
  -X GET https://regionone.network.vling.io/v2.0/routers/ea28ffd0-f0c2-4d43-9c2a-3dfb97856962 \
  -H "X-Auth-Token: b8e80a4b3d1b4a85a3ee254606d5599b" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" | python -m json.tool
```

Example of return:

```
{
  "router": {
    "admin_state_up": true,
    "created_at": "2016-11-08T20:09:42.000000",
    "external_gateway_info": {
      "enable_snat": true,
      "network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51"
    },
    "id": "ea28ffd0-f0c2-4d43-9c2a-3dfb97856962",
    "name": "R01",
    "portforwardings": [
      {
        "id": "6f1ae9ee-dc14-4bf4-9f1b-356afbd9837c",
        "inside_addr": "10.100.100.11",
        "inside_port": 1723,
        "outside_port": 1723,
        "protocol": "TCP"
      }
    ],
    "routes": [],
    "status": "ACTIVE",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "tunnels": []
  }
}
```

1.7.6. Floating IPs

1.7.6.1. Create floating IP

HTTP method	URI Path	Description
POST	/v2.0/floatingips	Create floating IP

Parameter of request

Field Name	Type	Description
floating_network_id	string	UUID of Network which the floating IP belongs to
rate_limit	string	Bandwidth of this IP, in Kbps
uos:name	string	User defined name of the IP

Parameter of return

Field Name	Type	Description
router_id	string	UUID of the router
status	string	Status of the floating IP
tenant_id	string	UUID of user who has the floating IP
created_at	string	Time when the floating IP was created, in UTC time
rate_limit	int	Speed limit of the floating IP
uos_name	string	User defined name of the floating IP
floating_network_id	string	UUID of Network which the floating IP belongs to
fixed_ip_address	string	fixed IP which is associated to the floating IP
floating_ip_address	string	CIDR address of floating IP
port_id	string	Port UUID
id	string	UUID of floating IP

Example of request

```
$ curl -s \  
-X POST https://regionone.network.vling.io/v2.0/floatingips \  
-H "X-Auth-Token: 385ae68141a54657a5d91c96545e5890" \  
-H "Content-Type: application/json" \  

```



```
-H "Accept: application/json" \
-d '{
  "floatingip": {
    "floating_network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51",
    "rate_limit": 2048,
    "uos:name": "2Mf_ip"
  }
}' | python -m json.tool
```

Example of return:

```
{
  "floatingip": {
    "created_at": "2016-11-17T01:05:47.618200",
    "fixed_ip_address": null,
    "floating_ip_address": "38.88.74.10",
    "floating_network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51",
    "floating_subnet_id": "6d939407-9c4f-41fc-b5a4-1a1dc9d57529",
    "floatingipset_id": null,
    "id": "bef456d7-a466-4126-81e9-46edd097c805",
    "port_id": null,
    "rate_limit": 2048,
    "router_id": null,
    "status": "DOWN",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "uos:name": "2Mf_ip",
    "uos:registerno": "",
    "uos:service_provider": ""
  }
}
```

1.7.6.2. Change bandwidth of floating IP

HTTP method	URI Path	Description
PUT	/v2.0/uos_resources/{floatingip_id}/update_floatingip_ratelimit	Change bandwidth of floating IP

Parameter of request

Field Name	Type	Description
floatingip_id	string	UUID of floating IP
rate_limit	int	Bandwidth of IP, in Kbps, it should increase by 1024.

Parameter of return

Field Name	Type	Description
id	string	UUID of floating IP
uos:name	string	User defined name of the floating IP

Field Name	Type	Description
uos:registerno	string	ICP number of the floating IP
status	string	Status of the floating IP
tenant_id	sting	UUID of user who has the floating IP
created_at	string	Time when the floating IP was created, in UTC time
router_id	string	UUID of the router
rate_limit	int	Speed limit of the floating IP
floating_ip_address	string	CIDR address of floating IP
floating_port_id	string	Port ID of floating IP
floating_network_id	string	UUID of Network which the floating IP belongs to
floating_subnet_id	string	UUID of the subnet which the floating IP belongs to
fixed_ip_address	string	fixed IP which is associated to the floating IP
port_id	sting	Port UUIP

Example of request

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/uos_resources/bef456d7-a466-4126-81e9-46edd097c805/update_floatingip_ratelimit \
  -H "X-Auth-Token: 385ae68141a54657a5d91c96545e5890" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "rate_limit": 10240
  }'
```

Example of return:

null

1.7.6.3. Check detail information of floating IP

HTTP method	URI Path	Description
GET	/v2.0/floatingips/{floatingip_id}	Check detail information of floating IP

Parameter of request

None.

Parameter of return

Field Name	Type	Description
router_id	string	UUID of the router
status	string	Status of the floating IP
tenant_id	string	UUID of user who has the floating IP
created_at	string	Time when the floating IP was created, in UTC time
rate_limit	int	Speed limit of the floating IP
uos:name	string	User defined name of floating IP
floating_network_id	string	UUID of Network which the floating IP belongs to
fixed_ip_address	string	fixed IP which is associated to the floating IP
floating_ip_address	string	CIDR address of floating IP
port_id	string	UUID of VNIC
id	string	UUID of floating IP

Example of request

```
$ curl -s \  
-X GET https://regionone.network.vling.io/v2.0/floatingips/bef456d7-a466-4126-81e9-46edd097c805 \  
-H "X-Auth-Token: 385ae68141a54657a5d91c96545e5890" \  
-H "Content-Type: application/json" \  
-H "Accept: application/json" | python -m json.tool
```

Example of return:

```
{  
  "floatingip": {  
    "created_at": "2016-11-17T01:05:47.000000",  
    "fixed_ip_address": null,  
    "floating_ip_address": "38.88.74.10",  
    "floating_network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51",  
    "floating_subnet_id": "6d939407-9c4f-41fc-b5a4-1a1dc9d57529",  
    "floatingipset_id": null,  
    "id": "bef456d7-a466-4126-81e9-46edd097c805",  
    "port_id": null,  
    "rate_limit": 10240,  
    "router_id": null,  
    "status": "DOWN",  
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",  
    "uos:name": "2Mf_ip",  
    "uos:registerno": "",  
    "uos:service_provider": ""  
  }  
}
```

```
}  
}
```

1.7.6.4. Attach floating IP to VNIC

HTTP method	URI Path	Description
PUT	/v2.0/floatingips/{floatingip_id}	Attach floating IP to VNIC

Parameter of request

Field Name	Type	Description
port_id	string	UUID of VNIC

Parameter of return

Field Name	Type	Description
router_id	string	UUID of the router
status	string	Status of the floating IP
tenant_id	string	UUID of user who has the floating IP
created_at	string	Time when the floating IP was created, in UTC time
rate_limit	int	Speed limit of the floating IP
uos:name	string	User defined name of the floating IP
floating_network_id	string	UUID of Network which the floating IP belongs to
fixed_ip_address	string	fixed IP which is associated to the floating IP
floating_ip_address	string	CIDR address of floating IP
port_id	string	VNIC UUID
id	string	UUID of floating IP

Example of request

```
$ curl -s \  
-X PUT https://regionone.network.vling.io/v2.0/floatingips/bef456d7-a466-4126-81e9-  
46edd097c805 \  
-H "X-Auth-Token: 7aae8e4391b54bd2a530963792d64b38" \  
-H "Content-Type: application/json" \  
-H "Accept: application/json" \  
-d '{  
    "floatingip": {  
        "port_id": "14e03b31-95b7-4f22-9c57-d62852f6ac5f"  
    }  
' | python -m json.tool
```

Example of return:

```
{
  "floatingip": {
    "created_at": "2016-11-17T01:05:47.000000",
    "fixed_ip_address": "10.100.100.2",
    "floating_ip_address": "38.88.74.10",
    "floating_network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51",
    "floating_subnet_id": "6d939407-9c4f-41fc-b5a4-1a1dc9d57529",
    "floatingipset_id": null,
    "id": "bef456d7-a466-4126-81e9-46edd097c805",
    "port_id": "14e03b31-95b7-4f22-9c57-d62852f6ac5f",
    "rate_limit": 10240,
    "router_id": "ea28ffd0-f0c2-4d43-9c2a-3dfb97856962",
    "status": "DOWN",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "uos:name": "2Mf_ip",
    "uos:registerno": "",
    "uos:service_provider": ""
  }
}
```

1.7.6.5. Detach floating IP from VNIC

HTTP method	URI Path	Description
PUT	/v2.0/floatingips/{floatingip_id}	Detach floating IP from VNIC

Parameter of request

Field Name	Type	Description
port_id	none	null

Parameter of return

Field Name	Type	Description
router_id	string	UUID of the router
status	string	Status of the floating IP
tenant_id	string	UUID of user who has the floating IP
created_at	string	Time when the floating IP was created, in UTC time
rate_limit	int	Speed limit of the floating IP
uos:name	string	User defined name of floating IP

Field Name	Type	Description
floating_network_id	string	UUID of Network which the floating IP belongs to
fixed_ip_address	string	fixed IP which is associated to the floating IP
floating_ip_address	string	CIDR address of floating IP
port_id	string	Port UUID (null)
id	string	UUID of floating IP

Example of request

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/floatingips/bef456d7-a466-4126-81e9-46edd097c805 \
  -H "X-Auth-Token: 7aae8e4391b54bd2a530963792d64b38" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "floatingip": {
      "port_id": null
    }
  }' | python -m json.tool
```

Example of return:

```
{
  "floatingip": {
    "created_at": "2016-11-17T01:05:47.000000",
    "fixed_ip_address": null,
    "floating_ip_address": "38.88.74.10",
    "floating_network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51",
    "floating_subnet_id": "6d939407-9c4f-41fc-b5a4-1a1dc9d57529",
    "floatingipset_id": null,
    "id": "bef456d7-a466-4126-81e9-46edd097c805",
    "port_id": null,
    "rate_limit": 10240,
    "router_id": null,
    "status": "ACTIVE",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016",
    "uos:name": "2Mf_ip",
    "uos:registerno": "",
    "uos:service_provider": ""
  }
}
```

1.7.6.6. Delete floating IP

HTTP method	URI Path	Description
DELETE	/v2.0/floatingips/{floatingip_id}	Delete floating IP

Parameter of request

None.

Parameter of return

None.

Example of request

```
$ curl -i \  
-X DELETE https://regionone.network.vling.io/v2.0/floatingips/4ba10fe5-7d9f-401b-a1e4-  
f61617f782f9 \  
-H "X-Auth-Token: 7aae8e4391b54bd2a530963792d64b38" \  
-H "Content-Type: application/json" \  
-H "Accept: application/json"
```

Example of return:

HTTP/1.1 204 No Content
Server: ngx_openresty
Date: Thu, 17 Nov 2016 17:32:45 GMT
Content-Length: 0
Connection: keep-alive

1.7.7. VNIC

1.7.7.1. Check all VNIC

HTTP method	URI Path	Description
GET	/v2.0/ports	Check all VNIC

Parameter of request

None.

Parameter of return

Field Name	Type	Description
------------	------	-------------

Field Name	Type	Description
status	string	Status of VNIC
name	string	User defined name of the VNIC
allowed_address_pairs	list	allowed_address_pairs list, it allows VNIC send out packages using other IP
admin_state_up	bool	Admin status of the VNIC
network_id	string	UUID of Network which the VNIC belongs to
tenant_id	string	UUID of user who has this VNIC
created_at	string	Time when the VNIC is created, in UTC time
binding:vnic_type	string	Type of VNIC, can be "Direct", "macvtap" or "normal"
device_owner	string	UUID of entity who use this VNIC
mac_address	string	MAC address of this VNIC
id	string	UUID of this VNIC
fixed_ips	dict	Fixed IP includes subnet UUID and CIDR address
extra_dhcp_opts	string	DHCP OPTIONS
security_groups	list	Security group info of the VNIC
device_id	string	UUID of devices which are using the VNIC. For example, Instances

Example of request

```
$ curl -s \
  -X GET https://regionone.network.vling.io/v2.0/ports \
  -H "X-Auth-Token: 7aae8e4391b54bd2a530963792d64b38" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" | python -m json.tool
```

Example of return:

```
{
  "ports": [
    {
      "admin_state_up": true,
      "allowed_address_pairs": [],
      "binding:disable_anti_spoofing": false,
      "binding:vnic_type": "normal",
      "created_at": "2016-11-09T19:11:09.000000",
      "device_id": "1d0a23e8-d5ad-45da-8fb6-ed01e5c41b5e",
      "device_owner": "network:router_interface",
      "extra_dhcp_opts": [],
      "fixed_ips": [
        {
```



```

        "ip_address": "172.16.5.1",
        "subnet_id": "a8937133-7126-421f-8a3b-b2faad8a3b73"
    }
],
    "id": "06a04a92-03dc-4847-a1d3-7808f3e4f188",
    "mac_address": "fa:16:3e:b9:47:bf",
    "name": "nic-06a04a92",
    "network_id": "f665f66c-1df2-4ed8-bd03-45a8d609818a",
    "security_groups": [],
    "status": "ACTIVE",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
    "admin_state_up": true,
    "allowed_address_pairs": [],
    "binding:disable_anti_spoofing": false,
    "binding:vnic_type": "normal",
    "created_at": "2016-10-31T17:07:33.000000",
    "device_id": "",
    "device_owner": "",
    "extra_dhcp_opts": [],
    "fixed_ips": [
        {
            "ip_address": "10.100.100.2",
            "subnet_id": "49082eb7-2b60-4cee-8553-9ccc06c99b84"
        }
    ],
    "id": "14e03b31-95b7-4f22-9c57-d62852f6ac5f",
    "mac_address": "fa:16:3e:3c:d8:ec",
    "name": "nic-14e03b31",
    "network_id": "f665f66c-1df2-4ed8-bd03-45a8d609818a",
    "security_groups": [
        "7f05677c-6266-4810-8eba-7eb607414215"
    ],
    "status": "DOWN",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
    "admin_state_up": true,
    "allowed_address_pairs": [],
    "binding:disable_anti_spoofing": false,
    "binding:vnic_type": "normal",
    "created_at": "2016-11-16T19:04:17.000000",
    "device_id": "",
    "device_owner": "",
    "extra_dhcp_opts": [],
    "fixed_ips": [
        {
            "ip_address": "172.16.5.6",
            "subnet_id": "a8937133-7126-421f-8a3b-b2faad8a3b73"
        }
    ],
    "id": "1b1a9c57-69a4-464c-9ece-db9048623114",
    "mac_address": "fa:16:3e:ff:bd:37",
    "name": "nic-1b1a9c57",
    "network_id": "f665f66c-1df2-4ed8-bd03-45a8d609818a",
    "security_groups": [
        "7f05677c-6266-4810-8eba-7eb607414215"
    ],
    "status": "DOWN",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{

```

