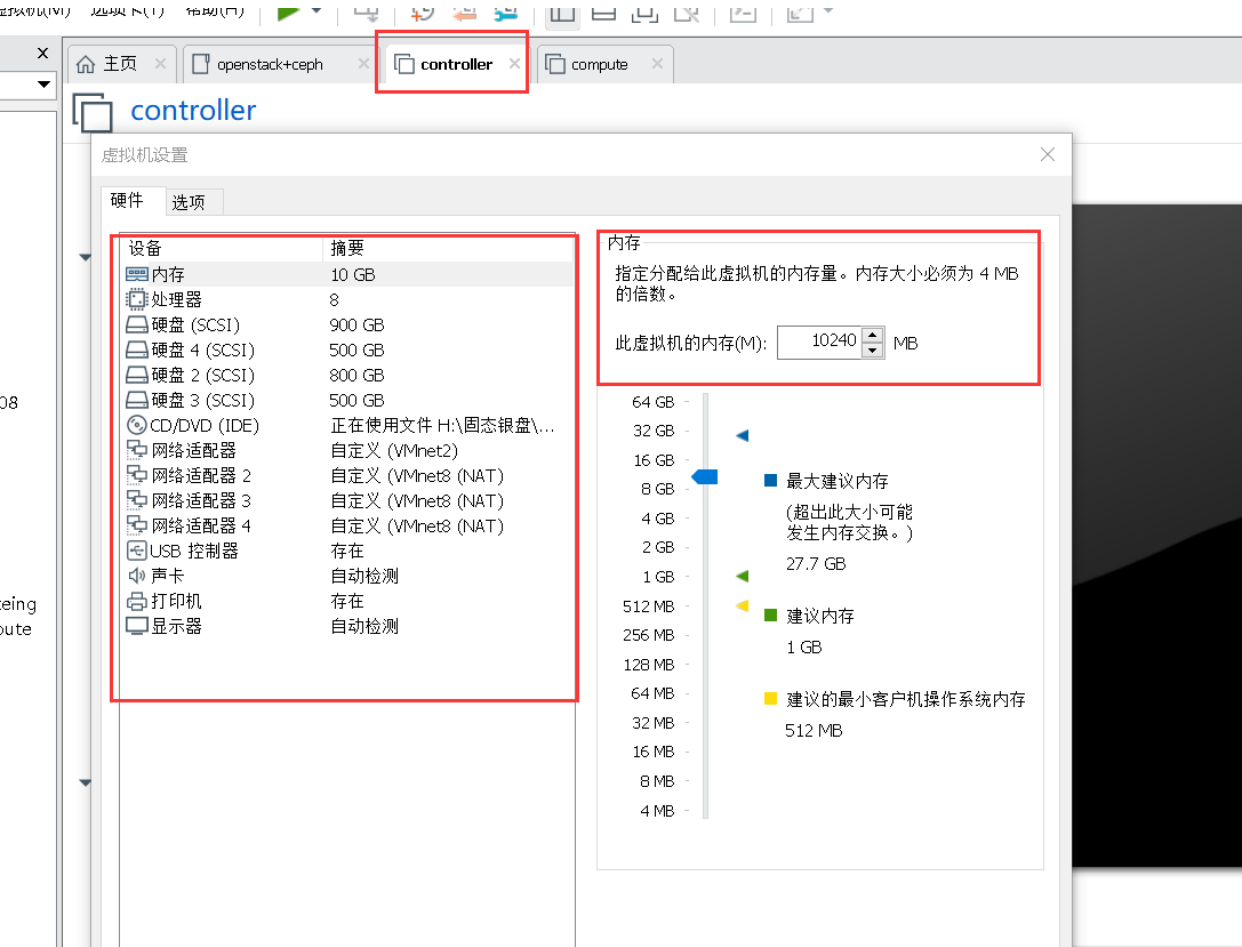


本次实验搭建openstack版本为T版：

操作系统：CentOS-7-x86_64-DVD-2009 最小化安装

主机名	网卡1	网卡2	网卡3	网卡4	磁盘1	磁盘2	磁盘3	磁盘4
compute	仅主机模式	net模式	net模式	net模式	900G	800G	500G	500G
controller	仅主机模式	net模式	net模式	net模式	900G	800G	500G	500G



compute

虚拟机设置

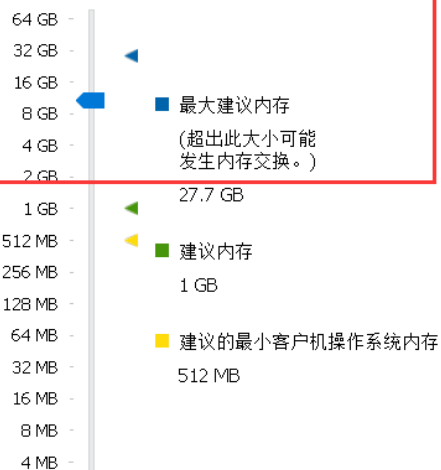
硬件 选项

设备	摘要
内存	10 GB
处理器	8
硬盘 (SCSI)	900 GB
硬盘 3 (SCSI)	500 GB
硬盘 4 (SCSI)	500 GB
硬盘 2 (SCSI)	800 GB
CD/DVD (IDE)	正在使用文件 H:\固态银盘\...
网络适配器	自定义 (VMnet2)
网络适配器 2	自定义 (VMnet8 (NAT))
网络适配器 3	自定义 (VMnet8 (NAT))
网络适配器 4	自定义 (VMnet8 (NAT))
USB 控制器	存在
声卡	自动检测
打印机	存在
显示器	自动检测

