

OpenStack

Launch an instance

利用OpenStack Networking(neutron)启动一个实例

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创建密钥对

大多数云镜像使用公钥认证，这有别于传统的用户名/密码认证。在启动一个实例之前，你必须使用`ssh-keygen`命令生成一个密钥对，并将公钥添加到你的OpenStack环境。

1、执行demo环境变量脚本

```
# source demo-openrc.sh
```

2、生成密钥对

```
# ssh-keygen
```

3、添加公钥到OpenStack环境

```
# nova keypair-add --pub-key ~/.ssh/id_rsa.pub demo-key
```

4、验证公钥是否添加成功

```
# nova keypair-list
```

Name	Fingerprint
demo-key	cb:b5:13:17:1c:24:fb:09:ba:f9:10:66:1e:a0:ca:ec

启动一个实例

要启动一个实例，你必须最少指定**flavor**(云主机类型)，**image name**(镜像名)，**network**(网络)，**security group**(安全组)，**key**(密钥)和**instance name**(实例名)。

1、**flavor**用来指定一个虚拟的独立分配的资源。包括**cpu**，内存和存储。

查看可用的**flavor**:

```
# nova flavor-list
```

ID	Name	Memory_MB	Disk	Ephemeral	Swap	VCPUs	RXTX_Factor	Is_Public
1	m1.tiny	512	1	0		1	1.0	True
2	m1.small	2048	20	0		1	1.0	True
3	m1.medium	4096	40	0		2	1.0	True
4	m1.large	8192	80	0		4	1.0	True
5	m1.xlarge	16384	160	0		8	1.0	True

2、列出可用的镜像

nova image-list

ID	Name	Status	Server
2ffcaa67-1e22-4ffe-8b02-a60d4717a457	CentOS7	ACTIVE	
64cedd77-6f5f-4c62-916b-2c96acd037ff	cirros-0.3.3-x86_64	ACTIVE	
267d5257-c68e-4b15-8862-3ea2c9d0f79b	fedora-20.x86_64	ACTIVE	

3、列出可用的网络

neutron net-list

id	name	subnets
10f74979-8ba7-4127-ab3d-a4e9e8c95b18	ext-net	db6e681f0-1287-4e68-aaa8-fa2c319049b8 10.0.0.0/24
d36f6eb0-e59a-42b9-9209-5547e022484b	demo-net	c7822bf6-5750-4f11-935b-3028cd95af04 192.168.2.0/24

4、列出可用的安全组

nova secgroup-list

Id	Name	Description
6883be19-cdb2-463e-baa9-1c25029b16ba	default	default

5、启动实例

```
# nova boot --flavor m1.tiny --image cirros-0.3.3-x86_64 --nic net-id=DEMO_NET_ID
--security-group default --key-name demo-key demo-instance1
```

例如： # nova boot --flavor m1.tiny --image cirros-0.3.3-x86_64 --nic net-id=d36f6eb0-e59a-42b9-9209-5547e022484b --security-group default --key-name demo-key demo-instance1

Property	Value
OS-DCF:diskConfig	MANUAL
OS-EXT-AZ:availability_zone	nova
OS-EXT-STS:power_state	0
OS-EXT-STS:task_state	scheduling
OS-EXT-STS:vm_state	building
OS-SRV-USG:launched_at	-
OS-SRV-USG:terminated_at	-
accessIPv4	
accessIPv6	
adminPass	mD6Sp9gvKuTc
config_drive	
created	2014-11-27T09:18:02Z
flavor	m1.tiny (1)
hostId	
id	3155cc2d-c6b2-4f11-8403-9ce122ebb4a1
image	cirros-0.3.3-x86_64 (64cedd77-6f5f-4c62-916b-2c96acd037ff)
key_name	demo-key
metadata	{}
name	demo-instance1
os-extended-volumes:volumes_attached	[]
progress	0
security_groups	default
status	BUILD
tenant_id	a59e18303bc246eb92b86a1492db462b
updated	2014-11-27T09:18:03Z
user_id	0766355ceb294941b5ce5ec7017a4d81