```

"admin_state_up": true,
"allowed_address_pairs": [],
"binding:disable_anti_spoofing": false,
"binding:vnic_type": "normal",
"created_at": "2016-11-15T01:23:46.000000",
"device_id": "e34b32fa-2e22-40b9-bd17-b381f87407f0",
"device_owner": "compute:None",
"extra_dhcp_opts": [],
"fixed_ips": [
  {
    "ip_address": "10.100.100.12",
    "subnet_id": "49082eb7-2b60-4cee-8553-9ccc06c99b84"
  }
],
"id": "61f80925-e245-452c-97b1-3a058d07d3fc",
"mac_address": "fa:16:3e:41:f2:22",
"name": "nic-61f80925",
"network_id": "f665f66c-1df2-4ed8-bd03-45a8d609818a",
"security_groups": [
  "7f05677c-6266-4810-8eba-7eb607414215"
],
"status": "ACTIVE",
"tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
  "admin_state_up": true,
  "allowed_address_pairs": [],
  "binding:disable_anti_spoofing": false,
  "binding:vnic_type": "normal",
  "created_at": "2016-11-16T23:34:48.000000",
  "device_id": "6ec5ddd4-a76e-446c-b736-48cd207aadaa",
  "device_owner": "network:router_gateway",
  "extra_dhcp_opts": [],
  "fixed_ips": [
    {
      "ip_address": "240.1.0.170",
      "subnet_id": "00302982-cdf5-49d2-b837-b0a463dfd156"
    }
  ],
  "id": "78bfb6e6-fcd9-4461-8754-c9d5026cf248",
  "mac_address": "fa:16:3e:2b:1c:d9",
  "name": "24be2887cf4b4dc88c4443a104268016",
  "network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51",
  "security_groups": [],
  "status": "DOWN",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
  "admin_state_up": true,
  "allowed_address_pairs": [],
  "binding:disable_anti_spoofing": false,
  "binding:vnic_type": "normal",
  "created_at": "2016-11-04T20:53:21.000000",
  "device_id": "dhcpcb7c8c39d-a564-5e08-8683-a7b37ebcc8ea-f665f66c-1df2-4ed8-bd03-45a8d609818a",
  "device_owner": "network:dhcp",
  "extra_dhcp_opts": [],
  "fixed_ips": [
    {
      "ip_address": "10.100.100.5",
      "subnet_id": "49082eb7-2b60-4cee-8553-9ccc06c99b84"
    }
  ],
  {

```

```

        "ip_address": "172.16.5.3",
        "subnet_id": "a8937133-7126-421f-8a3b-b2faad8a3b73"
    }
],
"id": "79a53997-5b27-444f-edef-e769d3a5f919",
"mac_address": "fa:16:3e:82:e4:f8",
"name": "nic-79a53997",
"network_id": "f665f66c-1df2-4ed8-bd03-45a8d609818a",
"security_groups": [],
"status": "ACTIVE",
"tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
    "admin_state_up": true,
    "allowed_address_pairs": [],
    "binding:disable_anti_spoofing": false,
    "binding:vnic_type": "normal",
    "created_at": "2016-11-08T20:09:43.000000",
    "device_id": "ea28ffd0-f0c2-4d43-9c2a-3dfb97856962",
    "device_owner": "network:router_gateway",
    "extra_dhcp_opts": [],
    "fixed_ips": [
        {
            "ip_address": "240.1.0.163",
            "subnet_id": "00302982-cdf5-49d2-b837-b0a463dfd156"
        }
    ],
    "id": "82d9c5fb-2716-4359-9eb1-70fc07257a59",
    "mac_address": "fa:16:3e:64:e9:b4",
    "name": "24be2887cf4b4dc88c4443a104268016",
    "network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51",
    "security_groups": [],
    "status": "DOWN",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
    "admin_state_up": true,
    "allowed_address_pairs": [],
    "binding:disable_anti_spoofing": false,
    "binding:vnic_type": "normal",
    "created_at": "2016-11-09T19:11:37.000000",
    "device_id": "1ddd3551-3d53-42a5-96f1-abd421bb646a",
    "device_owner": "compute:None",
    "extra_dhcp_opts": [],
    "fixed_ips": [
        {
            "ip_address": "172.16.5.4",
            "subnet_id": "a8937133-7126-421f-8a3b-b2faad8a3b73"
        }
    ],
    "id": "8c325185-7690-4e86-86cc-106d35245c55",
    "mac_address": "fa:16:3e:f1:11:b2",
    "name": "nic-8c325185",
    "network_id": "f665f66c-1df2-4ed8-bd03-45a8d609818a",
    "security_groups": [
        "7f05677c-6266-4810-8eba-7eb607414215"
    ],
    "status": "ACTIVE",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
    "admin_state_up": true,
    "allowed_address_pairs": [],

```

```

"binding:disable_anti_spoofing": false,
"binding:vnic_type": "normal",
"created_at": "2016-11-16T17:52:34.000000",
"device_id": "ea28ffd0-f0c2-4d43-9c2a-3dfb97856962",
"device_owner": "network:router_interface",
"extra_dhcp_opts": [],
"fixed_ips": [
  {
    "ip_address": "10.100.100.1",
    "subnet_id": "49082eb7-2b60-4cee-8553-9ccc06c99b84"
  }
],
"id": "8f95028e-1285-4744-946d-61032d1de626",
"mac_address": "fa:16:3e:eb:b9:b0",
"name": "nic-8f95028e",
"network_id": "f665f66c-1df2-4ed8-bd03-45a8d609818a",
"security_groups": [],
"status": "ACTIVE",
"tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
  "admin_state_up": true,
  "allowed_address_pairs": [],
  "binding:disable_anti_spoofing": false,
  "binding:vnic_type": "normal",
  "created_at": "2016-11-16T17:50:15.000000",
  "device_id": "",
  "device_owner": "",
  "extra_dhcp_opts": [],
  "fixed_ips": [
    {
      "ip_address": "172.16.5.5",
      "subnet_id": "a8937133-7126-421f-8a3b-b2faad8a3b73"
    }
  ],
  "id": "8fc61700-f584-44d6-9470-054fd3b1fe84",
  "mac_address": "fa:16:3e:bb:d5:bc",
  "name": "nic-8fc61700",
  "network_id": "f665f66c-1df2-4ed8-bd03-45a8d609818a",
  "security_groups": [
    "7f05677c-6266-4810-8eba-7eb607414215"
  ],
  "status": "DOWN",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
  "admin_state_up": true,
  "allowed_address_pairs": [],
  "binding:disable_anti_spoofing": false,
  "binding:vnic_type": "normal",
  "created_at": "2016-11-08T20:08:21.000000",
  "device_id": "24b3f7bd-b15f-4f63-96e9-e93dbf7d5edb",
  "device_owner": "compute:None",
  "extra_dhcp_opts": [],
  "fixed_ips": [
    {
      "ip_address": "10.100.100.11",
      "subnet_id": "49082eb7-2b60-4cee-8553-9ccc06c99b84"
    }
  ],
  "id": "ad44802b-cc71-4827-9e19-32a8b3d88431",
  "mac_address": "fa:16:3e:ff:77:9e",
  "name": "nic-ad44802b",

```

```

"network_id": "f665f66c-1df2-4ed8-bd03-45a8d609818a",
"security_groups": [
  "7f05677c-6266-4810-8eba-7eb607414215"
],
"status": "ACTIVE",
"tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
  "admin_state_up": true,
  "allowed_address_pairs": [],
  "binding:disable_anti_spoofing": false,
  "binding:vnic_type": "normal",
  "created_at": "2016-11-09T18:46:00.000000",
  "device_id": "1d0a23e8-d5ad-45da-8fb6-ed01e5c41b5e",
  "device_owner": "network:router_gateway",
  "extra_dhcp_opts": [],
  "fixed_ips": [
    {
      "ip_address": "240.1.0.164",
      "subnet_id": "00302982-cdf5-49d2-b837-b0a463dfd156"
    }
  ],
  "id": "bce08759-78ae-4fef-8196-5537e38f3a72",
  "mac_address": "fa:16:3e:c6:cc:9b",
  "name": "24be2887cf4b4dc88c4443a104268016",
  "network_id": "27de81a3-0e44-4ba0-8088-02e61cdd6f51",
  "security_groups": [],
  "status": "DOWN",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
  "admin_state_up": true,
  "allowed_address_pairs": [],
  "binding:disable_anti_spoofing": true,
  "binding:vnic_type": "normal",
  "created_at": "2016-11-17T00:35:40.000000",
  "device_id": "6ec5ddd4-a76e-446c-b736-48cd207aadaa",
  "device_owner": "network:router_interface",
  "extra_dhcp_opts": [],
  "fixed_ips": [
    {
      "ip_address": "10.0.1.1",
      "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192"
    }
  ],
  "id": "d27b7786-b55f-4214-b82f-926ea4ff39f7",
  "mac_address": "fa:16:3e:1a:07:79",
  "name": "nic-d27b7786",
  "network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
  "security_groups": [],
  "status": "ACTIVE",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
  "admin_state_up": true,
  "allowed_address_pairs": [],
  "binding:disable_anti_spoofing": false,
  "binding:vnic_type": "normal",
  "created_at": "2016-10-31T17:07:33.000000",
  "device_id": "dhcp18df1b29-e7b9-556d-b7c2-3029ded28c3b-f665f66c-1df2-4ed8-bd03-45a8d609818a",
  "device_owner": "network:dhcp",
  "extra_dhcp_opts": [],

```

```

"fixed_ips": [
  {
    "ip_address": "10.100.100.3",
    "subnet_id": "49082eb7-2b60-4cee-8553-9ccc06c99b84"
  },
  {
    "ip_address": "172.16.5.2",
    "subnet_id": "a8937133-7126-421f-8a3b-b2faad8a3b73"
  }
],
"id": "e73897bf-11a9-4a26-a4b2-7f098efe0055",
"mac_address": "fa:16:3e:31:94:61",
"name": "nic-e73897bf",
"network_id": "f665f66c-1df2-4ed8-bd03-45a8d609818a",
"security_groups": [],
"status": "ACTIVE",
"tenant_id": "24be2887cf4b4dc88c4443a104268016"
}
]
}

```

1.7.7.2. Create VNIC in designated Network or subnet

HTTP method	URI Path	Description
POST	/v2.0/ports	Create VNIC in designated Network or subnet

Parameter of request

Field Name	Type	Description
name	string	User defined name of the VNIC
network_id	string	UUID of Network which the VNIC will attach to

Parameter of return

Field Name	Type	Description
status	string	Status of VNIC
name	string	User defined name of the VNIC
allowed_address_pairs	list	allowed_address_pairs list, it allows VNIC send out packages using other IP
admin_state_up	bool	Admin status of the VNIC
network_id	string	UUID of Network which the VNIC belongs to
tenant_id	string	UUID of user who has this VNIC
created_at	string	Time when the VNIC is created, in UTC time
binding:vnic_type	string	Type of VNIC, can be "Direct", "macvtap" or "normal"

Field Name	Type	Description
device_owner	string	UUID of entity who use this VNIC
mac_address	string	MAC address of this VNIC
id	string	UUID of this VNIC
fixed_ips	dict	Fixed IP includes subnet UUID and CIDR address
security_groups	list	Security group info of the VNIC
device_id	string	UUID of devices which are using the VNIC. For example, Instances

Example of request by using network_uuid

```
$ curl -s \
  -X POST https://regionone.network.vling.io/v2.0/ports \
  -H "X-Auth-Token: ac9b2d962d4a4352894bc5a46f8e50c5" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "port": {
      "name": "newvnic",
      "network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c"
    }
  }' | python -m json.tool
```

Example of return:

```
{
  "port": {
    "admin_state_up": true,
    "allowed_address_pairs": [],
    "binding:disable_anti_spoofing": true,
    "binding:vnic_type": "normal",
    "device_id": "",
    "device_owner": "",
    "fixed_ips": [
      {
        "ip_address": "10.0.1.8",
        "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192"
      }
    ],
    "id": "29e9d151-2417-4a9b-914d-b89d63acaa0a",
    "mac_address": "fa:16:3e:85:e4:1f",
    "name": "newvnic",
    "network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
    "security_groups": [
      "7f05677c-6266-4810-8eba-7eb607414215"
    ],
    "status": "DOWN",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  }
}
```

Example of request by using subnet_uuid

```
$ curl -s \  
-X POST https://regionone.network.vling.io/v2.0/ports \  
-H "X-Auth-Token: ac9b2d962d4a4352894bc5a46f8e50c5" \  
-H "Content-Type: application/json" \  
-H "Accept: application/json" \  
-d '{  
  "port": {  
    "name": "2ndNewVnic",  
    "network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",  
    "fixed_ips": [  
      {  
        "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192"  
      }  
    ],  
    "admin_state_up": true  
  }  
' | python -m json.tool
```

Example of return:

```
{  
  "port": {  
    "admin_state_up": true,  
    "allowed_address_pairs": [],  
    "binding:disable_anti_spoofing": true,  
    "binding:vnic_type": "normal",  
    "device_id": "",  
    "device_owner": "",  
    "fixed_ips": [  
      {  
        "ip_address": "10.0.1.9",  
        "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192"  
      }  
    ],  
    "id": "e3f401e6-d00a-477d-8812-2d494fb69e22",  
    "mac_address": "fa:16:3e:da:94:4c",  
    "name": "2ndNewVnic",  
    "network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",  
    "security_groups": [  
      "7f05677c-6266-4810-8eba-7eb607414215"  
    ],  
    "status": "DOWN",  
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"  
  }  
}
```

1.7.7.3. Check VNIC

HTTP method	URI Path	Description
GET	/v2.0/ports/{port_id}	Check VNIC

Parameter of request

None.

Parameter of return

Field Name	Type	Description
status	string	Status of VNIC
name	string	User defined name of the VNIC
allowed_address_pairs	list	allowed_address_pairs list, it allows VNIC send out packages using other IP
admin_state_up	bool	Admin status of the VNIC
network_id	string	UUID of Network which the VNIC belongs to
tenant_id	string	UUID of user who has this VNIC
created_at	string	Time when the VNIC is created, in UTC time
binding:vnic_type	string	Type of VNIC, can be "Direct", "macvtap" or "normal"
device_owner	string	UUID of entity who use this VNIC
mac_address	string	MAC address of this VNIC
id	string	UUID of this VNIC
fixed_ips	dict	Fixed IP includes subnet UUID and CIDR address
extra_dhcp_opts	string	DHCP OPTIONS
security_groups	list	Security group info of the VNIC
device_id	string	UUID of devices which are using the VNIC. For example, Instances

Example of request

```
$ curl -s \  
  -X GET https://regionone.network.vling.io/v2.0/ports/e3f401e6-d00a-477d-8812-  
2d494fb69e22 \  
  -H "X-Auth-Token: ac9b2d962d4a4352894bc5a46f8e50c5" \  
  -H "Content-Type: application/json" \  
  -H "Accept: application/json" | python -m json.tool
```

Example of return:

```
{  
  "port": {  
    "admin_state_up": true,  
    "allowed_address_pairs": [],  
    "binding:disable_anti_spoofing": true,  
    "binding:vnic_type": "normal",
```

```

"created_at": "2016-11-17T18:16:53.000000",
"device_id": "",
"device_owner": "",
"extra_dhcp_opts": [],
"fixed_ips": [
  {
    "ip_address": "10.0.1.9",
    "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192"
  }
],
"id": "e3f401e6-d00a-477d-8812-2d494fb69e22",
"mac_address": "fa:16:3e:da:94:4c",
"name": "2ndNewVnic",
"network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
"security_groups": [
  "7f05677c-6266-4810-8eba-7eb607414215"
],
"status": "DOWN",
"tenant_id": "24be2887cf4b4dc88c4443a104268016"
}
}

```

1.7.7.4. Change security limitation of VNIC

HTTP method	URI Path	Description
PUT	/v2.0/ports/{port_id}	Change security limitation of VNIC

Parameter of request

Field Name	Type	Description
disable_anti_spoofing	bool	VNIC security limitation

Parameter of return

Field Name	Type	Description
status	string	Status of VNIC
name	string	User defined name of the VNIC
allowed_address_pairs	list	allowed_address_pairs list, it allows VNIC send out packages using other IP
admin_state_up	bool	Admin status of the VNIC
binding:disable_anti_spoofing	bool	Security status of VNIC
network_id	string	UUID of Network which the VNIC belongs to
tenant_id	string	UUID of user who has this VNIC
created_at	string	Time when the VNIC is created, in UTC time

Field Name	Type	Description
binding:vnic_type	string	Type of VNIC, can be "Direct", "macvtap" or "normal"
device_owner	string	UUID of entity who use this VNIC
mac_address	string	MAC address of this VNIC
id	string	UUID of this VNIC
fixed_ips	dict	Fixed IP includes subnet UUID and CIDR address
extra_dhcp_opts	string	DHCP OPTIONS
security_groups	list	Security group info of the VNIC
device_id	string	UUID of devices which are using the VNIC. For example, Instances

Example of request

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/ports/e3f401e6-d00a-477d-8812-2d494fb69e22 \
  -H "X-Auth-Token: ac9b2d962d4a4352894bc5a46f8e50c5" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "port": {
      "binding:disable_anti_spoofing": "True"
    }
  }' | python -m json.tool
```

Example of return:

```
{
  "port": {
    "admin_state_up": true,
    "allowed_address_pairs": [],
    "binding:disable_anti_spoofing": true,
    "binding:vnic_type": "normal",
    "created_at": "2016-11-17T18:16:53.000000",
    "device_id": "",
    "device_owner": "",
    "extra_dhcp_opts": [],
    "fixed_ips": [
      {
        "ip_address": "10.0.1.9",
        "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192"
      }
    ],
    "id": "e3f401e6-d00a-477d-8812-2d494fb69e22",
    "mac_address": "fa:16:3e:da:94:4c",
    "name": "2ndNewVnic",
    "network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
    "security_groups": [
      "7f05677c-6266-4810-8eba-7eb607414215"
    ]
  },
}
```

```

    "status": "DOWN",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  }
}

```

1.7.7.5. Change name of VNIC

HTTP method	URI Path	Description
PUT	/v2.0/ports/{port_id}	Change name of VNIC

Parameter of request

Field Name	Type	Description
name	string	User Defined name of VNIC

Parameter of return

Field Name	Type	Description
status	string	Status of VNIC
name	string	User defined name of the VNIC
allowed_address_pairs	list	allowed_address_pairs list, it allows VNIC send out packages using other IP
admin_state_up	bool	Admin status of the VNIC
network_id	string	UUID of Network which the VNIC belongs to
tenant_id	string	UUID of user who has this VNIC
created_at	string	Time when the VNIC is created, in UTC time
binding:vnic_type	string	Type of VNIC, can be "Direct", "macvtap" or "normal"
device_owner	string	UUID of entity who use this VNIC
mac_address	string	MAC address of this VNIC
id	string	UUID of this VNIC
fixed_ips	dict	Fixed IP includes subnet UUID and CIDR address
extra_dhcp_opts	string	DHCP OPTIONS
security_groups	list	Security group info of the VNIC
device_id	string	UUID of devices which are using the VNIC. For example, Instances

Example of request

```

$ curl -s \
-X PUT https://regionone.network.vling.io/v2.0/ports/e3f401e6-d00a-477d-8812-2d494fb69e22 \
-H "X-Auth-Token: ac9b2d962d4a4352894bc5a46f8e50c5" \
-H "Content-Type: application/json" \
-H "Accept: application/json" \
-d '{
  "port": {
    "name": "3rdNewVNIC"
  }
}' | python -m json.tool

```

Example of return:

```

{
  "port": {
    "admin_state_up": true,
    "allowed_address_pairs": [],
    "binding:disable_anti_spoofing": true,
    "binding:vnic_type": "normal",
    "created_at": "2016-11-17T18:16:53.000000",
    "device_id": "",
    "device_owner": "",
    "extra_dhcp_opts": [],
    "fixed_ips": [
      {
        "ip_address": "10.0.1.9",
        "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192"
      }
    ],
    "id": "e3f401e6-d00a-477d-8812-2d494fb69e22",
    "mac_address": "fa:16:3e:da:94:4c",
    "name": "3rdNewVNIC",
    "network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
    "security_groups": [
      "7f05677c-6266-4810-8eba-7eb607414215"
    ],
    "status": "DOWN",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  }
}

```

1.7.7.6. Change security group of VNIC

HTTP method	URI Path	Description
PUT	/v2.0/ports/{port_id}	Change security group of VNIC

Parameter of request

Field Name	Type	Description
security_groups	list	New security group applied to this VNIC

Parameter of return

Field Name	Type	Description
status	string	Status of VNIC
name	string	User defined name of the VNIC
allowed_address_pairs	list	allowed_address_pairs list, it allows VNIC send out packages using other IP
admin_state_up	bool	Admin status of the VNIC
network_id	string	UUID of Network which the VNIC belongs to
tenant_id	string	UUID of user who has this VNIC
created_at	string	Time when the VNIC is created, in UTC time
binding:vnic_type	string	Type of VNIC, can be "Direct", "macvtap" or "normal"
device_owner	string	UUID of entity who use this VNIC
mac_address	string	MAC address of this VNIC
id	string	UUID of this VNIC
fixed_ips	dict	Fixed IP includes subnet UUID and CIDR address
extra_dhcp_opts	string	DHCP OPTIONS
security_groups	list	Security group info of the VNIC
device_id	string	UUID of devices which are using the VNIC. For example, Instances

Example of request

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/ports/e3f401e6-d00a-477d-8812-
  2d494fb69e22 \
  -H "X-Auth-Token: ac9b2d962d4a4352894bc5a46f8e50c5" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "port": {
      "security_groups": [
        "f28ea457-68a9-4675-a7d6-385c6c8083ad"
      ]
    }
  }' | python -m json.tool
```

Example of return:

```
{
  "port": {
    "admin_state_up": true,
```

```

"allowed_address_pairs": [],
"binding:disable_anti_spoofing": true,
"binding:vnic_type": "normal",
"created_at": "2016-11-17T18:16:53.000000",
"device_id": "",
"device_owner": "",
"extra_dhcp_opts": [],
"fixed_ips": [
  {
    "ip_address": "10.0.1.9",
    "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192"
  }
],
"id": "e3f401e6-d00a-477d-8812-2d494fb69e22",
"mac_address": "fa:16:3e:da:94:4c",
"name": "3rdNewVNIC",
"network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
"security_groups": [
  "f28ea457-68a9-4675-a7d6-385c6c8083ad"
],
"status": "DOWN",
"tenant_id": "24be2887cf4b4dc88c4443a104268016"
}
}

```

1.7.7.7. Change allowed IP of VNIC

HTTP method	URI Path	Description
PUT	/v2.0/ports/{port_id}	Change allowed IP of VNIC

Parameter of request

Field Name	Type	Description
allowed_address_pairs	list	IP-MAC pairs in VNIC, which are not assigned by system, but are allowed to send packages

Parameter of return

Field Name	Type	Description
status	string	Status of VNIC
name	string	User defined name of the VNIC
allowed_address_pairs	list	allowed_address_pairs list, it allows VNIC send out packages using other IP
admin_state_up	bool	Admin status of the VNIC
network_id	string	UUID of Network which the VNIC belongs to
tenant_id	string	UUID of user who has this VNIC
created_at	string	Time when the VNIC is created, in UTC time

Field Name	Type	Description
binding:vnic_type	string	Type of VNIC, can be "Direct", "macvtap" or "normal"
device_owner	string	UUID of entity who use this VNIC
mac_address	string	MAC address of this VNIC
id	string	UUID of this VNIC
fixed_ips	dict	Fixed IP includes subnet UUID and CIDR address
extra_dhcp_opts	string	DHCP OPTIONS
security_groups	list	Security group info of the VNIC
device_id	string	UUID of devices which are using the VNIC. For example, Instances

Example of request

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/ports/e3f401e6-d00a-477d-8812-
  2d494fb69e22 \
  -H "X-Auth-Token: ac9b2d962d4a4352894bc5a46f8e50c5" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "port": {
      "allowed_address_pairs": [
        {
          "ip_address": "10.10.11.5",
          "mac_address": "fa:16:3e:da:94:4c"
        },
        {
          "ip_address": "10.10.11.6"
        }
      ]
    }
  }' | python -m json.tool
```

Example of return:

```
{
  "port": {
    "admin_state_up": true,
    "allowed_address_pairs": [
      {
        "ip_address": "10.10.11.5",
        "mac_address": "fa:16:3e:da:94:4c"
      },
      {
        "ip_address": "10.10.11.6",
        "mac_address": "fa:16:3e:da:94:4c"
      }
    ]
  }
}
```



```

    }
  ],
  "binding:disable_anti_spoofing": true,
  "binding:vnic_type": "normal",
  "created_at": "2016-11-17T18:16:53.000000",
  "device_id": "",
  "device_owner": "",
  "extra_dhcp_opts": [],
  "fixed_ips": [
    {
      "ip_address": "10.0.1.9",
      "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192"
    }
  ],
  "id": "e3f401e6-d00a-477d-8812-2d494fb69e22",
  "mac_address": "fa:16:3e:da:94:4c",
  "name": "3rdNewVNIC",
  "network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
  "security_groups": [
    "f28ea457-68a9-4675-a7d6-385c6c8083ad"
  ],
  "status": "DOWN",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016"
}
}

```

1.7.7.8. Enable/disable VNIC

HTTP method	URI Path	Description
PUT	/v2.0/ports/{port_id}	Enable/disable VNIC

Parameter of request

Field Name	Type	Description
admin_state_up	bool	True/False

Parameter of return

Field Name	Type	Description
status	string	Status of VNIC
name	string	User defined name of the VNIC
allowed_address_pairs	list	allowed_address_pairs list, it allows VNIC send out packages using other IP
admin_state_up	bool	Admin status of the VNIC
network_id	string	UUID of Network which the VNIC belongs to
tenant_id	string	UUID of user who has this VNIC
created_at	string	Time when the VNIC is created, in UTC time

Field Name	Type	Description
binding:vnic_type	string	Type of VNIC, can be "Direct", "macvtap" or "normal"
device_owner	string	UUID of entity who use this VNIC
mac_address	string	MAC address of this VNIC
id	string	UUID of this VNIC
fixed_ips	dict	Fixed IP includes subnet UUID and CIDR address
extra_dhcp_opts	string	DHCP OPTIONS
security_groups	list	Security group info of the VNIC
device_id	string	UUID of devices which are using the VNIC. For example, Instances

Example of request

```
$ curl -s \
  -X PUT https://regionone.network.vling.io/v2.0/ports/e3f401e6-d00a-477d-8812-
  2d494fb69e22 \
  -H "X-Auth-Token: ac9b2d962d4a4352894bc5a46f8e50c5" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "port": {
      "admin_state_up": "true"
    }
  }'| python -m json.tool
```

Example of return:

```
{
  "port": {
    "admin_state_up": true,      <-----
    "allowed_address_pairs": [
      {
        "ip_address": "10.10.11.5",
        "mac_address": "fa:16:3e:da:94:4c"
      },
      {
        "ip_address": "10.10.11.6",
        "mac_address": "fa:16:3e:da:94:4c"
      }
    ],
    "binding:disable_anti_spoofing": true,
    "binding:vnic_type": "normal",
    "created_at": "2016-11-17T18:16:53.000000",
    "device_id": "",
    "device_owner": "",
    "extra_dhcp_opts": [],
    "fixed_ips": [
      {
        "ip_address": "10.0.1.9",
        "subnet_id": "764d9c94-f02a-41fc-a7c7-bb2ee5e95192"
      }
    ]
  }
}
```

```

    }
  ],
  "id": "e3f401e6-d00a-477d-8812-2d494fb69e22",
  "mac_address": "fa:16:3e:da:94:4c",
  "name": "3rdNewVNIC",
  "network_id": "da475a0d-1c32-4480-8d56-c0a953ddec3c",
  "security_groups": [
    "f28ea457-68a9-4675-a7d6-385c6c8083ad"
  ],
  "status": "DOWN",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016"
}
}

```

1.7.7.9. Delete VNIC

HTTP method	URI Path	Description
DELETE	/v2.0/ports/{port_id}	Delete VNIC

Parameter of request

None.