内存

指定分配给此虚拟机的内存量。内存大小必须为 4 MB 的倍数。

此虚拟机的内存(M): MB





一、基础配置：修改主机名、配置IP、关闭防火墙、换源等。

```
1 controller compute等同操作
2 [root@localhost ~]# hostnamectl set-hostname compute
3 [root@localhost ~]# systemctl stop firewalld
4 [root@localhost ~]# systemctl disable firewalld
5 Removed symlink /etc/systemd/system/multi-
  user.target.wants/firewalld.service.
6 Removed symlink /etc/systemd/system/dbus-
  org.fedoraproject.FirewallD1.service.
7 [root@localhost ~]#
8
9 [root@localhost ~]# vi /etc/sysconfig/selinux
10 [root@localhost ~]#
11 [root@localhost ~]# setenforce 0
12 [root@localhost ~]# cat /etc/sysconfig/selinux
13
14 # This file controls the state of SELinux on the system.
15 # SELINUX= can take one of these three values:
16 # enforcing - SELinux security policy is enforced.
17 # permissive - SELinux prints warnings instead of enforcing.
18 # disabled - No SELinux policy is loaded.
```

```
19 SELINUX=disabled
20 # SELINUXTYPE= can take one of three values:
21 # targeted - Targeted processes are protected,
22 # minimum - Modification of targeted policy. Only selected processes are
re protected.
23 # mls - Multi Level Security protection.
24 SELINUXTYPE=targeted
25
26
27 [root@controller ~]# ip a
28 1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN gr
oup default qlen 1000
29   link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
30   inet 127.0.0.1/8 scope host lo
31   valid_lft forever preferred_lft forever
32   inet6 ::1/128 scope host
33   valid_lft forever preferred_lft forever
34 2: ens33: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast
state UP group default qlen 1000
35   link/ether 00:0c:29:ca:b5:4d brd ff:ff:ff:ff:ff:ff
36   inet 192.168.100.147/24 brd 192.168.100.255 scope global noprefixrou
te dynamic ens33
37   valid_lft 1392sec preferred_lft 1392sec
38   inet6 fe80::85fe:953:9b99:cbf5/64 scope link noprefixroute
39   valid_lft forever preferred_lft forever
40 3: ens34: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast
state UP group default qlen 1000
41   link/ether 00:0c:29:ca:b5:57 brd ff:ff:ff:ff:ff:ff
42   inet 192.168.73.33/24 brd 192.168.73.255 scope global noprefixroute c
ynamic ens34
43   valid_lft 1393sec preferred_lft 1393sec
44   inet6 fe80::c6cd:20fb:39dc:f3c3/64 scope link noprefixroute
45   valid_lft forever preferred_lft forever
46 4: ens35: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast
state UP group default qlen 1000
47   link/ether 00:0c:29:ca:b5:61 brd ff:ff:ff:ff:ff:ff
48   inet 192.168.73.22/24 brd 192.168.73.255 scope global noprefixroute c
ynamic ens35
49   valid_lft 1393sec preferred_lft 1393sec
50   inet6 fe80::454a:e9a4:8e3a:8026/64 scope link noprefixroute
51   valid_lft forever preferred_lft forever
52 5: ens36: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast
state UP group default qlen 1000
```

```
53 link/ether 00:0c:29:ca:b5:6b brd ff:ff:ff:ff:ff:ff
54 inet 192.168.73.38/24 brd 192.168.73.255 scope global noprefixroute c
ynamic ens36
55 valid_lft 1393sec preferred_lft 1393sec
56 inet6 fe80::ff85:a272:aa89:b205/64 scope link noprefixroute
57 valid_lft forever preferred_lft forever
58
59
60
61 [root@compute ~]# ip a
62 1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN gr
oup default qlen 1000
63 link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
64 inet 127.0.0.1/8 scope host lo
65 valid_lft forever preferred_lft forever
66 inet6 ::1/128 scope host
67 valid_lft forever preferred_lft forever
68 2: ens33: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast
state UP group default qlen 1000
69 link/ether 00:0c:29:4b:96:64 brd ff:ff:ff:ff:ff:ff
70 inet 192.168.100.148/24 brd 192.168.100.255 scope global noprefixrout
e dynamic ens33
71 valid_lft 1444sec preferred_lft 1444sec
72 inet6 fe80::8987:5ea3:70a9:a911/64 scope link noprefixroute
73 valid_lft forever preferred_lft forever
74 3: ens34: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast
state UP group default qlen 1000
75 link/ether 00:0c:29:4b:96:6e brd ff:ff:ff:ff:ff:ff
76 inet 192.168.73.24/24 brd 192.168.73.255 scope global noprefixroute c
ynamic ens34
77 valid_lft 1450sec preferred_lft 1450sec
78 inet6 fe80::3e0b:baad:4db3:6cf8/64 scope link noprefixroute
79 valid_lft forever preferred_lft forever
80 4: ens35: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast
state UP group default qlen 1000
81 link/ether 00:0c:29:4b:96:78 brd ff:ff:ff:ff:ff:ff
82 inet 192.168.73.25/24 brd 192.168.73.255 scope global noprefixroute c
ynamic ens35
83 valid_lft 1450sec preferred_lft 1450sec
84 inet6 fe80::dd47:d7e4:6188:31f4/64 scope link noprefixroute
85 valid_lft forever preferred_lft forever
```

```

86 5: ens36: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast
state UP group default qlen 1000
87 link/ether 00:0c:29:4b:96:82 brd ff:ff:ff:ff:ff:ff
88 inet 192.168.73.36/24 brd 192.168.73.255 scope global noprefixroute c
ynamic ens36
89 valid_lft 1450sec preferred_lft 1450sec
90 inet6 fe80::75a3:d244:5cfe:c7ba/64 scope link noprefixroute
91 valid_lft forever preferred_lft forever
92
93 配置hosts映射
94 [root@controller ~]# echo "192.168.100.147 controller" >>/etc/hosts
95 [root@controller ~]# echo "192.168.100.148 compute" >>/etc/hosts
96 [root@controller ~]#
97

```

二、时间同步

```

1 [root@compute ~]# yum install chrony vim -y
2

```

controller

```

#server 2.centos.pool.ntp.org iburst
#server 3.centos.pool.ntp.org iburst
server controller iburst

# Record the rate at which the system clock gains/loss
driftfile /var/lib/chrony/drift

# Allow the system clock to be stepped in the first th
# if its offset is larger than 1 second.
makestep 1.0 3

# Enable kernel synchronization of the real-time clock
rtcsync

# Enable hardware timestamping on all interfaces that
#hwtimestamp *

# Increase the minimum number of selectable sources re
# the system clock.
#minsources 2

# Allow NTP client access from local network.
allow 192.168.100.0/24

# Serve time even if not synchronized to a time source
local stratum 10

# Specify file containing keys for NTP authentication

```

compute

```
192.168.100.147 192.168.100.148 x
#server 3.centos.pool.ntp.org iburst
server controller iburst
# Record the rate at which the system clock gains/losses time.
driftfile /var/lib/chrony/drift

# Allow the system clock to be stepped in the first three updates
# if its offset is larger than 1 second.
makestep 1.0 3

# Enable kernel synchronization of the real-time clock (RTC).
rtcsync

# Enable hardware timestamping on all interfaces that support it
#hwtimestamp *

# Increase the minimum number of selectable sources required to
# adjust the system clock.
#minsources 2
```

controller 和 compute

```
1 [root@controller ~]# systemctl restart chronyd
2 [root@controller ~]# systemctl enable chronyd
3 [root@controller ~]# chronyc sources
4 210 Number of sources = 1
5 MS Name/IP address Stratum Poll Reach LastRx Last sample
6 =====
7 ^* controller 10 6 377 51 -391ns[-3913ns] +/- 18us
8 [root@controller ~]#
9 [root@controller ~]# clock -w
10
11 [root@compute ~]# systemctl restart chronyd
12 [root@compute ~]# systemctl enable chronyd
13 [root@compute ~]# chronyc sources
14 210 Number of sources = 1
15 MS Name/IP address Stratum Poll Reach LastRx Last sample
16 =====
17 ^* controller 11 6 17 11 +614ns[-17us] +/- 241us
18 [root@compute ~]#
19 [root@compute ~]# clock -w
```

三、安装openstack-T版源

controller 和 compute等同操作

```
1 [root@controller ~]# yum install centos-release-openstack-train -y
```

```
2 [root@controller ~]# yum upgrade -y
3 [root@controller ~]# yum install python-openstackclient -y
4 [root@controller ~]# yum install openstack-selinux -y
```

```
1 [root@compute ~]# yum install centos-release-openstack-train -y
2 [root@compute ~]# yum upgrade -y
3 [root@compute ~]# yum install python-openstackclient -y
4 [root@compute ~]# yum install openstack-selinux -y
```

关机打快照

接下来的配置会在controller节点配置（注意细心）

四、mysql等基础服务

1.安装数据库

```
1 重置数据库
2 [root@controller ~]# yum install mariadb mariadb-server python2-PyMySQL
L -y
3 [root@controller ~]# cat /etc/my.cnf.d/openstack.cnf
4 [mysqld]
5
6 bind-address = 192.168.100.147
7
8 default-storage-engine = innodb
9
10 innodb_file_per_table = on
11
12 max_connections = 4096
13
14 collation-server = utf8_general_ci
15
16 character-set-server = utf8
17 [root@controller ~]# systemctl enable mariadb.service
18 Created symlink from /etc/systemd/system/mysql.service to /usr/lib/sy
temd/system/mariadb.service.
19 Created symlink from /etc/systemd/system/mysqld.service to /usr/lib/sy
stemd/system/mariadb.service.
20 Created symlink from /etc/systemd/system/multi-user.target.wants/maria
db.service to /usr/lib/systemd/system/mariadb.service.
21 [root@controller ~]# systemctl start mariadb.service
22 [root@controller ~]#
23
```



```
1 重置数据库密码: 000000
2 [root@controller ~]# mysql_secure_installation
3
4 NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
5 SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!
6
7 In order to log into MariaDB to secure it, we'll need the current
8 password for the root user. If you've just installed MariaDB, and
9 you haven't set the root password yet, the password will be blank,
10 so you should just press enter here.
11
12 Enter current password for root (enter for none):
13 OK, successfully used password, moving on...
14
15 Setting the root password ensures that nobody can log into the MariaDB
16 root user without the proper authorisation.
17
18 Set root password? [Y/n] y
19 New password:
20 Re-enter new password:
21 Password updated successfully!
22 Reloading privilege tables..
23 ... Success!
24
25
26 By default, a MariaDB installation has an anonymous user, allowing any
27 one
28 to log into MariaDB without having to have a user account created for
29 them. This is intended only for testing, and to make the installation
30 go a bit smoother. You should remove them before moving into a
31 production environment.
32
33 Remove anonymous users? [Y/n] y
34 ... Success!
35
36 Normally, root should only be allowed to connect from 'localhost'. This
37 ensures that someone cannot guess at the root password from the network.
```

```

38 Disallow root login remotely? [Y/n] y
39 ... Success!
40
41 By default, MariaDB comes with a database named 'test' that anyone can
42 access. This is also intended only for testing, and should be removed
43 before moving into a production environment.
44
45 Remove test database and access to it? [Y/n] y
46 - Dropping test database...
47 ... Success!
48 - Removing privileges on test database...
49 ... Success!
50
51 Reloading the privilege tables will ensure that all changes made so far
52 will take effect immediately.
53
54 Reload privilege tables now? [Y/n] y
55 ... Success!
56
57 Cleaning up...
58
59 All done! If you've completed all of the above steps, your MariaDB
60 installation should now be secure.
61
62 Thanks for using MariaDB!

