|  |  |  |
| --- | --- | --- |
| REST调度方式 | URI | 描述 |
| GET | /v2/servers | 获取机器列表 |
| POST | /v2/servers | 创建机器 |
| GET | /v2/servers/detail | 列出所有机器详细信息 |
| GET | /v2/servers/{server\_id} | 列出某个机器详细信息 |
| DELETE | /v2/servers/{server\_id} | 删除机器 |
| GET | /v2/flavors | 列出配额 |
| POST | /v2/flavors | 创建配额 |
| GET | /v2/limits | 配额信息 |
| GET（Put）(delete) | /v2/os-quota-sets/{tenant\_id} | 获取租户配额 |
| GET | /v2/os-services | 列出所有计算服务 |
| GET | /v2/os-volumes | 已有卷信息 |
| GET | /v2/images | 列出镜像 |
| GET | /v2/os-floating-ips | 列出浮动ip |
| GET | /v2/os-security-groups | 列出安全组 |
| GET | /v2/os-hosts | 服务节点机器 |

For example:

Get ./api/nova\_limits/

Response:

{

"limits": {

"rate": [],

"absolute": {

...

"totalCoresUsed": 16, #已使用cpu核数

"totalRAMUsed": 16384, #已使用内存

"totalInstancesUsed": 4, #已使用主机数量

"maxSecurityGroups": 10, #最大安全组配额

"maxTotalCores": 50, #最大cpu配额

"totalSecurityGroupsUsed": 1, #已使用安全组数量

"maxTotalInstances": 10, #最大主机配额

"maxTotalRAMSize": 512000 #最大内存配额

}

}

}

Volume :8776

|  |  |  |
| --- | --- | --- |
| REST调度方式 | URI | 描述 |
| GET | /v2/{tenant\_id}/limits | 卷限额 |

GET ./api/{tenant\_id}/volume\_limits/

Return example:

{

"limits": {

"rate": [],

"absolute": {

"totalSnapshotsUsed": 0,

"maxTotalBackups": 10,

"maxTotalVolumeGigabytes": 10000, #最大云硬盘容量

"maxTotalSnapshots": 10,

"maxTotalBackupGigabytes": 1000,

"totalBackupGigabytesUsed": 0,

"maxTotalVolumes": 10, #最大卷数量

"totalVolumesUsed": 2, #已使用卷数量

"totalBackupsUsed": 0,

"totalGigabytesUsed": 6 #已使用云硬盘容量

}

}

}

Network :9696 v2.0

|  |  |  |
| --- | --- | --- |
| REST调度方式 | URI | 描述 |
| GET | /v2.0/quotas | 网络项目配额 |
| GET | /v2.0/ports | 当前端口信息 |
| GET | /v2.0/subnets | 子网条目 |
| GET | /v2.0/floatingips | 浮动ip条目 |
| GET | /v2.0/routers | 路由器条目 |
| GET | /v2.0/networks | 网络条目 |

GET ./api/net\_quotas/

{

"quotas": [

{

"firewall": 10,

"port": 50, #端口配额

"pool": 10,

"subnet": 10, #子网配额

"firewall\_policy": 10,

"firewall\_rule": 100,

"network": 10, #网络数量配额

"ipsec\_site\_connection": -1,

"floatingip": 50, #外网配额

"security\_group\_rule": 100,

"security\_group": 10,

"router": 10, #路由器配额

}

]

}

GET ./api/net\_ports/

统计数量即使用量， 下同

云主机

Nova

/v2/servers/detail

{

"OS-EXT-STS:task\_state": null,

"addresses": {

"net2": [

{

"OS-EXT-IPS-MAC:mac\_addr": "fa:16:3e:9b:03:d1",

"version": 4,

"addr": "192.168.0.4",

"OS-EXT-IPS:type": "fixed"

},

{

"OS-EXT-IPS-MAC:mac\_addr": "fa:16:3e:9b:03:d1",

"version": 4,

"addr": "172.16.100.206",

"OS-EXT-IPS:type": "floating"

}

]

},

"image": {

"id": "53ec1eb5-2809-4fed-bb99-30f22e637340",

"links": [

{

"href": "http://172.16.100.141:8774/images/53ec1eb5-2809-4fed-bb99-30f22e637340",

"rel": "bookmark"

}

]

},

"OS-EXT-STS:vm\_state": "active",

"flavor": {

"id": "3d476a7a-54c9-464b-bd8e-643c64438985",

"links": [

{

"href": "http://172.16.100.141:8774/flavors/3d476a7a-54c9-464b-bd8e-643c64438985",

"rel": "bookmark"

}

]