Parameter of return

None.

Example of request

```

$ curl -i \
  -X DELETE https://regionone.network.vling.io/v2.0/ports/e3f401e6-d00a-477d-8812-2d494fb69e22 \
  -H "X-Auth-Token: 4151ff726056446e8796aaaf2b90feef" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json"

```

Example of return:

```

HTTP/1.1 204 No Content
Server: ngx_openresty
Date: Thu, 17 Nov 2016 19:16:34 GMT
Content-Length: 0
Connection: keep-alive

```

1.7.8. Security Groups

1.7.8.1. Check all security group

HTTP method	URI Path	Description
GET	/v2.0/security-groups	Check all security group

Parameter of request

None.

Parameter of return

Field Name	Type	Description
description	string	Description of the security group
tenant_id	string	UUID of users of the security group
created_at	string	Time when the Security group is created, in UTC time
security_group_rules	string	Security group rules, please refer to API of security for detailed information.
id	string	UUID of security group
name	string	User defined name of security group

Example of request

```
$ curl -s \  
-X GET https://regionone.network.vling.io/v2.0/security-groups \  
-H "X-Auth-Token: 4151ff726056446e8796aaaf2b90feef" \  
-H "Content-Type: application/json" \  
-H "Accept: application/json" | python -m json.tool
```

Example of return:

```
{  
  "security_groups": [  
    {  
      "created_at": "2016-10-31T17:06:11.000000",  
      "description": "default",  
      "id": "7f05677c-6266-4810-8eba-7eb607414215",  
      "name": "default",  
      "security_group_rules": [  
        {  
          "direction": "ingress",  
          "ethertype": "IPv4",  
          "id": "1623b53e-0aa2-4cdc-8caf-95cca9ae26fa",  
          "port_range_max": 0,  
          "port_range_min": 8,  
          "protocol": "icmp",
```

```

    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "5e86f711-4ad5-43fe-88e3-69cbcl1f71a83",
    "port_range_max": 443,
    "port_range_min": 443,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "5f9f54fc-33cf-4caf-9343-270e2c1fea85",
    "port_range_max": 22,
    "port_range_min": 22,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "egress",
    "ethertype": "IPv4",
    "id": "7dfed79e-6443-4db9-b44e-e89107cd7b4a",
    "port_range_max": null,
    "port_range_min": null,
    "protocol": null,
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "ac85bb13-6db3-4d81-92c2-2aa40757f838",
    "port_range_max": 3389,
    "port_range_min": 3389,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "b9e3581e-2a10-4b0a-b911-1b50a2bbd3cd",
    "port_range_max": 80,
    "port_range_min": 80,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",

```

```

        "tenant_id": "24be2887cf4b4dc88c4443a104268016"
    },
    {
        "direction": "ingress",
        "ethertype": "IPv4",
        "id": "e4368df5-c8c0-45d0-ad7f-a598a92c6196",
        "port_range_max": null,
        "port_range_min": null,
        "protocol": null,
        "remote_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
        "remote_ip_prefix": null,
        "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
        "tenant_id": "24be2887cf4b4dc88c4443a104268016"
    }
],
"tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
    "created_at": "2016-11-17T18:36:51.000000",
    "description": "for testing only",
    "id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
    "name": "test_group",
    "security_group_rules": [
        {
            "direction": "ingress",
            "ethertype": "IPv4",
            "id": "03a5d2bf-176e-42b3-9de4-df49c54a3418",
            "port_range_max": 3389,
            "port_range_min": 3389,
            "protocol": "tcp",
            "remote_group_id": null,
            "remote_ip_prefix": null,
            "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
            "tenant_id": "24be2887cf4b4dc88c4443a104268016"
        },
        {
            "direction": "ingress",
            "ethertype": "IPv4",
            "id": "231a26dd-df2e-4f38-b851-111e699e4d0b",
            "port_range_max": 80,
            "port_range_min": 80,
            "protocol": "tcp",
            "remote_group_id": null,
            "remote_ip_prefix": null,
            "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
            "tenant_id": "24be2887cf4b4dc88c4443a104268016"
        },
        {
            "direction": "ingress",
            "ethertype": "IPv4",
            "id": "58c688a3-e163-4965-9f4a-0a6e5fff1a51",
            "port_range_max": 0,
            "port_range_min": 8,
            "protocol": "icmp",
            "remote_group_id": null,
            "remote_ip_prefix": null,
            "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
            "tenant_id": "24be2887cf4b4dc88c4443a104268016"
        }
    ],
    {
        "direction": "ingress",
        "ethertype": "IPv4",
        "id": "5e0071c2-b6ed-4a0f-a28c-ea55ab68e203",

```

```

        "port_range_max": 22,
        "port_range_min": 22,
        "protocol": "tcp",
        "remote_group_id": null,
        "remote_ip_prefix": null,
        "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
        "tenant_id": "24be2887cf4b4dc88c4443a104268016"
    },
    {
        "direction": "ingress",
        "ethertype": "IPv4",
        "id": "6159580d-6654-4cca-83fb-0ead553b5457",
        "port_range_max": 443,
        "port_range_min": 443,
        "protocol": "tcp",
        "remote_group_id": null,
        "remote_ip_prefix": null,
        "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
        "tenant_id": "24be2887cf4b4dc88c4443a104268016"
    },
    {
        "direction": "egress",
        "ethertype": "IPv4",
        "id": "6fa04e7d-482a-49da-8ea3-f581664af70c",
        "port_range_max": null,
        "port_range_min": null,
        "protocol": null,
        "remote_group_id": null,
        "remote_ip_prefix": null,
        "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
        "tenant_id": "24be2887cf4b4dc88c4443a104268016"
    },
    {
        "direction": "ingress",
        "ethertype": "IPv4",
        "id": "a20e2bc5-1ab2-4238-9f2b-e1a1d2a96724",
        "port_range_max": 21,
        "port_range_min": 21,
        "protocol": "tcp",
        "remote_group_id": null,
        "remote_ip_prefix": null,
        "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
        "tenant_id": "24be2887cf4b4dc88c4443a104268016"
    }
],
"tenant_id": "24be2887cf4b4dc88c4443a104268016"
}
]
}

```

1.7.8.2. Create security group

HTTP method	URI Path	Description
POST	/v2.0/security-groups	Create security group

Parameter of request

Field Name	Type	Description
description	string	Description of the security group
name	string	User defined name of security group

Parameter of return

Field Name	Type	Description
description	string	Description of the security group
tenant_id	string	UUID of users of the security group
security_group_rules	string	Security group rules, please refer to API of security for detailed information.
id	string	UUID of security group
name	string	User defined name of security group

Example of request

```
$ curl -s \
  -X POST https://regionone.network.vling.io/v2.0/security-groups \
  -H "X-Auth-Token: 4151fff726056446e8796aaaf2b90feef" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "security_group": {
      "name": "new-sg",
      "description": "Another Security Group for test"
    }
  }' | python -m json.tool
```

Example of return:

```
{
  "security_group": {
    "description": "Another Security Group for test",
    "id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",
    "name": "new-sg",
    "security_group_rules": [
      {
        "direction": "egress",
        "ethertype": "IPv4",
        "id": "05f0365d-5b35-4376-9541-457a6a11c312",
        "port_range_max": null,
        "port_range_min": null,
        "protocol": null,
        "remote_group_id": null,
        "remote_ip_prefix": null,
        "security_group_id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",
        "tenant_id": "24be2887cf4b4dc88c4443a104268016"
      },
      {
        "direction": "ingress",
        "ethertype": "IPv4",
```



```

    "id": "4553302d-0de5-453e-9362-ccf01ea096b2",
    "port_range_max": 0,
    "port_range_min": 8,
    "protocol": "icmp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "208e9930-5699-43c3-9ef7-730b2f6cf70e",
    "port_range_max": 80,
    "port_range_min": 80,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "cebd24cc-3792-4586-b870-1eaaba40cce9",
    "port_range_max": 443,
    "port_range_min": 443,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "c5395255-2c10-4d7b-8785-0bc8ebc2c59c",
    "port_range_max": 22,
    "port_range_min": 22,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "0d5aefeb-b701-439b-a80c-8eb23267ded3",
    "port_range_max": 3389,
    "port_range_min": 3389,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  }
],
"tenant_id": "24be2887cf4b4dc88c4443a104268016"
}
}

```

1.7.8.3. Check security group

HTTP method	URI Path	Description
GET	/v2.0/security-groups/{security_group_id}	Check security group

Parameter of request

None.

Parameter of return

Field Name	Type	Description
description	string	Description of the security group
tenant_id	string	UUID of users of the security group
created_at	string	Time when the Security group is created, in UTC time
security_group_rules	string	Security group rules, please refer to API of security for detailed information.
id	string	UUID of security group
name	string	User defined name of security group

Example of request

```
$ curl -s \  
  -X GET https://regionone.network.vling.io/v2.0/security-groups/fd7b7552-28ff-4880-9dc0-810b255b6b40 \  
  -H "X-Auth-Token: 4151ff726056446e8796aaaf2b90feef" \  
  -H "Content-Type: application/json" \  
  -H "Accept: application/json" | python -m json.tool
```

Example of return:

```
{  
  "security_group": {  
    "created_at": "2016-11-17T19:27:24.000000",  
    "description": "Another Security Group for test",  
    "id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",  
    "name": "new-sg",  
    "security_group_rules": [  
      {  
        "direction": "egress",  
        "ethertype": "IPv4",  
        "id": "05f0365d-5b35-4376-9541-457a6a11c312",  
        "port_range_max": null,  
        "port_range_min": null,  
        "protocol": null,  
        "remote_group_id": null,  
        "remote_ip_prefix": null,  
      }  
    ]  
  }  
}
```

```

    "security_group_id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "0d5aefeb-b701-439b-a80c-8eb23267ded3",
    "port_range_max": 3389,
    "port_range_min": 3389,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "208e9930-5699-43c3-9ef7-730b2f6cf70e",
    "port_range_max": 80,
    "port_range_min": 80,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "4553302d-0de5-453e-9362-ccf01ea096b2",
    "port_range_max": 0,
    "port_range_min": 8,
    "protocol": "icmp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "c5395255-2c10-4d7b-8785-0bc8ebc2c59c",
    "port_range_max": 22,
    "port_range_min": 22,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "cedb24cc-3792-4586-b870-1eaaba40cce9",
    "port_range_max": 443,
    "port_range_min": 443,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "fd7b7552-28ff-4880-9dc0-810b255b6b40",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  }
}

```

```

    ],
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  }
}

```

1.7.8.4. Delete security group

HTTP method	URI Path	Description
DELETE	/v2.0/security-groups/{security_group_id}	Delete security group

Parameter of request

None.

Parameter of return

None.

Example of request

```

$ curl -s \
  -X DELETE https://regionone.network.vling.io/v2.0/security-groups/fd7b7552-28ff-4880-
9dc0-810b255b6b40 \
  -H "X-Auth-Token: 4151ff726056446e8796aaaf2b90feef" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json"

```

Example of return:

None

1.7.8.5. Check rules of security group

HTTP method	URI Path	Description
GET	/v2.0/security-group-rules	Check rules of security group

Parameter of request

None.