```

2.安装消息队列*rabbitmq*

```

1 [root@controller ~]# yum install rabbitmq-server -y
2 [root@controller ~]# systemctl start rabbitmq-server.service
3 [root@controller ~]# systemctl enable rabbitmq-server.service
4 Created symlink from /etc/systemd/system/multi-user.target.wants/rabbitmq-server.service to /usr/lib/systemd/system/rabbitmq-server.service
5 [root@controller ~]# rabbitmqctl add_user openstack 000000 ##创建openstack用户并设置000000密码
6 Creating user "openstack"
7 [root@controller ~]# rabbitmqctl set_permissions openstack ".*" ".*" ".*" ##赋予权限
8 Setting permissions for user "openstack" in vhost "/"
9 [root@controller ~]#
10 [root@controller ~]# yum install net-tools
11

```

```
[root@controller ~]# netstat -tnlup
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        0      0 0.0.0.0:25672          0.0.0.0:*               LISTEN      8083/beam.smp
tcp        0      0 192.168.100.147:3306  0.0.0.0:*               LISTEN      7919/mysqld
tcp        0      0 0.0.0.0:4369          0.0.0.0:*               LISTEN      1/systemd
tcp        0      0 0.0.0.0:22            0.0.0.0:*               LISTEN      1089/sshd
tcp        0      0 127.0.0.1:25          0.0.0.0:*               LISTEN      1364/master
tcp6       0      0 :::5672               :::*                   LISTEN      8083/beam.smp
tcp6       0      0 :::22                 :::*                   LISTEN      1089/sshd
tcp6       0      0 :::1:25               :::*                   LISTEN      1364/master
udp        0      0 0.0.0.0:68            0.0.0.0:*               777/dhclient
udp        0      0 0.0.0.0:68            0.0.0.0:*               679/dhclient
udp        0      0 0.0.0.0:68            0.0.0.0:*               676/dhclient
udp        0      0 0.0.0.0:68            0.0.0.0:*               670/dhclient
udp        0      0 0.0.0.0:123           0.0.0.0:*               565/chronyd
udp        0      0 127.0.0.1:323         0.0.0.0:*               565/chronyd
udp6       0      0 :::1:323              :::*                   565/chronyd
[root@controller ~]#
```

3.安装memcache

```
1 [root@controller ~]# yum install memcached python-memcached -y
2 [root@controller ~]# cat /etc/sysconfig/memcached
3 PORT="11211"
4 USER="memcached"
5 MAXCONN="1024"
6 CACHESIZE="64"
7 OPTIONS="-l 127.0.0.1,:::1,controller"
8
9 [root@controller ~]# systemctl start memcached.service
10 [root@controller ~]# systemctl enable memcached.service
11 Created symlink from /etc/systemd/system/multi-user.target.wants/memcached.service to /usr/lib/systemd/system/memcached.service.
```

```
[root@controller ~]# netstat -tnlup
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        0      0 0.0.0.0:25672          0.0.0.0:*               LISTEN      8083/beam.smp
tcp        0      0 192.168.100.147:3306  0.0.0.0:*               LISTEN      7919/mysqld
tcp        0      0 192.168.100.147:11211 0.0.0.0:*               LISTEN      9195/memcached
tcp        0      0 127.0.0.1:11211        0.0.0.0:*               LISTEN      9195/memcached
tcp        0      0 0.0.0.0:4369          0.0.0.0:*               LISTEN      1/systemd
tcp        0      0 0.0.0.0:22            0.0.0.0:*               LISTEN      1089/sshd
tcp        0      0 127.0.0.1:25          0.0.0.0:*               LISTEN      1364/master
tcp6       0      0 :::5672               :::*                   LISTEN      8083/beam.smp
tcp6       0      0 :::1:11211            :::*                   LISTEN      9195/memcached
tcp6       0      0 :::22                 :::*                   LISTEN      1089/sshd
tcp6       0      0 :::1:25               :::*                   LISTEN      1364/master
udp        0      0 0.0.0.0:68            0.0.0.0:*               777/dhclient
udp        0      0 0.0.0.0:68            0.0.0.0:*               679/dhclient
udp        0      0 0.0.0.0:68            0.0.0.0:*               676/dhclient
udp        0      0 0.0.0.0:68            0.0.0.0:*               670/dhclient
udp        0      0 0.0.0.0:123           0.0.0.0:*               565/chronyd
udp        0      0 127.0.0.1:323         0.0.0.0:*               565/chronyd
udp6       0      0 :::1:323              :::*                   565/chronyd
[root@controller ~]#
```

4.安装etcd

```
1 [root@controller ~]# yum install etcd -y
2
3 [root@controller ~]# vim /etc/etcd/etcd.conf
4 ETCD_DATA_DIR="/var/lib/etcd/default.etcd"
5 ETCD_LISTEN_PEER_URLS="http://192.168.100.147:2380"
6 ETCD_LISTEN_CLIENT_URLS="http://192.168.100.147:2379"
```

```

7 ETCD_NAME="controller"
8 ETCD_INITIAL_ADVERTISE_PEER_URLS="http://192.168.100.147:2380"
9 ETCD_ADVERTISE_CLIENT_URLS="http://192.168.100.147:2379"
10 ETCD_INITIAL_CLUSTER="controller=http://192.168.100.147:2380"
11 ETCD_INITIAL_CLUSTER_TOKEN="etcd-cluster-01"
12 ETCD_INITIAL_CLUSTER_STATE="new"
13
14 [root@controller ~]# systemctl start etcd
15 [root@controller ~]# systemctl enable etcd
16 Created symlink from /etc/systemd/system/multi-
    user.target.wants/etcd.service to /usr/lib/systemd/system/etcd.service.

```

```

[root@controller ~]# netstat -tnlup
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        0      0 0.0.0.0:25672          0.0.0.0:*               LISTEN      8083/beam.smp
tcp        0      0 192.168.100.147:3306   0.0.0.0:*               LISTEN      7919/mysqld
tcp        0      0 192.168.100.147:2379   0.0.0.0:*               LISTEN      9653/etcd
tcp        0      0 192.168.100.147:11211   0.0.0.0:*               LISTEN      9195/memcached
tcp        0      0 127.0.0.1:11211        0.0.0.0:*               LISTEN      9195/memcached
tcp        0      0 192.168.100.147:2380   0.0.0.0:*               LISTEN      9653/etcd
tcp        0      0 0.0.0.0:4369           0.0.0.0:*               LISTEN      1/systemd
tcp        0      0 0.0.0.0:22             0.0.0.0:*               LISTEN      1089/sshd
tcp        0      0 127.0.0.1:25           0.0.0.0:*               LISTEN      1364/master
tcp6       0      0 :::5672                :::*                   LISTEN      8083/beam.smp
tcp6       0      0 :::11211               :::*                   LISTEN      9195/memcached
tcp6       0      0 :::22                  :::*                   LISTEN      1089/sshd
tcp6       0      0 :::1:25                :::*                   LISTEN      1364/master
udp        0      0 0.0.0.0:68             0.0.0.0:*               LISTEN      777/dhclient
udp        0      0 0.0.0.0:68             0.0.0.0:*               LISTEN      679/dhclient
udp        0      0 0.0.0.0:68             0.0.0.0:*               LISTEN      676/dhclient
udp        0      0 0.0.0.0:68             0.0.0.0:*               LISTEN      670/dhclient
udp        0      0 0.0.0.0:123            0.0.0.0:*               LISTEN      565/chronyd
udp        0      0 127.0.0.1:323          0.0.0.0:*               LISTEN      565/chronyd
udp6       0      0 :::1:323               :::*                   LISTEN      565/chronyd