},

"id": "6c4500f1-b802-404e-8073-9e7468d612e2",

"OS-EXT-STS:power\_state": 1,

"name": "test" #主机名

}

[http://172.16.100.141:8774/v2/images/{image-id}](http://172.16.100.141:8774/v2/images/%7Bimage-id%7D)

“name”:”centos7”

<http://172.16.100.141:9696/v2.0/networks>

"provider:network\_type": “vxlan” | “flat”

"name": "net2",

选取vxlan的name提取ip

[http://172.16.100.141:8774/v2/flavors/{flavor-id}](http://172.16.100.141:8774/v2/images/%7Bimage-id%7D)

“name”:”big”

"ram": 2048,

"vcpus": 2,

"disk": 0,

vm\_state如下：

* INITIALIZED：虚拟机仅仅在数据库创建（应该是说表结构建好了），但是还没开始创建。（状态是BUILDING）
* ACTIVE:虚拟机正在运行，使用特定的镜像。
* RESCUED：虚拟机正在运行，但使用rescue镜像。 #灾备运行中
* PAUSED：虚拟机暂停，使用特定镜像。依然占用计算和内存资源。
* SUSPENDED：虚拟机挂起，使用的是特定的镜像，但是不占用计算和内存资源。
* STOPPED：虚拟机停止，但是镜像依然在磁盘上。
* SOFT\_DELETED:虚拟机不再计算节点运行了，但是磁盘镜像依然保存，可以恢复。
* HARD\_DELETED:从配额和计费角度看，虚拟机不存在了。最终虚拟机和磁盘被销毁。
* RESIZED：虚拟机在源节点停止，在目标节点运行。虚拟机镜像在源节点和目标节点都有，但是参数不同。用于需要确认resize(调整参数)或者恢复虚拟机。（废弃的的task\_state RESIZE\_VERIFY和vm\_state RESIZED功能一样。）
* ERROR：发生了无法恢复的错误，唯一的可执行的操作就是删除虚拟机。

Task\_state:

* None:没有正在执行的任务 #
* BUDILDING #孵化中
* IMAGE\_SNAPSHOTTING #正在创建快照
* IMAGE\_BACKINGUP #备份中
* UPDATING\_PASSWORD
* PAUSING #暂停中
* UNPAUSING #暂停恢复中
* SUSPENDING #正在挂起
* RESUMING #挂起恢复中
* DELETING #正在删除
* STOPPING #正在停止
* STARTING #正在启动
* RESCUING #灾难恢复中
* UNRESCUING #灾难复原
* REBOOTING #正在重启
* REBUILDING #正在重建
* POWERING\_ON #打开电源中
* POWERING\_OFF #关闭电源中
* RESIZING #调整配置中
* RESIZE\_REVERTING
* RESIZE\_CONFIRMING #配置调整确认中
* SCHEDULING #调度中
* BLOCK\_DEVICE\_MAPPING #块设备映射中
* NETWORKING #网络映射中
* SPAWNING #正在生成
* RESIZE\_PREP
* RESIZE\_MIGRATING
* RESIZE\_MIGRATED
* RESIZE\_FINISH

Power\_stat

0: NOSTATE1: RUNNING3: PAUSED4: SHUTDOWN6: CRASHED7: SUSPENDED

Vnc:

POST [http://172.16.100.141:8774/v2/servers/{server\_id}/action](http://172.16.100.141:8774/v2/servers/6c4500f1-b802-404e-8073-9e7468d612e2/action)

Body:

{

"os-getVNCConsole": {

"type": "novnc"

}

}

Restart:

POST

[http://172.16.100.141:8774/v2/servers/{server\_id}/action](http://172.16.100.141:8774/v2/servers/%7Bserver_id%7D/action)

Body:

{

"reboot" : {

"type" : "HARD"

}

}

挂起:

POST

[http://172.16.100.141:8774/v2/servers/{server\_id}/action](http://172.16.100.141:8774/v2/servers/%7Bserver_id%7D/action)

Body:

{

"suspend": null

}

调整配置：

POST

[http://172.16.100.141:8774/v2/servers/{server\_id}/action](http://172.16.100.141:8774/v2/servers/%7Bserver_id%7D/action)

Body:

{

"resize" : {

"flavorRef" : "{flavor\_id}",

"OS-DCF:diskConfig": "AUTO" | “**MANUAL**”

}

}

重建云主机：

POST

[http://172.16.100.141:8774/v2/servers/{server\_id}/action](http://172.16.100.141:8774/v2/servers/%7Bserver_id%7D/action)

Body：

{

"rebuild" : {

"imageRef" : "{image\_id}"

}

}

删除云主机：

Delete

[http://172.16.100.141:8774/v2/servers/{server\_id}](http://172.16.100.141:8774/v2/servers/%7Bserver_id%7D)