Parameter of return

Field Name	Type	Description
remote_group_id	string	UUID of Remote Group
direction	string	Direction of data, ingress or egress
protocol	string	Type of protocol
tenant_id	string	UUID of user who has the security group rules
port_range_max	string	Upper limit of port range
security_group_id	string	UUID of Security Group
port_range_min	string	Lower limit of port range
remote_ip_prefix	string	Prefix of remote IP
id	string	UUID of the Security Group
ethertype	string	IPType of protocol

Example of request

```
$ curl -s \  
-X GET https://regionone.network.vling.io/v2.0/security-group-rules \  
-H "X-Auth-Token: 4151ff726056446e8796aaaf2b90feef" \  
-H "Content-Type: application/json" \  
-H "Accept: application/json" | python -m json.tool
```

Example of return:

```
{  
  "security_group_rules": [  
    {  
      "direction": "ingress",  
      "ethertype": "IPv4",  
      "id": "03a5d2bf-176e-42b3-9de4-df49c54a3418",  
      "port_range_max": 3389,  
      "port_range_min": 3389,  
      "protocol": "tcp",  
      "remote_group_id": null,  
      "remote_ip_prefix": null,  
      "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",  
      "tenant_id": "24be2887cf4b4dc88c4443a104268016"  
    },  
    {  
      "direction": "ingress",  
      "ethertype": "IPv4",  
      "id": "1623b53e-0aa2-4cdc-8caf-95cca9ae26fa",  
      "port_range_max": 0,  
      "port_range_min": 8,  
      "protocol": "icmp",  
      "remote_group_id": null,  
    }  
  ]  
}
```

```

    "remote_ip_prefix": null,
    "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "231a26dd-df2e-4f38-b851-111e699e4d0b",
    "port_range_max": 80,
    "port_range_min": 80,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "58c688a3-e163-4965-9f4a-0a6e5fff1a51",
    "port_range_max": 0,
    "port_range_min": 8,
    "protocol": "icmp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "5e0071c2-b6ed-4a0f-a28c-ea55ab68e203",
    "port_range_max": 22,
    "port_range_min": 22,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "5e86f711-4ad5-43fe-88e3-69cbc1f71a83",
    "port_range_max": 443,
    "port_range_min": 443,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "5f9f54fc-33cf-4caf-9343-270e2c1fea85",
    "port_range_max": 22,
    "port_range_min": 22,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  }
}

```

```

},
{
  "direction": "ingress",
  "ethertype": "IPv4",
  "id": "6159580d-6654-4cca-83fb-0ead553b5457",
  "port_range_max": 443,
  "port_range_min": 443,
  "protocol": "tcp",
  "remote_group_id": null,
  "remote_ip_prefix": null,
  "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
  "direction": "egress",
  "ethertype": "IPv4",
  "id": "6fa04e7d-482a-49da-8ea3-f581664af70c",
  "port_range_max": null,
  "port_range_min": null,
  "protocol": null,
  "remote_group_id": null,
  "remote_ip_prefix": null,
  "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
  "direction": "egress",
  "ethertype": "IPv4",
  "id": "7dfed79e-6443-4db9-b44e-e89107cd7b4a",
  "port_range_max": null,
  "port_range_min": null,
  "protocol": null,
  "remote_group_id": null,
  "remote_ip_prefix": null,
  "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
  "direction": "ingress",
  "ethertype": "IPv4",
  "id": "a20e2bc5-1ab2-4238-9f2b-e1a1d2a96724",
  "port_range_max": 21,
  "port_range_min": 21,
  "protocol": "tcp",
  "remote_group_id": null,
  "remote_ip_prefix": null,
  "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
  "direction": "ingress",
  "ethertype": "IPv4",
  "id": "ac85bb13-6db3-4d81-92c2-2aa40757f838",
  "port_range_max": 3389,
  "port_range_min": 3389,
  "protocol": "tcp",
  "remote_group_id": null,
  "remote_ip_prefix": null,
  "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
  "tenant_id": "24be2887cf4b4dc88c4443a104268016"
},
{
  "direction": "ingress",

```

```

    "ethertype": "IPv4",
    "id": "b9e3581e-2a10-4b0a-b911-1b50a2bbd3cd",
    "port_range_max": 80,
    "port_range_min": 80,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": null,
    "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  },
  {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "e4368df5-c8c0-45d0-ad7f-a598a92c6196",
    "port_range_max": null,
    "port_range_min": null,
    "protocol": null,
    "remote_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
    "remote_ip_prefix": null,
    "security_group_id": "7f05677c-6266-4810-8eba-7eb607414215",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  }
]
}

```

1.7.8.6. Create rules of security group

HTTP method	URI Path	Description
POST	/v2.0/security-group-rules	Create rules of security group

Parameter of request

Field Name	Type	Description
remote_group_id	string	UUID of Remote Group
direction	string	Direction of data, ingress or egress
protocol	string	Type of protocol
port_range_max	string	Upper limit of port range
security_group_id	string	UUID of Security Group
port_range_min	string	Lower limit of port range
remote_ip_prefix	string	Prefix of remote IP
ethertype	string	IPType of protocol

Parameter of return

Field Name	Type	Description
------------	------	-------------

Field Name	Type	Description
remote_group_id	string	UUID of Remote Group
direction	string	Direction of data, ingress or egress
protocol	string	Type of protocol
tenant_id	string	UUID of user who has the security group rules
port_range_max	string	Upper limit of port range
security_group_id	string	UUID of Security Group
port_range_min	string	Lower limit of port range
remote_ip_prefix	string	Prefix of remote IP
id	string	UUID of the Security Group
ethertype	string	IPType of protocol

Example of request

```
$ curl -s \
  -X POST https://regionone.network.vling.io/v2.0/security-group-rules \
  -H "X-Auth-Token: 4151ff726056446e8796aaaf2b90feef" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -d '{
    "security_group_rule": {
      "direction": "ingress",
      "port_range_min": "3306",
      "remote_ip_prefix": "0.0.0.0",
      "ethertype": "IPv4",
      "port_range_max": "3306",
      "protocol": "tcp",
      "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad"
    }
  }' | python -m json.tool
```

Example of return:

```
{
  "security_group_rule": {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "2b6dc4b1-b8f3-4f8b-b523-960154bdcd17",
    "port_range_max": 3306,
    "port_range_min": 3306,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": "0.0.0.0/32",
    "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
```

```

    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  }
}

```

1.7.8.7. Check rule of security group

HTTP method	URI Path	Description
GET	/v2.0/security-group-rules/{rules-security-groups-id}	Check rule of security group

Parameter of request

None.

Parameter of return

Field Name	Type	Description
remote_group_id	string	UUID of Remote Group
direction	string	Direction of data, ingress or egress
protocol	string	Type of protocol
tenant_id	string	UUID of user who has the security group rules
port_range_max	string	Upper limit of port range
security_group_id	string	UUID of Security Group
port_range_min	string	Lower limit of port range
remote_ip_prefix	string	Prefix of remote IP
id	string	UUID of the Security Group
ethertype	string	IPType of protocol

Example of request

```

$ curl -s \
  -X GET https://regionone.network.vling.io/v2.0/security-group-rules/2b6dc4b1-b8f3-4f8b-
b523-960154bdcd17 \
  -H "X-Auth-Token: b9f3b46080b24f818a8bbe5328b82982" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" | python -m json.tool

```

Example of return:

```

{
  "security_group_rule": {
    "direction": "ingress",
    "ethertype": "IPv4",
    "id": "2b6dc4b1-b8f3-4f8b-b523-960154bdcd17",
    "port_range_max": 3306,
    "port_range_min": 3306,
    "protocol": "tcp",
    "remote_group_id": null,
    "remote_ip_prefix": "0.0.0.0/32",
    "security_group_id": "f28ea457-68a9-4675-a7d6-385c6c8083ad",
    "tenant_id": "24be2887cf4b4dc88c4443a104268016"
  }
}

```

1.7.8.8. Delete rule of security group

HTTP method	URI Path	Description
DELETE	/v2.0/security-group-rules/{rules-security-groups-id}	Delete rule of security group

Parameter of request

None.

Parameter of return

None.

Example of request

```

$ curl -s \
  -X DELETE https://regionone.network.vling.io/v2.0/security-group-rules/a20e2bc5-1ab2-
4238-9f2b-e1a1d2a96724 \
  -H "X-Auth-Token: e99d38ba22a549cbad2216752aa458ac" \
  -H "Content-Type: application/json" \
  -H "Accept: application/json"

```

Example of return:

NONE

1.8. Image Service

1.8.1. API rules

Image service API entrance and API list:

- API entrance:

regionone	API Entrance
regionone	https://regionone.image.vling.io

- API list:

Resource	Operation	HTTP Method	URI Path
Images	Check all images	GET	/v2/images
	Check designated image	GET	/v2/images/{image_id}
	Update image	PATCH	/v2/images/{image_id}
	Delete image (instance snapshot)	DELETE	/v2/images/{image_id}

1.8.2. Images

1.8.2.1. Check all images

HTTP Method	URI Path	Description
GET	/v2/images	Check all images

Example of request

```
$ curl -s \  
-X GET https://regionone.image.vling.io/v2/images \  
-H "Content-Type: application/json" \  
-H "X-Auth-Token: c9c1d542220a48819653c9e191d49164" | python -m json.tool
```

Example of return:

HTTP/1.1 200

```
{  
  "first": "/v2/images",  
  "images": [  
    {  
      "base_image_ref": "be306076-6acb-4e05-9e15-6a8a52fa5d32",  
      "container_format": "bare",  
      "created_at": "2016-11-09T17:57:28Z",  
      "direct_url": "rbd://27d39faa-48ae-4356-a8e3-19d5b81e179e/openstack-00/829f445f-  
981e-4cf1-b9bd-75c5731b0805_disk/3445c04be6ca4ec7ad51f7e3f1ebff93",  
      "disk_format": "raw",  
      "expected_size": "20",
```

```

"file": "/v2/images/473d850e-9e7b-40f3-a3cd-7f75529077c5/file",
"id": "473d850e-9e7b-40f3-a3cd-7f75529077c5",
"image_build_version": "2014-12-30-a",
"image_label": "Debian",
"image_label_order": "150",
"image_location": "snapshot",
"image_meta": "{\"os_username\":\"root\", \"os_password\":\"Y1lrfdXL\"}",
"image_name_order": "200",
"image_state": "available",
"image_type": "snapshot",
"image_version": "7.6-64bit",
"instance_id": "829f445f-981e-4cf1-b9bd-75c5731b0805",
"instance_type_ephemeral_gb": "0",
"instance_type_flavorid": "06b954af-791b-4a63-85be-16c25e115b13",
"instance_type_id": "2",
"instance_type_memory_mb": "1024",
"instance_type_name": "micro-2",
"instance_type_root_gb": "20",
"instance_type_rxtx_factor": "1.0",
"instance_type_swap": "0",
"instance_type_vcpus": "1",
"instance_uuid": "829f445f-981e-4cf1-b9bd-75c5731b0805",
"min_disk": 20,
"min_ram": 0,
"myvar": "foobar",
"name": "foo-image",
"network_allocated": "True",
"owner": "24be2887cf4b4dc88c4443a104268016",
"owner_id": "24be2887cf4b4dc88c4443a104268016",
"protected": false,
"schema": "/v2/schemas/image",
"self": "/v2/images/473d850e-9e7b-40f3-a3cd-7f75529077c5",
"size": 21474836480,
"status": "active",
"tags": [],
"updated_at": "2016-11-09T17:57:31Z",
"user_id": "a89c9bbf798c420d8035bd6b01863939",
"visibility": "private"
},
.....
{
"container_format": "bare",
"created_at": "2016-08-30T10:46:52Z",
"direct_url": "rbd://27d39faa-48ae-4356-a8e3-19d5b81e179e/openstack-00/7deca9e1-
fe84-4bd3-a241-6d9a7b1469eb/snap",
"disk_format": "raw",
"expected_size": "20",
"file": "/v2/images/7deca9e1-fe84-4bd3-a241-6d9a7b1469eb/file",
"id": "7deca9e1-fe84-4bd3-a241-6d9a7b1469eb",
"image_build_version": "2016-03-02-a",
"image_label": "CentOS",
"image_label_order": "100",
"image_meta": "{\"os_username\":\"root\", \"os_password\":\"UdQGtYlhHj\"}",
"image_name_order": "100",
"image_type": "distribution",
"image_version": "6.5-64bit",
"min_disk": 0,
"min_ram": 0,
"name": "CentOS 6.5 64bit",
"owner": "6c7575d588084d03927a9cee851551a5",
"protected": false,
"schema": "/v2/schemas/image",
"self": "/v2/images/7deca9e1-fe84-4bd3-a241-6d9a7b1469eb",

```

```

        "size": 21474836480,
        "status": "active",
        "tags": [],
        "updated_at": "2016-08-30T10:48:05Z",
        "visibility": "public"
    }
],
"next": "/v2/images?marker=7deca9e1-fe84-4bd3-a241-6d9a7b1469eb",
"schema": "/v2/schemas/images"
}

```

1.8.2.2. Check designated image

HTTP Method	URI Path	Description
GET	/v2/images/{image_id}	Check designated image

Example of request

```

$ curl -s \
  -X GET https://regionone.image.vling.io/v2/images/7deca9e1-fe84-4bd3-a241-6d9a7b1469eb \
  -H "Content-Type: application/json" \
  -H "X-Auth-Token: c9c1d542220a48819653c9e191d49164" | python -m json.tool

```

Example of return:

```

HTTP/1.1 200
{
  "container_format": "bare",
  "created_at": "2016-08-30T10:46:52Z",
  "direct_url": "rbd://27d39faa-48ae-4356-a8e3-19d5b81e179e/openstack-00/7deca9e1-fe84-4bd3-a241-6d9a7b1469eb/snap",
  "disk_format": "raw",
  "expected_size": "20",
  "file": "/v2/images/7deca9e1-fe84-4bd3-a241-6d9a7b1469eb/file",
  "id": "7deca9e1-fe84-4bd3-a241-6d9a7b1469eb",
  "image_build_version": "2016-03-02-a",
  "image_label": "CentOS",
  "image_label_order": "100",
  "image_meta": "{\"os_username\":\"root\", \"os_password\":\"UdQGtYlhHj\"}",
  "image_name_order": "100",
  "image_type": "distribution",
  "image_version": "6.5-64bit",
  "min_disk": 0,
  "min_ram": 0,
  "name": "CentOS 6.5 64bit",
  "owner": "6c7575d588084d03927a9cee851551a5",
  "protected": false,
  "schema": "/v2/schemas/image",
  "self": "/v2/images/7deca9e1-fe84-4bd3-a241-6d9a7b1469eb",
  "size": 21474836480,
  "status": "active",
  "tags": [],
  "updated_at": "2016-08-30T10:48:05Z",
  "visibility": "public"
}

```

```
}
```

1.8.2.3. Update image

HTTP Method	URI Path	Description
PATCH	/v2/images/{image_id}	Update image

Example of request

```
curl -s \  
  
-X PATCH https://regionone.image.vling.io/v2/images/{image_id} \  
  
-H "Content-Type: application/openstack-images-v2.1-json-patch" \  
  
-H "X-Auth-Token: {token_id}" \  
  
-d '[  
  
    {  
  
        "op": "add",  
  
        "path": "/login-user",  
  
        "value": "root"  
  
    }  
  
    ]'
```

Example of return:

HTTP/1.1 200

```
{  
  "id": "7b97f37c-899d-44e8-aaa0-543edbc4eaad",  
  "name": "Ubuntu 12.10",  
  "status": "queued",  
  "visibility": "private",  
  "protected": false,  
  "tags": ["ubuntu", "12.10", "quantal"],  
  "login_user": "root",  
  "created_at": "2013-11-15T00:46:48Z",  
  "updated_at": "2013-11-15T00:46:50Z",  
  "file": "/v2/images/7b97f37c-899d-44e8-aaa0-543edbc4eaad/file",  
  "self": "/v2/images/7b97f37c-899d-44e8-aaa0-543edbc4eaad",  
  "schema": "/v2/schemas/image"  
}
```

1.8.2.4. Delete image (instance snapshot)

HTTP Method	URI Path	Description
-------------	----------	-------------

HTTP Method	URI Path	Description
DELETE	/v2/images/{image_id}	Delete image (instance snapshot)

Example of request

```
curl -s \
  -X DELETE https://regionone.image.vling.io/v2/images/{image_id} \
  -H "X-Auth-Token: {token_id}"
```

Example of return:

HTTP/1.1 204 No Content

1.9. Monitor Service

1.9.1. API rule

Monitor Service API entrance and API list:

- API entrance:

Region	API entrance
regionone	https://regionone.monitoring.vling.io

- API list:

Resource	Operation	HTTP Method	URI path
Monitor metrics	<i>Get monitor metrics list</i>	POST	/v2/metrics
	<i>Get monitor data of a metric</i>	GET	/v2/meters/{metric_name}/statistics
Alarms	<i>Create alarm</i>	POST	/v2/alarms
	<i>Get alarm list</i>	GET	/v2/alarms
	<i>Update an alarm</i>	PUT	/v2/alarms/{alarm_id}
	<i>Delete an alarm</i>	DELETE	/v2/alarms/{alarm_id}
	<i>Check an alarm's record</i>	GET	/v2/alarms/{alarm_id}/history

1.9.2. Monitor metrics

1.9.2.1. Get monitor metrics list

Get monitor metrics list. Based on the value of metric_name (true or false) to determine which metrics will be acquired.