```

关机打快照

五、keystone服务

1.创建keystone数据库

```

1 [root@controller ~]# mysql -u root -p000000
2 Welcome to the MariaDB monitor. Commands end with ; or \g.
3 Your MariaDB connection id is 8
4 Server version: 10.3.20-MariaDB MariaDB Server
5
6 Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.
7
8 Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
9
10 MariaDB [(none)]>
11 MariaDB [(none)]> CREATE DATABASE keystone;
12 Query OK, 1 row affected (0.000 sec)
13

```

```

14 MariaDB [(none)]> GRANT ALL PRIVILEGES ON keystone.* TO 'keystone'@'localhost' IDENTIFIED BY '000000';
15 Query OK, 0 rows affected (0.001 sec)
16
17 MariaDB [(none)]> GRANT ALL PRIVILEGES ON keystone.* TO 'keystone'@'%' IDENTIFIED BY '000000';
18 Query OK, 0 rows affected (0.000 sec)
19
20 MariaDB [(none)]> flush privileges;
21 Query OK, 0 rows affected (0.000 sec)
22
23 MariaDB [(none)]> exit
24 Bye

```

2.安装keyston

```

1 [root@controller ~]# yum install openstack-keystone httpd mod_wsgi -y
2 切记在这里千万不要安装epel.repo源
3 [root@controller ~]# cp /etc/keystone/keystone.conf /etc/keystone/keystone.conf.bak
4 [root@controller ~]# grep -Ev '^$|#' /etc/keystone/keystone.conf.bak >/etc/keystone/keystone.conf
5 [root@controller ~]#
6
7 [root@controller ~]# vim /etc/keystone/keystone.conf
8 [database]
9 connection = mysql+pymysql://keystone:000000@controller/keystone
10 [token]
11 provider = fernet
12 填充数据库并查看数据表
13 [root@controller ~]# su -s /bin/sh -c "keystone-manage db_sync" keystone
14 [root@controller ~]# mysql keystone -p000000 -e 'show tables'
15 +-----+
16 | Tables_in_keystone |
17 +-----+
18 | access_rule |
19 | access_token |
20 | application_credential |
21 | application_credential_access_rule |
22 | application_credential_role |
23 | assignment |
24 | config_register |

```

```

25 | consumer |
26 | credential |
27 | endpoint |
28 | endpoint_group |
29 | federated_user |
30 | federation_protocol |
31 | group |
32 | id_mapping |
33 | identity_provider |
34
35 初始化数据库密钥
36 [root@controller ~]# keystone-manage fernet_setup --keystone-user keystone --keystone-group keystone
37 [root@controller ~]# keystone-manage credential_setup --keystone-user keystone --keystone-group keystone
38 [root@controller ~]# keystone-manage bootstrap --bootstrap-password 00000000 --bootstrap-admin-url http://controller:5000/v3/ --bootstrap-intern
al-url http://controller:5000/v3/ --bootstrap-public-url http://controller:5000/v3/ --bootstrap-region-id RegionOne
39 [root@controller ~]#
40
41 [root@controller ~]# vim /etc/httpd/conf/httpd.conf
42 ServerName controller ##修改
43 创建软链接并设置开机并自启
44 [root@controller ~]# ln -s /usr/share/keystone/wsgi-keystone.conf /etc/httpd/conf.d/
45 [root@controller ~]# systemctl restart httpd.service
46 [root@controller ~]# systemctl enable httpd.service
47 Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.service.
48 [root@controller ~]# openstack domain list
49 +-----+-----+-----+-----+
50 | ID | Name | Enabled | Description |
51 +-----+-----+-----+-----+
52 | default | Default | True | The default domain |
53 +-----+-----+-----+-----+
54 [root@controller ~]# openstack project list
55 +-----+-----+
56 | ID | Name |
57 +-----+-----+
58 | 883c664aed47476d93e306deb5ea24f2 | admin |
59 +-----+-----+

```

```

60 [root@controller ~]# openstack user list
61 +-----+-----+
62 | ID | Name |
63 +-----+-----+
64 | dc2a6ca49a97440480d65ae67a18b11a | admin |
65 +-----+-----+
66 创建服务所使用的项目
67 [root@controller ~]# openstack project create --domain default --description "Service Project" service
68 +-----+-----+
69 | Field | Value |
70 +-----+-----+
71 | description | Service Project |
72 | domain_id | default |
73 | enabled | True |
74 | id | 467dfb18208544e2896ca68619b0fb2a |
75 | is_domain | False |
76 | name | service |
77 | options | {} |
78 | parent_id | default |
79 | tags | [] |
80 +-----+-----+
81 创建user角色
82 [root@controller ~]# openstack role create user
83 +-----+-----+
84 | Field | Value |
85 +-----+-----+
86 | description | None |
87 | domain_id | None |
88 | id | 90979d7dc73446f3a8aee50cd2221e45 |
89 | name | user |
90 | options | {} |
91 +-----+-----+
92 [root@controller ~]# unset OS_AUTH_URL OS_PASSWORD
93 [root@controller ~]#
94 [root@controller ~]# openstack --os-auth-url http://controller:5000/v3 --os-project-domain-name default --os-user-domain-name default --os-project-name admin --os-username admin token issue
95 Password:
96 Password:

```

```

97  +-----+-----+
-----+
98  | Field | Value |
99  +-----+-----+
-----+

100 | expires | 2021-11-08T12:50:57+0000 |
101 | id | gAAAAABhiQ8h1VKD0DrqoATCYzf_U2dG15ef1e_MfVpywdm3EK82bFRb4cTwDo
K9Um5pYWE7V6RxDyZjMtn2lyfNhGjxITzgY5V4lr4FXePqBoXVmkUOn1z10EFssPZ_uzsmTJJ
KnPJTnuLBCst4un4A3kHg5UBtBchx01alrrmeKmbG60JBeD0 |
102 | project_id | 883c664aed47476d93e306deb5ea24f2 |
103 | user_id | dc2a6ca49a97440480d65ae67a18b11a |
104 +-----+-----+
-----+

105 [root@controller ~]#
106 [root@controller ~]# cat admin-openrc.sh 配置环境变量
107 export OS_PROJECT_DOMAIN_NAME=default
108 export OS_USER_DOMAIN_NAME=default
109 export OS_PROJECT_NAME=admin
110 export OS_USERNAME=admin
111 export OS_PASSWORD=000000
112 export OS_AUTH_URL=http://controller:5000/v3
113 export OS_IDENTITY_API_VERSION=3
114 export OS_IMAGE_API_VERSION=2
115
116 [root@controller ~]# . admin-openrc.sh ##验证变量
117 [root@controller ~]# openstack token issue
118 +-----+-----+
-----+

119 | Field | Value |
120 +-----+-----+
-----+

121 | expires | 2021-11-08T12:53:02+0000 |
122 | id | gAAAAABhiQ-epxmjPxjmfBiyhCW-QHv64YxsAZkcfC9ibzo0MDzbzCY0ORXDd9
ro2mFX42EtyK2DS2Ar7fE8qBaIP0sl76eKb-8F1NaWN_R0fRimESYtlytN8mGY0dQ50PgtNr
R7B1-zEdhHJZEbvcViL8at9_EwMp_kC_MLVJBk_ri000fDFc |
123 | project_id | 883c664aed47476d93e306deb5ea24f2 |
124 | user_id | dc2a6ca49a97440480d65ae67a18b11a |
125 +-----+-----+
-----+

```



```
-----+
1 [root@controller ~]# curl http://controller:5000 ##查看能否得到API
2 {"versions": {"values": [{"status": "stable", "updated": "2019-07-19T00:00:00Z", "media-types": [{"base": "application/json", "type": "application/vnd.openstack.identity-v3+json"}], "id": "v3.13", "links": [{"href": "http://controller:5000/v3/", "rel": "self"}]}]}}
```