6、查看实例状态

```
# nova list
```

ID	Name	Status	Task State	Power State	Networks
8dece18f-ef0c-41fd-9fc4-8b88b7e2c533	Test server	SHUTOFF	-	Shutdown	demo-net=192.168.2.6
3155cc2d-c6b2-4f11-8403-9ce122ebb4a1	demo-instance1	ACTIVE	-	Running	demo-net=192.168.2.15

通过虚拟控制台访问你的实例

获取用于访问你的实例的Virtual Network Computing (VNC) 会话 URL，并通过浏览器访问：

```
# nova get-vnc-console demo-instance1 novnc
```

Type	Url
novnc	http://controller.nice.com:6080/vnc_auto.html?token=397d9f91-5a75-4ef1-9e8a-fbb36526c751

确保你的客户端能够解析controller节点的FQDN名。

noVNC - Mozilla Firefox

noVNC

controller.nice.com:6080/vnc_auto.html?token=397

Connected (unencrypted) to: QEMU (instance-0000000e) Send CtrlAltDel

```
[ 1.428312] cpuidle: using governor ladder
[ 1.434053] cpuidle: using governor menu
[ 1.439467] EFI Variables Facility v0.08 2004-May-17
[ 1.446851] TCP cubic registered
[ 1.451641] NET: Registered protocol family 10
[ 1.458416] NET: Registered protocol family 17
[ 1.464466] Registering the dns_resolver key type
[ 1.470761] registered taskstats version 1
[ 1.481506]   Magic number: 6:285:324
[ 1.487453] tty tty49: hash matches
[ 1.492813] acpi PNP0B00:00: hash matches
[ 1.499341] rtc_cmos 00:01: setting system clock to 2014-11-27 09:19:30 UTC (
1417079970)
[ 1.510561] BIOS EDD facility v0.16 2004-Jun-25, 0 devices found
[ 1.519441] EDD information not available.
[ 1.529192] Freeing unused kernel memory: 924k freed
[ 1.536080] Write protecting the kernel read-only data: 12288k
[ 1.547319] Freeing unused kernel memory: 1600k freed
[ 1.557597] Freeing unused kernel memory: 1188k freed

further output written to /dev/ttyS0

login as 'cirros' user. default password: 'cubswin:}'. use 'sudo' for root.
cirros login:
```

确认能够连接demo-net租户网络的网关

```
# ping -c 4 192.168.2.1
```

```
$ ping -c 4 192.168.2.1
PING 192.168.2.1 (192.168.2.1): 56 data bytes
64 bytes from 192.168.2.1: seq=0 ttl=64 time=1.776 ms
64 bytes from 192.168.2.1: seq=1 ttl=64 time=1.829 ms
64 bytes from 192.168.2.1: seq=2 ttl=64 time=0.886 ms
64 bytes from 192.168.2.1: seq=3 ttl=64 time=0.628 ms

--- 192.168.2.1 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 0.628/1.279/1.829 ms
```

确认能够连接ext-net外部网络

```
# ping -c 4 10.0.0.1
```

```
$ ping -c 4 10.0.0.1
PING 10.0.0.1 (10.0.0.1): 56 data bytes
64 bytes from 10.0.0.1: seq=0 ttl=127 time=2.427 ms
64 bytes from 10.0.0.1: seq=1 ttl=127 time=1.044 ms
64 bytes from 10.0.0.1: seq=2 ttl=127 time=0.804 ms
64 bytes from 10.0.0.1: seq=3 ttl=127 time=1.016 ms

--- 10.0.0.1 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 0.804/1.322/2.427 ms
```

远程访问你的实例

1、添加规则到名为default的安全组：

a.允许ICMP协议(ping)：

```
# nova secgroup-add-rule default icmp -1 -1 0.0.0.0/0
```

IP Protocol	From Port	To Port	IP Range	Source Group
icmp	-1	-1	0.0.0.0/0	

b.允许ssh协议：

```
# nova secgroup-add-rule default tcp 22 22 0.0.0.0/0
```

IP Protocol	From Port	To Port	IP Range	Source Group
tcp	22	22	0.0.0.0/0	

2、在ext-net外部网络创建一个浮动IP地址：

```
# neutron floatingip-create ext-net
```

Field	Value
fixed_ip_address	
floating_ip_address	10.0.0.110
floating_network_id	10f74979-8ba7-4127-ab3d-a4e9e8c95b18
id	f2c1636d-62f9-4e7d-ae0c-dd30f88ea2bb
port_id	
router_id	
status	DOWN
tenant_id	a59e18303bc246eb92b86a1492db462b