创建云主机：

POST

http://172.16.100.141:8774/v2/servers

Body:

{

"server" : {

"name" : "new-server-test",

"imageRef" : "{image\_id}",

"flavorRef" : "{flavor\_id}",

"availability\_zone": "nova",

"OS-DCF:diskConfig": "AUTO",

"security\_groups": [

{

"name": "{security\_name}"

}

],

"networks":[

{

"uuid": "{net\_id}"

}

],

"min\_count": "{count}"

}

}

Get <http://172.16.100.141:8774/v2/os-security-groups> 获取安全组名

开关机

Post

[http://172.16.100.141:8774/v2/servers/{server\_id}/action](http://172.16.100.141:8774/v2/servers/%7Bserver_id%7D/action)

Body:

{

"os-start" : null

}

# 备份

GET

http://172.16.100.141:8774/v2/images/detail

过滤出有server字段的条目

创建备份

POST

[http://172.16.100.141:8774/v2/servers/{server\_id}/action](http://172.16.100.141:8774/v2/servers/%7Bserver_id%7D/action)

Body:

{

"createBackup": {

"name": "{backup\_name}",

"backup\_type": "daily",

"rotation": 1

}

}

删除备份

DELETE

[http://172.16.100.141:8774/v2/images/{image\_id}](http://172.16.100.141:8774/v2/images/%7Bimage_id%7D)

恢复备份

创建云主机过程，镜像id为当前镜像id

**云硬盘**

GET

http://172.16.100.141:8774/v2/os-volumes

{

"volumes": [

{

"status": "in-use",(已挂载) #状态 available(可用)|Error(错误)|creating(正在创建) deleting(删除中)|detaching(分离中)|attaching(连接中)

"displayDescription": "",

"availabilityZone": "nova",

"displayName": "test", #名字

"attachments": [

{

"device": "/dev/vdb", #设备名

"serverId": "79b23799-b911-4266-bfd4-3b6f6b306c2b", #主机

"id": "4442d262-7087-4a3a-93f8-bf167d4fcde6",

"volumeId": "4442d262-7087-4a3a-93f8-bf167d4fcde6"

}

],

"volumeType": null,

"snapshotId": null,

"metadata": {

"readonly": "False",

"attached\_mode": "rw"

},

"id": "4442d262-7087-4a3a-93f8-bf167d4fcde6",

"createdAt": "2017-12-06T08:46:41.000000", #创建时间

"size": 5 #大小

}

]

}

编辑挂载

POST

[http://172.16.100.141:8774/v2/servers/{server\_id}/os-volume\_attachments](http://172.16.100.141:8774/v2/servers/%7Bserver_id%7D/os-volume_attachments)

Body:

{

"volumeAttachment": {

"volumeId": "{volume\_id}",

"device": "/dev/vdb"

}

}

DELETE

[http://172.16.100.141:8774/v2/servers/{server\_id}/os-volume\_attachments/{volume\_id}](http://172.16.100.141:8774/v2/servers/%7Bserver_id%7D/os-volume_attachments/%7Bvolume_id%7D)

创建与删除volume

POST

<http://172.16.100.141:8774/v2/os-volumes>

Body:

{

"volume": {

"availability\_zone": "nova",

"display\_name": "{}", #可以为空

"display\_description": "{}", #可以为空

"size": 100 #大小， 必不可少

}

} 舍弃卷类型和卷来源

DELETE

[http://172.16.100.141:8774/v2/os-volumes/{voluem\_id}](http://172.16.100.141:8774/v2/os-volumes/%7Bvoluem_id%7D)

安全组

GET

[http://172.16.100.141:9696/v2.0/security-groups](http://172.16.100.141:8774/v2/os-security-groups)

GET

[http://172.16.100.141:9696/v2.0/security-groups](http://172.16.100.141:8774/v2/os-security-groups)/{secure\_group\_id}

管理规则

创建规则

POST

[http://172.16.100.141:9696/v2.0/security-group-rules](http://172.16.100.141:8774/v2/os-security-group-rules)

Body:

{

"security\_group\_rule": {

"direction": "ingress", or egress

"port\_range\_min": "80",

"ethertype": "IPv4", //写死

"port\_range\_number": "80",

"protocol": "tcp",

"remote\_ip\_prefix": "0.0.0.0/0",

"security\_group\_id": "44b092eb-2efe-4459-8ee2-5937342d8c70"

}

}

定制TCP、UDP:

远程cidr固定

同上body

定制ICMP：

类型和编码就是起始和终了端口范围（-1：255），-1的话端口范围参数不写，远程同上

所有icmp、tcp、udp：

端口范围不写

Dns:53 ssh:22 smtp:25 http:80 pop3:110 imap:143 ldap:389 https:443 smtps:465 imaps:993 pop3s:995 ms sql:1433 mysql:3306 rdp:3389