至此keyston部署完成（关机打快照）

六、glance安装

1.数据库配置

```
1 [root@controller ~]# mysql -u root -p000000
2 Welcome to the MariaDB monitor. Commands end with ; or \g.
3 Your MariaDB connection id is 8
4 Server version: 10.3.20-MariaDB MariaDB Server
5
6 Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.
7
8 Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
9
10 MariaDB [(none)]> CREATE DATABASE glance;
11 Query OK, 1 row affected (0.000 sec)
12
13 MariaDB [(none)]> GRANT ALL PRIVILEGES ON glance.* TO 'glance'@'localhost' IDENTIFIED BY '000000';
14 Query OK, 0 rows affected (0.001 sec)
15
16 MariaDB [(none)]> GRANT ALL PRIVILEGES ON glance.* TO 'glance'@'%' IDENTIFIED BY '000000';
17 Query OK, 0 rows affected (0.000 sec)
18
19 MariaDB [(none)]> flush privileges;
20 Query OK, 0 rows affected (0.000 sec)
21
22 MariaDB [(none)]> exit
23 Bye
```

安装并配置

```
1 [root@controller ~]# . admin-openrc.sh
2 创建一个glance用户
```

```

3 [root@controller ~]# openstack user create --domain default --password
000000 glance

4 +-----+-----+
5 | Field | Value |
6 +-----+-----+
7 | domain_id | default |
8 | enabled | True |
9 | id | ac9093ac589f4e4cacf357419e20bef5 |
10 | name | glance |
11 | options | {} |
12 | password_expires_at | None |
13 +-----+-----+
14 授权
15 [root@controller ~]# openstack role add --project service --user glance
admin
16 创建服务实体
17 [root@controller ~]# openstack service create --name glance --description
"OpenStack Image" image

18 +-----+-----+
19 | Field | Value |
20 +-----+-----+
21 | description | OpenStack Image |
22 | enabled | True |
23 | id | 0175c595f0844cc69fc68da494eae877 |
24 | name | glance |
25 | type | image |
26 +-----+-----+
27 创建镜像服务API访问端点
28 [root@controller ~]# openstack endpoint create --region RegionOne image
public http://controller:9292

29 +-----+-----+
30 | Field | Value |
31 +-----+-----+
32 | enabled | True |
33 | id | 0c47bcd27f26437f83381b16d665b8ec |
34 | interface | public |
35 | region | RegionOne |
36 | region_id | RegionOne |
37 | service_id | 0175c595f0844cc69fc68da494eae877 |
38 | service_name | glance |
39 | service_type | image |

```

```

40 | url | http://controller:9292 |
41 +-----+-----+
42 [root@controller ~]# openstack endpoint create --region RegionOne image internal http://controller:9292
43 +-----+-----+
44 | Field | Value |
45 +-----+-----+
46 | enabled | True |
47 | id | 94a18a397f41453c802e696ccab2e675 |
48 | interface | internal |
49 | region | RegionOne |
50 | region_id | RegionOne |
51 | service_id | 0175c595f0844cc69fc68da494eae877 |
52 | service_name | glance |
53 | service_type | image |
54 | url | http://controller:9292 |
55 +-----+-----+
56 [root@controller ~]# openstack endpoint create --region RegionOne image admin http://controller:9292
57 +-----+-----+
58 | Field | Value |
59 +-----+-----+
60 | enabled | True |
61 | id | ec5078f3711c41a9a940a2f5bf3a5d66 |
62 | interface | admin |
63 | region | RegionOne |
64 | region_id | RegionOne |
65 | service_id | 0175c595f0844cc69fc68da494eae877 |
66 | service_name | glance |
67 | service_type | image |
68 | url | http://controller:9292 |
69 +-----+-----+
70 安装软件包
71 [root@controller ~]# yum install openstack-glance -y
72 编辑glance的配置文件
73
74
75
76 [database]
77 connection = mysql+pymysql://glance:000000@controller/glance
78 [glance_store]

```


1 上传镜像

```
2 [root@controller ~]# openstack image create --file /root/cirros-0.3.3-  
x86_64-disk.img --disk-format qcow2 --container-format bare --public cirr  
os-0.3.3
```

```
3 +-----+-----+  
-----+  
4 | Field | Value |  
5 +-----+-----+  
-----+  
6 | checksum | ee1eca47dc88f4879d8a229cc70a07c6 |  
7 | container_format | bare |  
8 | created_at | 2021-11-08T12:48:11Z |  
9 | disk_format | qcow2 |  
10 | file | /v2/images/1cdb078a-8d30-4d31-9cab-1281a0c8b935/file |  
11 | id | 1cdb078a-8d30-4d31-9cab-1281a0c8b935 |  
12 | min_disk | 0 |  
13 | min_ram | 0 |  
14 | name | cirros-0.3.3 |  
15 | owner | 883c664aed47476d93e306deb5ea24f2 |  
16 | properties | os_hash_algo='sha512', os_hash_value='1b03ca1bc3fafe448  
b90583c12f367949f8b0e665685979d95b004e48574b953316799e23240f4f739d1b5eb4c  
4ca24d38fdc6f4f9d8247a2bc64db25d6bbdb2', os_hidden='False' |  
17 | protected | False |  
18 | schema | /v2/schemas/image |  
19 | size | 13287936 |  
20 | status | active |  
21 | tags | |  
22 | updated_at | 2021-11-08T12:48:11Z |  
23 | virtual_size | None |  
24 | visibility | public |  
25 +-----+-----+  
-----+  
-----+
```

```
26 [root@controller ~]# openstack image list
```

```
27 +-----+-----+-----+  
28 | ID | Name | Status |  
29 +-----+-----+-----+  
30 | 1cdb078a-8d30-4d31-9cab-1281a0c8b935 | cirros-0.3.3 | active |  
31 +-----+-----+-----+
```

```
32 [root@controller ~]# ll /var/lib/glance/images/
```

```
33 总用量 12980
```

```
34 -rw-r----- 1 glance glance 13287936 11月 8 20:48 1cdb078a-8d30-4d31-9c
ab-1281a0c8b935
35
```

至此glance完成（关机打快照）

五、安装放置服务placement

1.配置数据库

```
1 [root@controller ~]# mysql -uroot -p000000
2 Welcome to the MariaDB monitor. Commands end with ; or \g.
3 Your MariaDB connection id is 8
4 Server version: 10.3.20-MariaDB MariaDB Server
5
6 Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.
7
8 Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
9
10 MariaDB [(none)]> CREATE DATABASE placement;
11 Query OK, 1 row affected (0.000 sec)
12
13 MariaDB [(none)]> GRANT ALL PRIVILEGES ON placement.* TO
14 'placement'@'localhost' IDENTIFIED BY '000000';
15 Query OK, 0 rows affected (0.001 sec)
16
17 MariaDB [(none)]> GRANT ALL PRIVILEGES ON placement.* TO
18 'placement'@'%' IDENTIFIED BY '000000';
19 Query OK, 0 rows affected (0.000 sec)
20
21 MariaDB [(none)]> flush privileges;
22 Query OK, 0 rows affected (0.001 sec)
23
24 MariaDB [(none)]> exit
25 Bye
```

2.创建placement用户

```
1 [root@controller ~]# . admin-openrc.sh
2 [root@controller ~]# openstack user create --domain default --password
000000 placement
3 +-----+-----+
```

```

4 | Field | Value |
5 +-----+-----+
6 | domain_id | default |
7 | enabled | True |
8 | id | 3d86d8629a304c8eb0f2e248a21bc46e |
9 | name | placement |
10 | options | {} |
11 | password_expires_at | None |
12 +-----+-----+
13 [root@controller ~]# openstack role add --project service --user placement admin
14 [root@controller ~]# openstack service create --name placement --description "Placement API" placement
15 +-----+-----+
16 | Field | Value |
17 +-----+-----+
18 | description | Placement API |
19 | enabled | True |
20 | id | 1e17d911cc1d4d5bab80fbddc2c8ae4d |
21 | name | placement |
22 | type | placement |
23 +-----+-----+
24
25