3、分配浮动IP地址到你的实例：

```
# nova floating-ip-associate demo-instance1 10.0.0.110
```

4、检查你的浮动IP地址状态：

```
# nova list
```

ID	Name	Status	Task State	Power State	Networks
8dece18f-ef0c-41fd-9fc4-8b88b7e2c533	Test server	SHUTOFF	-	Shutdown	demo-net=192.168.2.6
3155cc2d-c6b2-4f11-8403-9ce122ebb4a1	demo-instance1	ACTIVE	-	Running	demo-net=192.168.2.15, 10.0.0.110

5、从任何一个可以和ext-net网络通讯的主机测试连通性

```
# ping -c 4 10.0.0.110
```

```
root@localhost ~]# ping -c 4 10.0.0.110
PING 10.0.0.110 (10.0.0.110) 56(84) bytes of data:
64 bytes from 10.0.0.110: icmp_seq=1 ttl=63 time=3.97 ms
64 bytes from 10.0.0.110: icmp_seq=2 ttl=63 time=1.22 ms
64 bytes from 10.0.0.110: icmp_seq=3 ttl=63 time=1.00 ms
64 bytes from 10.0.0.110: icmp_seq=4 ttl=63 time=0.983 ms

--- 10.0.0.110 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3005ms
rtt min/avg/max/mdev = 0.983/1.794/3.973/1.261 ms
```

6、从任何一个可以和ext-net网络通讯的主机上通过ssh访问实例

```
# ssh cirros@10.0.0.110
```

或将私钥文件复制到外部客户端，通过密钥对验证登录

```
# ssh -i id_rsa cirros@10.0.0.110
```

为你的实例添加额外的云硬盘

如果你的环境中包含块存储服务，则你可以为你的实例添加云硬盘。

1、执行demo环境变量脚本

```
# source demo-openrc.sh
```

2、列出卷

```
# nova volume-list
```

ID	Status	Display Name	Size	Volume Type	Attached to
4f6aaa9c-5fd6-4c7f-8299-dc58fbf33347	available	lvm1test	5	lvm1	
83f0abfb-4496-4d22-a0ea-69aa5f77d27c	available	lvm1test	5	lvm1	
e2e89bd6-5cbe-4c41-b4d9-265ef20c1f56	available	glustertest	10	glusterfs1	
bc97835b-5ebf-418a-ba02-45adfdf3129a	available	demo-volume1	1	None	

3、附加demo-volume1卷到demo-instance1实例：

```
# nova volume-attach demo-instance1 158bea89-07db-4ac2-8115-66c0d6a4bb48
```

Property	Value
device	/dev/vdb
id	bc97835b-5ebf-418a-ba02-45adfdf3129a
serverId	3155cc2d-c6b2-4f11-8403-9ce122ebb4a1
volumeId	bc97835b-5ebf-418a-ba02-45adfdf3129a

4、列出卷

```
# nova volume-list
```

ID	Status	Display Name	Size	Volume Type	Attached to
4f6aaa9c-5fd6-4c7f-8299-dc58fbf33347	available	lvm1test	5	lvm1	
83f0abfb-4496-4d22-a0ea-69aa5f77d27c	available	lvm1test	5	lvm1	
e2e89bd6-5cbe-4c41-b4d9-265ef20c1f56	available	glustertest	10	glusterfs1	
bc97835b-5ebf-418a-ba02-45adfdf3129a	attaching	demo-volume1	1	None	

5、从任何一个可以和ext-net网络通讯的主机上通过ssh访问实例，并使用fdisk命令确认新存储。

```
# ssh cirros@10.0.0.110
```

```
$ sudo fdisk -l
Disk /dev/vda: 1073 MB, 1073741824 bytes
255 heads, 63 sectors/track, 130 cylinders, total 2097152 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00000000

   Device Boot      Start         End      Blocks   Id  System
/dev/vda1    *        16065      2088449    1036192+   83   Linux

Disk /dev/vdb: 1073 MB, 1073741824 bytes
16 heads, 63 sectors/track, 2080 cylinders, total 2097152 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00000000

Disk /dev/vdb doesn't contain a valid partition table
```