删除规则

DELETE

http://172.16.100.141:9696/v2.0/security-group-rules/{rule\_id}

创建安全组

POST

[http://172.16.100.141:9696/v2.0/security-groups](http://172.16.100.141:8774/v2/os-security-groups)

Body:

{

"security\_group": {

"name": "{}",

"description": "description" //可选

}

}

删除安全组

DELETE

http://172.16.100.141:9696/v2.0/security-groups/{secure\_group\_id}

网络

列出网络:

GET

<http://172.16.100.141:9696/v2.0/networks>

"subnets": [

"71e8d127-d307-4e0c-9fce-1344634b3fc7"

],

通过这个查询子网name和cidr

列出所有子网:

GET

<http://172.16.100.141:9696/v2.0/subnets>

创建网络:

POST

<http://172.16.100.141:9696/v2.0/networks>

Body:

{

"network": {

"name": "{}",

"admin\_state\_up": true | false

"shared": false

}

}

创建子网:

POST

<http://172.16.100.141:9696/v2.0/subnets>

Body:

{

"subnet": {

"name": "{}",

"network\_id": “{}",

"ip\_version": 4 | 6,

"gateway\_ip": "192.168.199.1", #可为空

"cidr": "192.168.199.0/24", #按这个格式，必填

"enable\_dhcp": true,

"allocation\_pools": [

{

"start": "{}",

"end": "{}"

}

], #控制格式 {},{}

"dns\_nameservers": [], #可为空

"host\_routes": [] #可为空

}

}

删除网络：

DELETE

[http://172.16.100.141:9696/v2.0/networks/{net\_id}](http://172.16.100.141:9696/v2.0/networks/%7Bnet_id%7D)

编辑网络：

PUT

[http://172.16.100.141:9696/v2.0/networks/{net\_id}](http://172.16.100.141:9696/v2.0/networks/%7Bnet_id%7D)

Body:

{

"network": {

"name": "{}", #默认为原来名称

"admin\_state\_up": true | false

}

}

编辑子网：

GET

[http://172.16.100.141:9696/v2.0/subnets/{subnet\_id}](http://172.16.100.141:9696/v2.0/subnets/%7Bsubnet_id%7D)

PUT

[http://172.16.100.141:9696/v2.0/subnets/{subnet\_id}](http://172.16.100.141:9696/v2.0/subnets/%7Bsubnet_id%7D)

Body:

{

"subnet": {

"name": "{}", #默认为原值

"gateway\_ip": "{}", #默认为原值

"dns\_nameservers": [],

"host\_routes": []

}

}

删除子网：

DELETE

[http://172.16.100.141:9696/v2.0/subnets/{subnet\_id}](http://172.16.100.141:9696/v2.0/subnets/%7Bsubnet_id%7D)

列出所有端口:

GET

<http://172.16.100.141:9696/v2.0/ports>

根据network\_id过滤出某个网络下的所有port

编辑端口：

PUT

[http://172.16.100.141:9696/v2.0/ports/{port\_id}](http://172.16.100.141:9696/v2.0/ports/%7Bport_id%7D)

Body:

{

"port": {

"admin\_state\_up": true | false,

"name": "{}" #默认为空

}

}

路由

列出路由器：

GET

<http://172.16.100.141:9696/v2.0/routers>

编辑路由：

PUT

[http://172.16.100.141:9696/v2.0/routers/{router\_id}](http://172.16.100.141:9696/v2.0/routers/%7Brouter_id%7D)

Body:

{

"router": {

"name": "{}",

"admin\_state\_up": true | false

}

}

创建路由：

POST

<http://172.16.100.141:9696/v2.0/routers>

Body:

{

"router": {

"name": "{}",

"external\_gateway\_info": {

"network\_id": "{外网id}"

},

"admin\_state\_up": true | false

}

}

删除路由：

DELETE

[http://172.16.100.141:9696/v2.0/routers/{router\_id}](http://172.16.100.141:9696/v2.0/routers/%7Brouter_id%7D)

列出路由器端口：

GET

<http://172.16.100.141:9696/v2.0/ports>

过滤出”network:router\_gateway”(无法删除)，”network:router\_interface”

增加端口：

PUT

[http://172.16.100.141:9696/v2.0/routers/{router\_id}/add\_router\_interface](http://172.16.100.141:9696/v2.0/routers/%7Brouter_id%7D/add_router_interface)

Body:

{

"subnet\_id": "{subnet\_id}" #未在该路由器上绑定端口的子网

}

删除端口：

PUT

将上面add改成remove即可