```

3.创建placement服务访问端点

```

1 [root@controller ~]# openstack endpoint create --region RegionOne placement public http://controller:8778
2 +-----+-----+
3 | Field | Value |
4 +-----+-----+
5 | enabled | True |
6 | id | ba9ea5ed8909412fa2b6549599f13cfd |
7 | interface | public |
8 | region | RegionOne |
9 | region_id | RegionOne |
10 | service_id | 1e17d911cc1d4d5bab80fbddc2c8ae4d |
11 | service_name | placement |
12 | service_type | placement |
13 | url | http://controller:8778 |
14 +-----+-----+

```

```

15 [root@controller ~]# openstack endpoint create --region RegionOne plac
ement internal http://controller:8778
16 +-----+-----+
17 | Field | Value |
18 +-----+-----+
19 | enabled | True |
20 | id | b371065f9eaf4243aba6a6761fb0deea |
21 | interface | internal |
22 | region | RegionOne |
23 | region_id | RegionOne |
24 | service_id | 1e17d911cc1d4d5bab80fbddc2c8ae4d |
25 | service_name | placement |
26 | service_type | placement |
27 | url | http://controller:8778 |
28 +-----+-----+
29 [root@controller ~]# openstack endpoint create --region RegionOne plac
ement admin http://controller:8778
30 +-----+-----+
31 | Field | Value |
32 +-----+-----+
33 | enabled | True |
34 | id | 277d978bc6f64befa54b21dccd58ac6a |
35 | interface | admin |
36 | region | RegionOne |
37 | region_id | RegionOne |
38 | service_id | 1e17d911cc1d4d5bab80fbddc2c8ae4d |
39 | service_name | placement |
40 | service_type | placement |
41 | url | http://controller:8778 |
42 +-----+-----+
43

```

4.安装placement软件包并配置

```

1 [root@controller ~]# yum install openstack-placement-api -y
2 [root@controller ~]# cp /etc/placement/placement.conf /etc/placement/p
lacement.conf.bak
3 [root@controller ~]# grep -Ev '^$|#' /etc/placement/placement.conf.bak
> /etc/placement/placement.conf
4 [root@controller ~]#
5
6 [root@controller ~]# cat /etc/placement/placement.conf
7 [DEFAULT]

```



```

8 [api]
9 auth_strategy = keystone
10
11 [cors]
12 [keystone_authtoken]
13 auth_url = http://controller:5000/v3
14 memcached_servers = controller:11211
15 auth_type = password
16 project_domain_name = default
17 user_domain_name = default
18 project_name = service
19 username = placement
20 password = 000000
21
22 [oslo_policy]
23 [placement]
24 [placement_database]
25 connection = mysql+pymysql://placement:000000@controller/placement
26
27 [profiler]
28 [root@controller ~]#
29 [root@controller ~]# su -s /bin/sh -c "placement-manage db sync" place
ment
30 /usr/lib/python2.7/site-packages/pymysql/cursors.py:170: Warning: (128
0, u"Name 'alembic_version_pkc' ignored for PRIMARY key.")
31 result = self._query(query)

```

5.修改placement的apache配置文件

```

1 [root@controller ~]# vim /etc/httpd/conf.d/00-placement-api.conf
2 #SSLCertificateFile ...
3 <Directory /usr/bin>
4 <IfVersion >= 2.4>
5 Require all granted
6 </IfVersion>
7 <IfVersion < 2.4>
8 Order allow,deny
9 Allow from all
10 </IfVersion>
11 </Directory>
12 #SSLCertificateKeyFile ...
13
14 </VirtualHost>

```

15

16

```
ERRORLOG /var/log/placement/placement-ssl.log
#SSLEngine On
#SSLCertificateFile ...
<Directory /usr/bin>
  <IfVersion >= 2.4>
    Require all granted
  </IfVersion>
  <IfVersion < 2.4>
    Order allow,deny
    Allow from all
  </IfVersion>
</Directory>
#SSLCertificateKeyFile ...

</VirtualHost>

Alias /placement-api /usr/bin/placement-api
```

```
[root@controller ~]# vim /etc/httpd/conf.d/00-placement-api.conf
[root@controller ~]# systemctl restart httpd
[root@controller ~]# netstat -tnlup
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        0      0 0.0.0.0:25672           0.0.0.0:*               LISTEN      1116/beam.smp
tcp        0      0 192.168.100.147:3306    0.0.0.0:*               LISTEN      1418/mysqld
tcp        0      0 192.168.100.147:2379    0.0.0.0:*               LISTEN      1125/etcd
tcp        0      0 192.168.100.147:11211   0.0.0.0:*               LISTEN      1142/memcached
tcp        0      0 127.0.0.1:11211         0.0.0.0:*               LISTEN      1142/memcached
tcp        0      0 0.0.0.0:9292            0.0.0.0:*               LISTEN      1132/python2
tcp        0      0 192.168.100.147:2380    0.0.0.0:*               LISTEN      1125/etcd
tcp        0      0 0.0.0.0:111             0.0.0.0:*               LISTEN      660/rpcbind
tcp        0      0 0.0.0.0:4369            0.0.0.0:*               LISTEN      1/systemd
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN      1117/sshd
tcp        0      0 127.0.0.1:25            0.0.0.0:*               LISTEN      1811/master
tcp6       0      0 :::5000                  :::*                    LISTEN      9286/httpd
tcp6       0      0 :::5672                  :::*                    LISTEN      1116/beam.smp
tcp6       0      0 :::8778                  :::*                    LISTEN      9286/httpd
tcp6       0      0 :::1:11211              :::*                    LISTEN      1142/memcached
tcp6       0      0 :::111                   :::*                    LISTEN      660/rpcbind
tcp6       0      0 :::80                    :::*                    LISTEN      9286/httpd
tcp6       0      0 :::22                    :::*                    LISTEN      1117/sshd
tcp6       0      0 :::1:25                  :::*                    LISTEN      1811/master
udp        0      0 0.0.0.0:68              0.0.0.0:*               773/dhclient
udp        0      0 0.0.0.0:68              0.0.0.0:*               764/dhclient
udp        0      0 0.0.0.0:68              0.0.0.0:*               769/dhclient
udp6       0      0 :::68                    :::*                    767/dhclient
```

检查

```
1 [root@controller ~]# placement-status upgrade check
2 +-----+
3 | Upgrade Check Results |
```

```

4 +-----+
5 | Check: Missing Root Provider IDs |
6 | Result: Success |
7 | Details: None |
8 +-----+
9 | Check: Incomplete Consumers |
10 | Result: Success |
11 | Details: None |
12 +-----+

```

placement配置完成 (关机打快照)

六、计算服务nova (控制节点)

1.数据配置

```

1 [root@controller ~]# mysql -u root -p000000
2 Welcome to the MariaDB monitor. Commands end with ; or \g.
3 Your MariaDB connection id is 8
4 Server version: 10.3.20-MariaDB MariaDB Server
5
6 Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.
7
8 Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
9
10 MariaDB [(none)]> CREATE DATABASE nova_api;
11 Query OK, 1 row affected (0.000 sec)
12
13 MariaDB [(none)]> CREATE DATABASE nova;
14 Query OK, 1 row affected (0.000 sec)
15
16 MariaDB [(none)]> CREATE DATABASE nova_cell0;
17 Query OK, 1 row affected (0.000 sec)
18
19 MariaDB [(none)]> GRANT ALL PRIVILEGES ON nova_api.* TO 'nova'@'localhost' IDENTIFIED BY '000000';
20 Query OK, 0 rows affected (0.001 sec)
21
22 MariaDB [(none)]> GRANT ALL PRIVILEGES ON nova_api.* TO 'nova'@'%' IDENTIFIED BY '000000';

```

```

23 Query OK, 0 rows affected (0.000 sec)
24
25 MariaDB [(none)]> GRANT ALL PRIVILEGES ON nova.* TO 'nova'@'localhost'
IDENTIFIED BY '000000';
26 Query OK, 0 rows affected (0.000 sec)
27
28 MariaDB [(none)]> GRANT ALL PRIVILEGES ON nova.* TO 'nova'@'%' IDENTIF
IED BY '000000';
29 Query OK, 0 rows affected (0.000 sec)
30
31 MariaDB [(none)]> GRANT ALL PRIVILEGES ON nova_cell0.* TO 'nova'@'loca
lhost' IDENTIFIED BY '000000';
32 Query OK, 0 rows affected (0.000 sec)
33
34 MariaDB [(none)]> GRANT ALL PRIVILEGES ON nova_cell0.* TO 'nova'@'%' I
DENTIFIED BY '000000';
35 Query OK, 0 rows affected (0.000 sec)
36
37 MariaDB [(none)]> flush privileges;
38 Query OK, 0 rows affected (0.001 sec)
39
40 MariaDB [(none)]> exit
41 Bye