HTTP Method	URI path	Description
POST	/v2/metrics	Get monitor metrics list

Parameter of request:

- Resource: targets need to be monitored
- Metrics: monitor target's metrics.
- Value of monitor metrics is true or false. True means to get all the monitor resource, false means does not get.

Resource	Monitor metrics	Type	Unit	Description
Volume	volume_read_bytes_rate	bool	B/s	Read speed of volume
	volume_write_bytes_rate	bool	B/s	Write speed of volume
	volume_write_requests_rate	bool	requests/s	Volume write request rate
	volume_read_requests_rate	bool	requests/s	Volume read request rat
Instance	mem_util	bool	%	Memory utility rate
	disk_write_rate	bool	B/s	Disk write rate
	cpu_util	bool	%	CPU utility rate
	network_in_rate	bool	B/s	Network inbound rate
	network_out_rate	bool	B/s	Network outbound rate
	disk_read_rate	bool	B/s	Disk read rate
Floating IP	fip.bytes.in.rate	bool	B/s	Network inbound rate
	fip.bytes.out.rate	bool	B/s	Network outbound rate
	fip.packages.in.rate	bool	pkts/s	Network inbound rate
	fip.packages.out.rate	bool	pkts/s	Network outbound rate

Parameter of return:

Field name	Type	Description
resource_name	string	Resource name
metric_name	string	Metric name
resource_id	string	Resource ID

Field name	Type	Description
metric_unit	string	Metric unit
verbose_name	string	Detailed formation of metrics
resource_type	string	Resource type

Example of request

```
$ curl -X POST https://regionone.monitoring.vling.io/v2/metrics \
-H "Content-Type: application/json" \
-H "Accept: application/json" \
-H "X-Auth-Token: c9c1d542220a48819653c9e191d49164" \
-d '{
  "volume": {
    "volume_read_bytes_rate": true,
    "volume_write_bytes_rate": true,
    "volume_write_requests_rate": false,
    "volume_read_requests_rate": false
  },
  "instance": {
    "mem_util": false,
    "disk_write_rate": false,
    "cpu_util": false,
    "network_in_rate": false,
    "network_out_rate": false,
    "disk_read_rate": false
  }
}' | python -m json.tool
```

Example of return

```
% Total      % Received % Xferd  Average Speed   Time    Time       Time  Current
   100    1798    100    1270    100     528     374     155  0:00:03  0:00:03  --:--:--   374
[
  {
    "metric_name": "volume_read_bytes_rate",
    "metric_unit": "B/s",
    "resource_id": "3c6df49f-b2e7-4810-b507-426bf51ad9bb",
    "resource_name": "vol-15GB",
    "resource_type": "volume",
    "verbose_name": "Volume Read Rate"
  },
  {
    "metric_name": "volume_write_bytes_rate",
    "metric_unit": "B/s",
    "resource_id": "3c6df49f-b2e7-4810-b507-426bf51ad9bb",
    "resource_name": "vol-15GB",
    "resource_type": "volume",
    "verbose_name": "Volume Write Rate"
  },
  {
    "metric_name": "volume_read_bytes_rate",
    "metric_unit": "B/s",
    "resource_id": "6a24325d-4a5a-46e5-aff6-ebbc14207ab3",
    "resource_name": "demo1-2",
    "resource_type": "volume",
    "verbose_name": "Volume Read Rate"
  }
]
```

```

    },
    {
      "metric_name": "volume_write_bytes_rate",
      "metric_unit": "B/s",
      "resource_id": "6a24325d-4a5a-46e5-aff6-ebbc14207ab3",
      "resource_name": "demo1-2",
      "resource_type": "volume",
      "verbose_name": "Volume Write Rate"
    },
    {
      "metric_name": "volume_read_bytes_rate",
      "metric_unit": "B/s",
      "resource_id": "e85d96d6-96e6-4638-b18f-24b83647a454",
      "resource_name": "demo1",
      "resource_type": "volume",
      "verbose_name": "Volume Read Rate"
    },
    {
      "metric_name": "volume_write_bytes_rate",
      "metric_unit": "B/s",
      "resource_id": "e85d96d6-96e6-4638-b18f-24b83647a454",
      "resource_name": "demo1",
      "resource_type": "volume",
      "verbose_name": "Volume Write Rate"
    }
  ]

```

1.9.2.2. Get monitor data of a metric

Get monitor data of a metric, when both absolute time and relative time are assigned, it will use absolute time.

HTTP Method	URI path	Description
GET	/v2/meters/{metric_name}/statistics	Get monitor data of a metric

Parameter of request

Field name	Type	Description
X-Auth-Token	string	Authenticate token
period	int	Time interval
duration	string	Relative time, in m(minute), h(hour), d(day), format is number+ unit, for example, 3h, 1d, 30d
q.field	string	Parameter name, resource_id and timestamp
q.op	string	Comparison string, "lt", "gt", "eq" etc.
q.value	string	field parameter

Parameter of return

Return monitor data

Field name	Type	Description
------------	------	-------------

Field name	Type	Description
period_start	string	Time stamp
count	int	Data count within a period
min	float	Minimal value
max	float	Maximum value
avg	float	Average value
sum	float	Sum
unit	string	Unit

Example of request

```
$ curl -X GET
"https://regionone.monitoring.vling.io/v2/meters/volume_read_requests_rate/statistics?q.field
=resource_id&q.op=eq&q.value=e85d96d6-96e6-4638-b18f-24b83647a454&duration=1h&period=600" \
-H "Content-Type: application/json" \
-H "Accept: application/json" \
-H "X-Auth-Token: dce5ddc145884e218a4c82838a74b8ce" | python -m json.tool
```

Example of return

```
% Total      % Received % Xferd  Average Speed   Time    Time       Time  Current
   100    1746    100    1746     0      0   4979      0  --:--:--  --:--:--  --:--:--   4988
[
  {
    "avg": 0.0,
    "count": 4,
    "duration": 606.0,
    "duration_end": "2016-11-18T00:20:51",
    "duration_start": "2016-11-18T00:10:45",
    "groupby": null,
    "max": 0.0,
    "min": 0.0,
    "period": 600,
    "period_end": "2016-11-18T00:18:37",
    "period_start": "2016-11-18T00:08:37",
    "sum": 0.0,
    "unit": "requests/s"
  },
  {
    "avg": 0.0,
    "count": 4,
    "duration": 607.0,
    "duration_end": "2016-11-18T00:30:58",
    "duration_start": "2016-11-18T00:20:51",
    "groupby": null,
    "max": 0.0,
    "min": 0.0,
    "period": 600,
    "period_end": "2016-11-18T00:28:37",
    "period_start": "2016-11-18T00:18:37",
    "sum": 0.0,
```

```

    "unit": "requests/s"
  },
  {
    "avg": 0.0,
    "count": 4,
    "duration": 605.0,
    "duration_end": "2016-11-18T00:41:03",
    "duration_start": "2016-11-18T00:30:58",
    "groupby": null,
    "max": 0.0,
    "min": 0.0,
    "period": 600,
    "period_end": "2016-11-18T00:38:37",
    "period_start": "2016-11-18T00:28:37",
    "sum": 0.0,
    "unit": "requests/s"
  },
  {
    "avg": 0.0,
    "count": 3,
    "duration": 455.0,
    "duration_end": "2016-11-18T00:48:38",
    "duration_start": "2016-11-18T00:41:03",
    "groupby": null,
    "max": 0.0,
    "min": 0.0,
    "period": 600,
    "period_end": "2016-11-18T00:48:37",
    "period_start": "2016-11-18T00:38:37",
    "sum": 0.0,
    "unit": "requests/s"
  },
  {
    "avg": 0.0,
    "count": 4,
    "duration": 608.0,
    "duration_end": "2016-11-18T00:58:46",
    "duration_start": "2016-11-18T00:48:38",
    "groupby": null,
    "max": 0.0,
    "min": 0.0,
    "period": 600,
    "period_end": "2016-11-18T00:58:37",
    "period_start": "2016-11-18T00:48:37",
    "sum": 0.0,
    "unit": "requests/s"
  },
  {
    "avg": 0.0,
    "count": 4,
    "duration": 606.0,
    "duration_end": "2016-11-18T01:06:20",
    "duration_start": "2016-11-18T00:56:14",
    "groupby": null,
    "max": 0.0,
    "min": 0.0,
    "period": 600,
    "period_end": "2016-11-18T01:08:37",
    "period_start": "2016-11-18T00:58:37",
    "sum": 0.0,
    "unit": "requests/s"
  }
}

```

]

1.9.3. Alarm

1.9.3.1. Create alarm

Create alarm; there are two types: threshold and combination.

HTTP Method	URI path	Description
POST	/v2/alarms	Create alarm

Parameter of request

Field name	Type	Description
X-Auth-Token	string	Token authentication
name	string	Alarm name, required
description	string	Description
alarm_actions	list(string)	When alarm is triggered, action will be performed, by default is []
type	string	Alarm type, threshold and combination
enabled	bool	Enable alarm or not, by default is True

threshold_rule

Rules of triggering an alarm

Field name	Type	Description
meter_name	string	Monitor metrics
unit	string	Monitor metric Unit
resource_metadata	dict(string: string)	Meta information of the alarm
query	list(Query)	To find out specific resource, query format is: field: resource_id op: eq value: resource_id
period	integer	Time interval, by default is 60s
evaluation_periods	integer	Evaluation periods, by default is 1s
comparison_operator	string	How to compare, there are 6 options, lt, le, eq, ne, ge, gt, by default is eq
statistic	string	Monitor data type, it has "min", "max", "avg", "sum" and "count"
threshold	float	Threshold

combination_rule

Rules of triggering a combined alarm

Field name	Type	Description
alarm_ids	list(string)	Alarm id
operator	string	Relationship between alarm lists, option, "or" and "and"

Example of request1, create an alarm

```
$ curl -X POST https://regionone.monitoring.vling.io/v2/alarms \
-H "Content-Type: application/json" \
-H "Accept: application/json" \
-H "X-Auth-Token: aa2d0bb05f10498b8ebb7cc2727d3e9c" \
-d '{
  "name": "Alarm1",
  "type": "threshold",
  "threshold_rule": {
    "comparison_operator": "gt",
    "evaluation_periods": 1,
    "meter_name": "cpu_util",
    "unit": "%",
    "period": 300,
    "query": [
      {
        "field": "resource_id",
        "op": "eq",
        "value": "24b3f7bd-b15f-4f63-96e9-e93dbf7d5edb"
      }
    ],
    "statistic": "avg",
    "threshold": 70.0,
    "resource_metadata": {
      "resource_name": "demo",
      "resource_type": "instance"
    }
  }
}' | python -m json.tool
```

Example of return

```
% Total    % Received % Xferd  Average Speed   Time    Time       Time  Current
   100    1831    100    1060    100     771    2497    1816  --:--:--  --:--:--  --:--:--  2500
{
  "alarm_actions": [],
  "alarm_id": "c391979f-6ef9-4ebe-b43f-efa6553dd085",
  "created_at": "2016-11-18T18:17:06.583541",
  "description": null,
  "enabled": true,
  "insufficient_data_actions": [],
  "name": "Alarm1",
  "ok_actions": [],
  "project_id": "24be2887cf4b4dc88c4443a104268016",
  "repeat_actions": false,
  "state": "insufficient data",
```

```

"state_timestamp": "2016-11-18T18:17:06.583541",
"threshold_rule": {
  "comparison_operator": "gt",
  "evaluation_periods": 1,
  "exclude_outliers": false,
  "meter_name": "cpu_util",
  "period": 300,
  "query": [
    {
      "field": "resource_id",
      "op": "eq",
      "value": "24b3f7bd-b15f-4f63-96e9-e93dbf7d5edb"
    },
    {
      "field": "project_id",
      "op": "eq",
      "value": "24be2887cf4b4dc88c4443a104268016"
    }
  ],
  "resource_metadata": {
    "resource_name": "demo",
    "resource_type": "instance"
  },
  "statistic": "avg",
  "threshold": 70.0,
  "unit": "%",
  "verbose_name": "CPU Utilization"
},
"threshold_rule_string": "cpu_util > 70.0% during 1 * 300s",
"time_constraints": [],
"timestamp": "2016-11-18T18:17:06.583541",
"type": "threshold",
"user_id": "a89c9bbf798c420d8035bd6b01863939"
}