```

2.创建nova用户

```

1 [root@controller ~]# . admin-openrc.sh
2 [root@controller ~]# openstack user create --domain default --password
000000 nova
3 +-----+-----+
4 | Field | Value |
5 +-----+-----+
6 | domain_id | default |
7 | enabled | True |
8 | id | 5ebae7ce075d457489a05200799134e3 |
9 | name | nova |
10 | options | {} |
11 | password_expires_at | None |
12 +-----+-----+
13 [root@controller ~]# openstack role add --project service --user nova
admin
14 [root@controller ~]# openstack service create --name nova --descriptio
n "OpenStack Compute" compute

```

```

15 +-----+-----+
16 | Field | Value |
17 +-----+-----+
18 | description | OpenStack Compute |
19 | enabled | True |
20 | id | 3f96acc7763f4bc6af31648b6d71a59b |
21 | name | nova |
22 | type | compute |
23 +-----+-----+
24 创建Compute API服务端点
25 [root@controller ~]#
26 [root@controller ~]# openstack endpoint create --region RegionOne compute public http://controller:8774/v2.1
27 +-----+-----+
28 | Field | Value |
29 +-----+-----+
30 | enabled | True |
31 | id | 8878e33f602d40ed9bdab199e6f825d8 |
32 | interface | public |
33 | region | RegionOne |
34 | region_id | RegionOne |
35 | service_id | 3f96acc7763f4bc6af31648b6d71a59b |
36 | service_name | nova |
37 | service_type | compute |
38 | url | http://controller:8774/v2.1 |
39 +-----+-----+
40 [root@controller ~]# openstack endpoint create --region RegionOne compute internal http://controller:8774/v2.1
41 +-----+-----+
42 | Field | Value |
43 +-----+-----+
44 | enabled | True |
45 | id | f6ec54fc833645aabedea90598de1f92 |
46 | interface | internal |
47 | region | RegionOne |
48 | region_id | RegionOne |
49 | service_id | 3f96acc7763f4bc6af31648b6d71a59b |
50 | service_name | nova |
51 | service_type | compute |
52 | url | http://controller:8774/v2.1 |

```

```

53 +-----+-----+
54 [root@controller ~]# openstack endpoint create --region RegionOne compute admin http://controller:8774/v2.1
55 +-----+-----+
56 | Field | Value |
57 +-----+-----+
58 | enabled | True |
59 | id | df0bfffab4084d62b5e2a29bd5c0a755 |
60 | interface | admin |
61 | region | RegionOne |
62 | region_id | RegionOne |
63 | service_id | 3f96acc7763f4bc6af31648b6d71a59b |
64 | service_name | nova |
65 | service_type | compute |
66 | url | http://controller:8774/v2.1 |
67 +-----+-----+
68 [root@controller ~]#

```

3.安装软件包并配置文件

```

1 [root@controller ~]# yum install openstack-nova-api openstack-nova-conductor openstack-nova-novncproxy openstack-nova-scheduler -y
2
3 [root@controller ~]# cp /etc/nova/nova.conf /etc/nova/nova.conf.bak
4 [root@controller ~]# grep -Ev '^$|#' /etc/nova/nova.conf.bak >/etc/nova/nova.conf
5 [root@controller ~]# vim /etc/nova/nova.conf
6 [DEFAULT]
7 enabled_apis = osapi_compute,metadata
8 transport_url = rabbit://openstack:controller@controller:5672/
9 my_ip = 192.168.100.147
10 use_neutron = true
11 firewall_driver = nova.virt.firewall.NoopFirewallDriver
12
13 [api]
14 auth_strategy = keystone
15
16 [api_database]
17 connection = mysql+pymysql://nova:000000@controller/nova_api
18
19 [database]
20 connection = mysql+pymysql://nova:000000@controller/nova

```

```

21
22 [glance]
23 api_servers = http://controller:9292
24
25 [keystone_authtoken]
26 www_authenticate_uri = http://controller:5000/
27 auth_url = http://controller:5000/
28 memcached_servers = controller:11211
29 auth_type = password
30 project_domain_name = default
31 user_domain_name = default
32 project_name = service
33 username = nova
34 password = 000000
35
36 [oslo_concurrency]
37 lock_path = /var/lib/nova/tmp
38
39 [placement]
40 region_name = RegionOne
41 project_domain_name = default
42 project_name = service
43 auth_type = password
44 user_domain_name = default
45 auth_url = http://controller:5000/v3
46 username = placement
47 password = 000000
48
49 [vnc]
50 enabled = true
51 server_listen = $my_ip
52 server_proxyclient_address = $my_ip
53

```

4.填充数据库并验证nova

```

1 [root@controller ~]# su -s /bin/sh -c "nova-manage api_db sync" nova
2 [root@controller ~]# su -s /bin/sh -c "nova-manage cell_v2 map_cell0"
nova
3 [root@controller ~]# su -s /bin/sh -c "nova-manage cell_v2 create_cell
--name=cell1 --verbose" nova
4 dd639acc-48dd-4f7e-bb09-9cf295bc0fea
5 [root@controller ~]# su -s /bin/sh -c "nova-manage db sync" nova

```

```

6 /usr/lib/python2.7/site-packages/pymysql/cursors.py:170: Warning: (183
1, u'Duplicate index `block_device_mapping_instance_uuid_virtual_name_dev
ice_name_idx`. This is deprecated and will be disallowed in a future rele
ase')
7 result = self._query(query)
8 /usr/lib/python2.7/site-packages/pymysql/cursors.py:170: Warning: (183
1, u'Duplicate index `uniq_instances0uuid`. This is deprecated and will b
e disallowed in a future release')
9 result = self._query(query)
10
11 数据库填充好之后，验证nova cell0和cell1是否正确注册：
12 [root@controller ~]# su -s /bin/sh -c "nova-manage cell_v2 list_cells"
nova
13 +-----+-----+-----+-----+-----+-----+
14 | 名称 | UUID | Transport URL | 数据库连接 | Disabled |
15 +-----+-----+-----+-----+-----+-----+
16 | cell0 | 00000000-0000-0000-0000-000000000000 | none:/ | mysql+pymysc
l://nova:****@controller/nova_cell0 | False |
17 | cell1 | dd639acc-48dd-4f7e-bb09-9cf295bc0fea |
rabbit://openstack:****@controller:5672/ | mysql+pymysql://nova:****@cont
roller/nova | False |
18 +-----+-----+-----+-----+-----+-----+
19 启动计算服务nova并将其配置为在系统启动时启动
20 [root@controller ~]# systemctl start openstack-nova-api.service openst
ack-nova-scheduler.service openstack-nova-conductor.service openstack-nov
a-novncproxy.service
21 [root@controller ~]# systemctl enable openstack-nova-api.service openst
ack-nova-scheduler.service openstack-nova-conductor.service openstack-nov
a-novncproxy.service
22 Created symlink from /etc/systemd/system/multi-user.target.wants/openst
ack-nova-api.service to /usr/lib/systemd/system/openstack-nova-api.servi
ce.
23 Created symlink from /etc/systemd/system/multi-user.target.wants/openst
ack-nova-scheduler.service to /usr/lib/systemd/system/openstack-nova-sch
eduler.service.
24 Created symlink from /etc/systemd/system/multi-user.target.wants/openst
ack-nova-conductor.service to /usr/lib/systemd/system/openstack-nova-cor
ductor.service.
25 Created symlink from /etc/systemd/system/multi-user.target.wants/openst
ack-nova-novncproxy.service to /usr/lib/systemd/system/openstack-nova-no
vncproxy.service.