```

Another example

```

$ curl -X POST https://regionone.monitoring.vling.io/v2/alarms \
-H "Content-Type: application/json" \
-H "Accept: application/json" \
-H "X-Auth-Token: aa2d0bb05f10498b8ebb7cc2727d3e9c" \
-d '{
  "name": "Alarm2",
  "type": "threshold",
  "threshold_rule": {
    "comparison_operator": "gt",
    "evaluation_periods": 1,
    "meter_name": "volume_read_bytes_rate",
    "unit": "%",
    "period": 300,
    "query": [
      {
        "field": "resource_id",
        "op": "eq",
        "value": "3c6df49f-b2e7-4810-b507-426bf51ad9bb"
      }
    ],
    "statistic": "avg",
    "threshold": 70.0,
    "resource_metadata": {
      "resource_name": "vol-15GB",
      "resource_type": "volume"
    }
  }
}

```



```

    }
  }
}' | python -m json.tool

```

Example of return

```

% Total      % Received % Xferd  Average Speed   Time    Time       Time  Current
   100    1878    100    1091    100     787     1883     1358  --:--:--  --:--:--  --:--:--  1881
{
  "alarm_actions": [],
  "alarm_id": "53e8c294-29d7-4059-8106-e07a8b536521",
  "created_at": "2016-11-18T18:25:08.125033",
  "description": null,
  "enabled": true,
  "insufficient_data_actions": [],
  "name": "Alarm2",
  "ok_actions": [],
  "project_id": "24be2887cf4b4dc88c4443a104268016",
  "repeat_actions": false,
  "state": "insufficient data",
  "state_timestamp": "2016-11-18T18:25:08.125033",
  "threshold_rule": {
    "comparison_operator": "gt",
    "evaluation_periods": 1,
    "exclude_outliers": false,
    "meter_name": "volume_read_bytes_rate",
    "period": 300,
    "query": [
      {
        "field": "resource_id",
        "op": "eq",
        "value": "3c6df49f-b2e7-4810-b507-426bf51ad9bb"
      },
      {
        "field": "project_id",
        "op": "eq",
        "value": "24be2887cf4b4dc88c4443a104268016"
      }
    ]
  },
  "resource_metadata": {
    "resource_name": "vol-15GB",
    "resource_type": "volume"
  },
  "statistic": "avg",
  "threshold": 70.0,
  "unit": "%",
  "verbose_name": "Volume Read Rate"
},
  "threshold_rule_string": "volume_read_bytes_rate > 70.0% during 1 * 300s",
  "time_constraints": [],
  "timestamp": "2016-11-18T18:25:08.125033",
  "type": "threshold",
  "user_id": "a89c9bbf798c420d8035bd6b01863939"
}

```

Example of request2, create a combined alarm

```
$ curl -X POST https://regionone.monitoring.vling.io/v2/alarms \
```

```

-H "Content-Type: application/json" \
-H "Accept: application/json" \
-H "X-Auth-Token: aa2d0bb05f10498b8ebb7cc2727d3e9c" \
-d '{
  "name": "Alarm3",
  "type": "combination",
  "combination_rule": {
    "alarm_ids": [
      "c391979f-6ef9-4ebe-b43f-efa6553dd085",
      "53e8c294-29d7-4059-8106-e07a8b536521"
    ],
    "operator": "or"
  }
}' | python -m json.tool

```

Example of return

```

% Total      % Received % Xferd  Average Speed   Time    Time       Time  Current
   100     944    100     650    100     294     1571      710  --:--:--  --:--:--  --:--:--  1573
{
  "alarm_actions": [],
  "alarm_id": "f73a241c-524f-44c3-811b-9487bb1be133",
  "combination_rule": {
    "alarm_ids": [
      "c391979f-6ef9-4ebe-b43f-efa6553dd085",
      "53e8c294-29d7-4059-8106-e07a8b536521"
    ],
    "operator": "or"
  },
  "created_at": "2016-11-18T18:28:00.078578",
  "description": null,
  "enabled": true,
  "insufficient_data_actions": [],
  "name": "Alarm3",
  "ok_actions": [],
  "project_id": "24be2887cf4b4dc88c4443a104268016",
  "repeat_actions": false,
  "state": "insufficient data",
  "state_timestamp": "2016-11-18T18:28:00.078578",
  "time_constraints": [],
  "timestamp": "2016-11-18T18:28:00.078578",
  "type": "combination",
  "user_id": "a89c9bbf798c420d8035bd6b01863939"
}

```

1.9.3.2. Get alarm list

Get alarm list based on field, op and value.

HTTP Method	URI path	Description
GET	/v2/alarms	Get alarm list

Parameter of request

Field name	Type	Description
------------	------	-------------

Field name	Type	Description
X-Auth-Token	string	Token authentication
q.field	string	"type"
q.op	string	"eq"
q.value	string	"threshold" or "combination"

Example of request

```
$ curl -X GET
"https://regionone.monitoring.vling.io/v2/alarms?q.field=type&q.value=combination" \
-H "Content-Type: application/json" \
-H "Accept: application/json" \
-H "X-Auth-Token: aa2d0bb05f10498b8ebb7cc2727d3e9c" | python -m json.tool
```

Example of return

```
% Total    % Received % Xferd  Average Speed   Time    Time       Time  Current
   100    1262    100    1262     0     0    8318       0  --:--:--  --:--:--  --:--:--   8357
[
  {
    "alarm_actions": [],
    "alarm_id": "b2bac306-abcf-4aff-8daa-63341c5f9daf",
    "combination_rule": {
      "alarm_ids": [
        "c391979f-6ef9-4ebe-b43f-efa6553dd085",
        "53e8c294-29d7-4059-8106-e07a8b536521"
      ],
      "operator": "or"
    },
    "created_at": "2016-11-18T18:36:34",
    "description": null,
    "enabled": true,
    "insufficient_data_actions": [],
    "name": "Alarm3",
    "ok_actions": [],
    "project_id": "24be2887cf4b4dc88c4443a104268016",
    "repeat_actions": false,
    "state": "insufficient data",
    "state_timestamp": "2016-11-18T18:36:34",
    "time_constraints": [],
    "timestamp": "2016-11-18T18:36:34",
    "type": "combination",
    "user_id": "a89c9bbf798c420d8035bd6b01863939"
  },
  {
    "alarm_actions": [],
    "alarm_id": "f73a241c-524f-44c3-811b-9487bb1be133",
    "combination_rule": {
      "alarm_ids": [
        "c391979f-6ef9-4ebe-b43f-efa6553dd085",
        "53e8c294-29d7-4059-8106-e07a8b536521"
      ],
      "operator": "or"
    },
    "created_at": "2016-11-18T18:28:00",
```

```

    "description": null,
    "enabled": true,
    "insufficient_data_actions": [],
    "name": "Alarm3",
    "ok_actions": [],
    "project_id": "24be2887cf4b4dc88c4443a104268016",
    "repeat_actions": false,
    "state": "insufficient data",
    "state_timestamp": "2016-11-18T18:28:00",
    "time_constraints": [],
    "timestamp": "2016-11-18T18:28:00",
    "type": "combination",
    "user_id": "a89c9bbf798c420d8035bd6b01863939"
  }
]

```

1.9.3.3. Update an alarm

Update an alarm, parameter is the same as to create alarm, use the same interface to open and shut down alarm.

HTTP Method	URI path	Description
PUT	/v2/alarms/{alarm_id}	Update an alarm

Example of request

```

$ curl -X PUT https://regionone.monitoring.vling.io/v2/alarms/c391979f-6ef9-4ebe-b43f-
efa6553dd085 \
-H "Content-Type: application/json" \
-H "Accept: application/json" \
-H "X-Auth-Token: f554cce6014545cd8448157800ba4e0d" \
-d '{
  "name": "ThresholdAlarm2",
  "description": "A threshold alarm",
  "type": "threshold",
  "threshold_rule": {
    "comparison_operator": "gt",
    "evaluation_periods": 3,
    "meter_name": "cpu_util",
    "unit": "%",
    "period": 300,
    "query": [
      {
        "field": "resource_id",
        "op": "eq",
        "value": "24b3f7bd-b15f-4f63-96e9-e93dbf7d5edb"
      }
    ]
  },
  "statistic": "avg",
  "threshold": 80.0
},
"alarm_actions": [
  "http://site:8000/alarm"
]
}' | python -m json.tool

```

Example of return

```

% Total      % Received % Xferd  Average Speed   Time    Time       Time  Current
   100    1796    100    1027    100     769     6315     4728  ---:---:--  ---:---:--  ---:---:--  6339
{
  "alarm_actions": [
    "http://site:8000/alarm"
  ],
  "alarm_id": "c391979f-6ef9-4ebe-b43f-efa6553dd085",
  "created_at": "2016-11-18T18:17:06",
  "description": "A threshold alarm",
  "enabled": true,
  "insufficient_data_actions": [],
  "name": "ThresholdAlarm2",
  "ok_actions": [],
  "project_id": "24be2887cf4b4dc88c4443a104268016",
  "repeat_actions": false,
  "state": "ok",
  "state_timestamp": "2016-11-18T18:18:20",
  "threshold_rule": {
    "comparison_operator": "gt",
    "evaluation_periods": 3,
    "exclude_outliers": false,
    "meter_name": "cpu_util",
    "period": 300,
    "query": [
      {
        "field": "resource_id",
        "op": "eq",
        "value": "24b3f7bd-b15f-4f63-96e9-e93dbf7d5edb"
      },
      {
        "field": "project_id",
        "op": "eq",
        "value": "24be2887cf4b4dc88c4443a104268016"
      }
    ]
  },
  "resource_metadata": {},
  "statistic": "avg",
  "threshold": 80.0,
  "unit": "%",
  "verbose_name": "CPU Utilization"
},
"threshold_rule_string": "cpu_util > 80.0% during 3 * 300s",
"time_constraints": [],
"timestamp": "2016-11-18T19:21:51.740674",
"type": "threshold",
"user_id": "a89c9bbf798c420d8035bd6b01863939"
}

```

1.9.3.4. Delete an alarm

Delete and alarm, if this alarm is under another alarm, it cannot be deleted.

HTTP Method	URI path	Description
DELETE	/v2/alarms/{alarm_id}	Delete an alarm

Example of request

```
$ curl -X DELETE https://regionone.monitoring.vling.io/v2/alarms/c391979f-6ef9-4ebe-b43f-efa6553dd085 \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -H "X-Auth-Token: f554cce6014545cd8448157800ba4e0d"
```

1.9.3.5. Check an alarm's record

Check an alarm's update information.

HTTP Method	URI path	Description
GET	/v2/alarms/{alarm_id}/history	Check an alarm's record

Parameter of return:

Field name	Type	Description
on_behalf_of	string	Alarm creator's user_id
user_id	string	User uuid
event_id	string	Event uuid
timestamp	string	Time stamp
detail	string	Updated detail
alarm_id	string	Alarm uuid
project_id	string	Project uuid
type	string	<ul style="list-style-type: none">• "creation": create an alarm• "rule change": rule change• "state transition": state change• "on/off": when it is on, alarm.enabled = true, when it is off, false• "deletion": delete alarm

Example of request

```
$ curl -X GET https://regionone.monitoring.vling.io/v2/alarms/53e8c294-29d7-4059-8106-e07a8b536521/history \
  -H "Content-Type: application/json" \
  -H "Accept: application/json" \
  -H "X-Auth-Token: 888958b8555e41c594e18927484201c9" | python -m json.tool
```

Example of return

```
% Total      % Received % Xferd   Average Speed   Time    Time       Time  Current
   Dload  Upload   Total             Spent    Left     Speed
100 1384  100 1384    0      0   4084           0  --:--:--  --:--:--  --:--:--  4094
[
  {
    "alarm_id": "53e8c294-29d7-4059-8106-e07a8b536521",
    "detail": "{\"alarm_actions\": [], \"user_id\": \"a89c9bbf798c420d8035bd6b01863939\",
\"name\": \"Alarm2\", \"state\": \"insufficient data\", \"timestamp\": \"2016-11-
18T18:25:08.125033\", \"created_at\": \"2016-11-18T18:25:08.125033\", \"enabled\": true,
\"state_timestamp\": \"2016-11-18T18:25:08.125033\", \"rule\": {\"meter_name\":
\"volume_read_bytes_rate\", \"evaluation_periods\": 1, \"period\": 300, \"resource_metadata\":
{\"resource_name\": \"vol-15GB\", \"resource_type\": \"volume\"}, \"exclude_outliers\": false,
\"statistic\": \"avg\", \"threshold\": 70.0, \"query\": [{\"field\": \"resource_id\",
\"value\": \"3c6df49f-b2e7-4810-b507-426bf51ad9bb\", \"op\": \"eq\"}, {\"field\":
\"project_id\", \"value\": \"24be2887cf4b4dc88c4443a104268016\", \"op\": \"eq\"}],
\"comparison_operator\": \"gt\", \"unit\": \"%\"}, \"alarm_id\": \"53e8c294-29d7-4059-8106-
e07a8b536521\", \"time_constraints\": [], \"insufficient_data_actions\": [],
\"repeat_actions\": false, \"ok_actions\": [], \"project_id\":
\"24be2887cf4b4dc88c4443a104268016\", \"type\": \"threshold\"}\",
    "event_id": "e13fd930-3b4f-46a3-a498-f75b9b4cf472",
    "on_behalf_of": "24be2887cf4b4dc88c4443a104268016",
    "project_id": "24be2887cf4b4dc88c4443a104268016",
    "timestamp": "2016-11-18T18:25:08",
    "type": "creation",
    "user_id": "a89c9bbf798c420d8035bd6b01863939"
  }
]
```

2. CLI Manual

uos.cli is forked from the official site python-openstackclient. Some of the outputs have been modified. In order to distinguish it from the official CLI, it is named as uos.cli, and the command is *uos*.

Note

Python-openstack client is an integrated official CLI project, which is depended on different clients(keystone client, nova client, cinder client...) The original commands from the individual client projects will no longer be maintained. Each client will only be used as SDK.

Uos.cli cannot co-exist in the same environment. The user has to use tools like virtualenv to make sure they are isolated if the user intends to have them in the same environment.

2.1. Installation

2.1.1. Preparation

uos.cli installation package is based on cryptography. So the cryptography packages need to be installed before the installation of uos.cli.

Note

Installing uos.cli will automatically install cryptography, so you do not need to run the command `pip install cryptography` manually.

For Debian and Ubuntu:

```
$ sudo apt-get install build-essential libssl-devlibffi-dev python-dev
```

For Fedora and RHEL-derivatives:

```
$ sudo yum install gcc-libffi-devel python-developenssl-devel
```

For instructions on installing cryptography, please refer to <https://cryptography.io/en/latest/installation/>

2.1.2. Installation


```
pip install uos.cli
```

2.1.3. Upgrade

```
pip install -U uos.cli
```

2.1.4. Installation FAQ

1. Failed to install cryptography

Please make sure all the prerequisite packages are installed successfully.

2. pbr package conflict

If you encounter the following error:

```
pkg_resources.VersionConflict: (pbr 0.10.0 (/Library/Python/2.7/site-packages),  
Requirement.parse('pbr>=1.3'))
```

Please update your pbr package by typing:

```
pip install -U pbr
```

3. Warning ImportError: No module named xmlrpc_client

This is because the built-in six package of OSX doesn't satisfy the requirements of uos.cli. To fix this, please use the following commands:

```
pip uninstall six  
easy_install six
```

4. Issues in Mac OSX

The following errors may occur when you are trying to install c extension of python:

```
clang: error: unknown argument: '-mno-fused-madd'  
[-Wunused-command-line-argument-hard-error-in-future]
```

To fix it, please use the following commands:

```
export CFLAGS=-Qunused-arguments  
export CPPFLAGS=-Qunused-arguments
```

2.2. Configuration

You need a file that is similar to the official 'openrc' file on your local computer. The file should look like the following, and please change the password at the bottom line:

```

export OS_IDENTITY_API_VERSION=3
export OS_COMPUTE_API_VERSION=2
export OS_IMAGE_API_VERSION=2
export OS_NETWORK_API_VERSION=2
export OS_VOLUME_API_VERSION=1

export OS_AUTH_URL=https://identity.api.ustack.com

export OS_PROJECT_DOMAIN_ID=de08ac4e8db04c4b954a333c259f7b31
export OS_USER_DOMAIN_ID=de08ac4e8db04c4b954a333c259f7b31

export OS_PROJECT_NAME=shaoguojian_project
export OS_PROJECT_ID=2d3e2084c73f4a188f5052200c270030
export OS_REGION_NAME=bj1

export OS_USERNAME=shaoguojian
export OS_USER_ID=db41ba321e4c4311b4ec74390da0ffa1

export OS_PASSWORD=your_password

```

Note

This openrc file can run under the standard openstack. Please note that the keystone of the Vling Cloud environment only accepts version v3 authentication interface.

2.3. Usage

In the bash:

```

>>sourceopenrc
>>uos
(uos)          # you enter interactive shell
(uos) help

```

Shell commands (type help <topic>):

```

=====
cmdenvironment  edit  hi      l   list  pause  r   save  shell  show
ed             help  history li  load  py    run  set   shortcuts

```

Undocumented commands:

```

=====
EOF eof exit q quit

```

Application commands (type help <topic>):

```

=====
access token create          mapping list          volume qos set
aggregate add host          mapping set          volume qos show
aggregate create            mapping show         volume qos unset
aggregate delete           module list          volume set
aggregate list              network create       volume show
aggregate remove host      network delete       volume type create
aggregate set               network list         volume type delete
aggregate show              network set          volume type list
availability zone list     network show         volume type set
backup create               policy create        volume type show
backup delete               policy delete        volume type unset
backup list                 policy list          volume unset

```

backup restore	policy set
backup show	policy show
catalog list	project create
catalog show	project delete
command list	project list
complete	project set
compute agent create	project show
compute agent delete	project usage list
compute agent list	quota set
compute agent set	quota show
compute service list	region create
compute service set	region delete
configuration show	region list
console log show	region set
console url show	region show
consumer create	request token authorize
consumer delete	request token create
consumer list	role add
consumer set	role assignment list
consumer show	role create
credential create	role delete
credential delete	role list
credential list	role remove
credential set	role set
credential show	role show
domain create	security group create
domain delete	security group delete
domain list	security group list
domain set	security group rule create
domain show	security group rule delete
ec2 credentials create	security group rule list
ec2 credentials delete	security group set
ec2 credentials list	security group show
ec2 credentials show	server add security group
endpoint create	server add volume
endpoint delete	server create
endpoint list	server delete
endpoint set	server image create
endpoint show	server list
extension list	server lock
federation domain list	server migrate
federation project list	server pause
federation protocol create	server reboot
federation protocol delete	server rebuild
federation protocol list	server remove security group
federation protocol set	server remove volume
federation protocol show	server rescue
flavor create	server resize
flavor delete	server resume
flavor list	server set
flavor set	server show
flavor show	server ssh
flavor unset	server suspend
group add user	server unlock
group contains user	server unpause
group create	server unrescue
group delete	server unset
group list	service create
group remove user	service delete
group set	service list
group show	service provider create

```

help                service provider delete
host list           service provider list
host show           service provider set
hypervisor list     service provider show
hypervisor show     service set
hypervisor stats show service show
identity provider create snapshot create
identity provider delete snapshot delete
identity provider list snapshot list
identity provider set snapshot set
identity provider show snapshot show
image add project   snapshot unset
image delete        token issue
image list          trust create
image remove project trust delete
image save          trust list
image set           trust show
image show          usage list
ip fixed add        usage show
ip fixed remove     user create
ip floating add     user delete
ip floating create  user list
ip floating delete  user password set
ip floating list    user set
ip floating pool list user show
ip floating remove  volume create
keypair create      volume delete
keypair delete      volume list
keypair list        volume qos associate
keypair show        volume qos create
limits show         volume qos delete
mapping create      volume qos disassociate
mapping delete      volume qos list

```

(uos) image list

```

+-----+-----+
-+
| ID                | Name                |
+-----+-----+
-+
| 89528110-2380-4473-a075-01b391cee93e | Fedora 22 64bit    |
| dd544f1f-9d7a-4c7e-9a1c-fbe5cf543a0b | Fedora Cloud Atomic 22 64bit |
| c9c04c16-d1f5-47c0-9a6c-d5b334f62997 | CoreOS Stable 681.0.0 |
|
.....

```

(uos) flavor list

```

+-----+-----+-----+-----+-----+-----+-----+
| ID                | Name                | RAM | Disk | Ephemeral | VCPUs | Is Public |
+-----+-----+-----+-----+-----+-----+-----+
| 215ea357-2d56-4387-9991-0c083806e3f8 | compute-12         | 12288 | 20 | 0 | 12 | True |
| 21c0cf18-d0dc-43ab-8fdb-40ba8b0935d9 | memory-2           | 8192 | 20 | 0 | 2 | True |
| 270a6d65-d1da-4a15-ad3a-7bcf969839e5 | compute-8          | 8192 | 20 | 0 | 8 | True |
| 3332c026-533a-43d0-b415-abd3fdab09bf | micro-2            | 1024 | 20 | 0 | 1 | True |
|
.....

```

(uos) net list

```

+-----+-----+-----+
| ID | Name | Subnets |
+-----+-----+-----+
| 04ab3521-9f61-4dfc-8000-85a233670209 | adsf | 2cbb3f78-0c9a-4070-af29-6bd19868c4c7,
ea06814e-e402-4128-b6fd-5931ffd30f0e |
| 502b0717-751c-4d05-a7e3-d0f76ea9c2c7 | private-net | 74a5352d-be2a-4f07-95a2-056a1964f38d |
| ba05e057-1eb8-4cb2-af58-9b99a72df5ed | shared | 0383c257-d730-4bbc-bd20-c7482bc925e8,
1efecef6-7a35-4b20-8ff8-c8f8761b131d, 3b426a5f-db56-4e56-a57d-5e493c5957ff, acc52025-1a74-474d-baea-
9cea335b682a |
| ddabcc63-8617-465c-8a6d-f534000887e3 | BGP | 293eff08-7d94-4335-bc2f-5ab9313b9f16,
c869445a-ae60-44bd-acdf-ef947ee932f4, f9eafd3e-e6f6-4c20-9a8a-15ad061f2840 |
+-----+-----+-----+
...

```

3. FAQ

Contents

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 - Configure network settings in CentOS5.

3.1. General Questions

3.1.1. Where can I check my quota? And how can I upgrade my quota?

In control panel, under “Overview”, you can check your quota. And you can apply quota by clicking “Apply Quota” button, which is at the up-right corner of the page.

3.1.2. What is the password of my instance? It is needed to login to instance.

If you choose “password” as credentials when you create the instance, it will be your instance password. If you choose “Keypair” as credentials, you can find default password in Description page of your instance.

For Linux servers, if you forget password, you can use “change password” function in control panel to change password.

3.1.3. What is the difference between Vling Cloud and OpenStack?

OpenStack is a free and open-source software platform for cloud computing, mostly deployed as an infrastructure-as-a-service (IaaS). The software platform consists of interrelated components that control hardware pools of processing, storage, and networking resources throughout a data center.

Vling Cloud is a commercialized IaaS solution for cloud computing based on OpenStack technology and standard. Also, we developed some new services based on OpenStack, such as pricing and daily operation.

3.1.4. How to login to instances without password?

You can use Key Pair to login to Linux server via SSH. For Linux/Mac users, we recommend to import public key. If you do not have a key, please run `ssh-keygen`, with several hit of the “enter” button, you will have two files in path `~/.ssh/`, one is your private key `id_rsa`, and another one is your public key `id_rsa.pub`. Click “import private key” from your private key. And copy the content of `id_rsa.pub` to public key, then you complete the process to import your public key.

3.2. Block Storage

3.2.1. What will happen to my data in my cloud disk (volume) when I delete my cloud instance?

Instance and volume are two separate entities, data on your volume is not affected if the instance is delete.

3.2.2. Does the I/O required by application affect the IOPS acquired from cloud volume?

Yes, for a specific volume, IOPS is affected by the I/O of application. For blocks bigger than 32KB, the bigger the block is, the slower of IOPS will be.

3.2.3. What will affect the performance of cloud volume?

The performance of volume will be affected by the following factors.

- New created volume may have lower IOPS, it will meet SLA after some warm up.

- IOPS of Volume will get slower after creation of snapshot. IOPS will come back to SLA after a short time.
- Make sure your application make enough I/O request.

3.2.4. Do I need to detach volume to create a snapshot of instances?

No. Snapshot can be created while volume is attached on the instance. Please be aware that snapshot only include data which has been written to the hard drive. Some temporary file/data may not be recorded. To get consistence, we recommend to use sync operation, or to create snapshot after detaching volume.

3.3. Network Services

3.3.1. How to modify IP address of cloud instance?

1. You can change IP of virtual Network Interface Card of a instance
2. If the VNIC is in a shared network. Then you cannot modify it.
3. If the VNIC will be in a subnet, you can type the IP address you like when create a Virtual Interface.
4. Detach the old VNIC and attach the new one.

You can also use CLI/API to change IP address of a VNIC directly. And in this way you do not need to detach and attached any VNIC. However, this cannot be done in Web interface.

3.3.2. What is isolated L2 layer network?

Isolated L2 Network means this distributed L2 network is 100% owned by one user. No one else can get your L2 data frame.

3.3.3. Will two subnets which belong to the same network communicate with each other?

Two subnets cannot communicate with each other directly. You need to put these two subnets in the same 3rd layer network and communicate with IP. You can link these two subnets to a router.

3.3.4. I lost network access after joining multiple networks.

Instance can join up to 3 networks at the same time using different VNIC. Usually, each network will connect to a router, it is simple when a instance only in one network. For shared network, instance has access to Internet through default gateway; for private network, instance has access to Internet through

the gateway set by user. Each instance can only have one Default Gateway. Instance may has problem after joining multiple network because the change of gateway. For example, the previous default gateway is no longer the default gateway. The VNIC attached to that network can still send out packages. But the returned packages were sent to another gateway due to the change of routing information. Or, the default gateway disappear, which make the packages cannot reach router. Solution is to change Default Gateway to one with a floating IP.

3.3.5. Do I need to pay for router and floating IP after shut down of instances?

Each resource's price is calculated separately, No charge for instances within 30 days of instances shut down. After 30 days, you will only be charged for the SSD space you used for the instances. And the price will be the same as volume price. Router and Floating IP are separate recourses. Shut down instances will not affect these two resources. To stop the charge of Router and Floating IP you need to delete them.

3.3.6. Will instance have internet access without assignment of floating IP?

If you created a cloud instance in Shared Network, you cannot have internet access without assignment of a floating IP. You can create a Router, assign a public IP to the router and attach a private network to the router. Then all the instance in that network can have internet access.

3.3.7. Configure network settings in CentOS5.

New instances create with CentOS5 image do not support DHCP for newly added VNIC. You need to configure manually.

Assume the Name of VNIC is eth1, you can configure with the following steps,

First, go to the NIC configuration directory; create file ifcfg-eth1 with the following content:

```
DEVICE="eth1"  
BOOTPROTO="dhcp"  
ONBOOT="yes"  
TYPE="Ethernet"  
USERCTL="yes"  
PEERDNS="no"  
IPV6INIT="no"  
PERSISTENT_DHCLIENT="1"
```

Or, you can copy a configuration from eth0 and change the name to ifcfg-eth1:

```
$ cd /etc/sysconfig/network-scripts/  
$ cp ifcfg-eth0 ifcfg-eth1
```

And replace "eth0" in the content with "eht1"

If there is content of HWADDR in ifcfg-eth1, delete that line

```
$ sed -i 's/eth0/eth1/g' ifcfg-eth1  
$ sed -i '/^HWADDR/d' ifcfg-eth1
```

At last restart network services.

```
$ service network restart
```

Check network to see if eth1 has IP or not:

```
$ ifconfig
```