```



```

[root@controller ~]# netstat -tnlup
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        0      0 0.0.0.0:8774           0.0.0.0:*                LISTEN      9770/python2
tcp        0      0 0.0.0.0:8775           0.0.0.0:*                LISTEN      9770/python2
tcp        0      0 0.0.0.0:25672          0.0.0.0:*                LISTEN      1118/beam.smp
tcp        0      0 192.168.100.147:3306   0.0.0.0:*                LISTEN      1486/mysqld
tcp        0      0 192.168.100.147:2379   0.0.0.0:*                LISTEN      1120/etcd
tcp        0      0 192.168.100.147:11211  0.0.0.0:*                LISTEN      1114/memcached
tcp        0      0 127.0.0.1:11211        0.0.0.0:*                LISTEN      1114/memcached
tcp        0      0 0.0.0.0:9292           0.0.0.0:*                LISTEN      1110/python2
tcp        0      0 192.168.100.147:2380   0.0.0.0:*                LISTEN      1120/etcd
tcp        0      0 0.0.0.0:111            0.0.0.0:*                LISTEN      664/rpcbind
tcp        0      0 0.0.0.0:4369           0.0.0.0:*                LISTEN      1/systemd
tcp        0      0 0.0.0.0:22             0.0.0.0:*                LISTEN      1111/sshd
tcp        0      0 127.0.0.1:25           0.0.0.0:*                LISTEN      1771/master
tcp        0      0 0.0.0.0:6080           0.0.0.0:*                LISTEN      9773/python2
tcp6       0      0 :::5672                :::*                    LISTEN      1118/beam.smp
tcp6       0      0 :::5000                :::*                    LISTEN      1138/httpd
tcp6       0      0 :::8778                :::*                    LISTEN      1138/httpd
tcp6       0      0 ::1:11211             :::*                    LISTEN      1114/memcached
tcp6       0      0 :::111                 :::*                    LISTEN      664/rpcbind
tcp6       0      0 :::80                  :::*                    LISTEN      1138/httpd
tcp6       0      0 :::22                  :::*                    LISTEN      1111/sshd
tcp6       0      0 ::1:25                 :::*                    LISTEN      1771/master
udp        0      0 0.0.0.0:68            0.0.0.0:*                LISTEN      778/dhclient
udp        0      0 0.0.0.0:68            0.0.0.0:*                LISTEN      773/dhclient
udp        0      0 0.0.0.0:68            0.0.0.0:*                LISTEN      773/dhclient

```

```

1 [root@controller ~]# curl http://controller:8774
2 {"versions": [{"status": "SUPPORTED", "updated": "2011-01-21T11:33:21Z", "links": [{"href": "http://controller:8774/v2/", "rel": "self"}], "min_version": "", "version": "", "id": "v2.0"}, {"status": "CURRENT", "updated": "2013-07-23T11:33:21Z", "links": [{"href": "http://controller:8774/v2.1/", "rel": "self"}], "min_version": "2.1", "version": "2.79", "id": "v2.1"}]}

```

至此控制节点nova服务部署完成 (关机打快照)

计算服务nova (计算节点)

1. 安装软件包并配置文件

```

1 [root@compute ~]# yum install openstack-nova-compute -y
2
3 因为要安装KVM虚拟化那一套的东东，所以安装的包较多，请耐心等待。如果提示没有包，
  则先安装openstack源（参考本系列文章第一部分基础服务的安装）
4
5
6 [root@compute ~]# cp /etc/nova/nova.conf /etc/nova/nova.conf.bak
7 [root@compute ~]# grep -Ev '^$|#' /etc/nova/nova.conf.bak >/etc/nova/nova.conf
8 [root@compute ~]# vim /etc/nova/nova.conf
9 [DEFAULT]
10 enabled_apis = osapi_compute,metadata

```

```
11 transport_url = rabbit://openstack:000000@controller
12 my_ip = 192.168.100.148
13 use_neutron = true
14 firewall_driver = nova.virt.firewall.NoopFirewallDriver
15
16 [api]
17 auth_strategy = keystone
18
19 [keystone_authtoken]
20 www_authenticate_uri = http://controller:5000/
21 auth_url = http://controller:5000/
22 memcached_servers = controller:11211
23 auth_type = password
24 project_domain_name = default
25 user_domain_name = default
26 project_name = service
27 username = nova
28 password = 000000
29
30 [glance]
31 api_servers = http://192.168.100.147:9292
32
33 [oslo_concurrency]
34 lock_path = /var/lib/nova/tmp
35
36 [placement]
37 region_name = RegionOne
38 project_domain_name = default
39 project_name = service
40 auth_type = password
41 user_domain_name = default
42 auth_url = http://controller:5000/v3
43 username = placement
44 password = 000000
45
46 [vnc]
47 enabled = true
48 server_listen = 0.0.0.0
49 server_proxyclient_address = $my_ip
50 novncproxy_base_url = http://192.168.100.147:6080/vnc_auto.html
51
```

```

52 确定计算节点是否支持虚拟机硬件加速
53 [root@compute ~]# egrep -c '(vmx|svm)' /proc/cpuinfo
54 8
55 如果此命令返回值不是0，则计算节点支持硬件加速，不需要加入下面的配置。
56 如果此命令返回值是0，则计算节点不支持硬件加速，并且必须配置libvirt为使用QEMU而不是KVM，需要编辑/etc/nova/nova.conf 文件中的[libvirt]部分：
57
58 [libvirt]
59 virt_type = qemu

```

```

[root@compute ~]#
[root@compute ~]# egrep -c '(vmx|svm)' /proc/cpuinfo
8

```

我这里开启了虚拟化 就不需要添加

```

[root@compute ~]# vim /etc/nova/nova.conf

```

```

1 [root@compute ~]# systemctl enable libvirtd.service openstack-nova-compute.service
2 Created symlink from /etc/systemd/system/multi-user.target.wants/openstack-nova-compute.service to /usr/lib/systemd/system/openstack-nova-compute.service.
3 [root@compute ~]# systemctl start libvirtd.service openstack-nova-compute.service
4
5
6 [root@compute ~]# ps -ef | grep nova
7 nova 9075 1 1 11:36 ? 00:00:03 /usr/bin/python2 /usr/bin/nova-compute
8 root 9165 7706 0 11:40 pts/0 00:00:00 systemctl start libvirtd.service openstack-nova-compute.service
9 root 9192 9174 0 11:41 pts/1 00:00:00 grep --color=auto nova
10 [root@compute ~]# ps -ef | grep libvirtd
11 root 9058 1 0 11:36 ? 00:00:00 /usr/sbin/libvirtd
12 root 9165 7706 0 11:40 pts/0 00:00:00 systemctl start libvirtd.service openstack-nova-compute.service

```

至此nova完成（关机打块找）

发现计算节点和验证nova的安装

1确认数据库

```

1 [root@controller ~]# . admin-openrc.sh
2 [root@controller ~]# openstack compute service list --service nova-compute

```

```

3  +-----+-----+-----+-----+-----+-----+-----+-----+
   +-----+
4  | ID | Binary | Host | Zone | Status | State | Updated At |
5  +-----+-----+-----+-----+-----+-----+-----+-----+
   +-----+
6  | 13 | nova-compute | compute | nova | enabled | up | 2021-11-
   09T04:55:33.000000 |
7  +-----+-----+-----+-----+-----+-----+-----+-----+
   +-----+
8  发现计算节点主机
9  [root@controller ~]# su -s /bin/sh -c "nova-manage cell_v2 discover_hosts --verbose" nova
10 Found 2 cell mappings.
11 Skipping cell0 since it does not contain hosts.
12 Getting computes from cell 'cell1': 194c0f4e-7fcf-4627-a1fe-a6add07372ef
13 Checking host mapping for compute host 'compute': b02fa494-14ce-4e27-9e02-92804357153e
14 Creating host mapping for compute host 'compute': b02fa494-14ce-4e27-9e02-92804357153e
15 Found 1 unmapped computes in cell: 194c0f4e-7fcf-4627-a1fe-a6add07372ef
16
17 设置适当的发现时间间隔（可选）
18
19 [root@controller ~]# vim /etc/nova/nova.conf
20 [root@controller ~]#
21 [root@controller ~]# systemctl restart openstack-nova-api.service
22 [scheduler]
23 discover_hosts_in_cells_interval = 300
24
25

```

验证整个计算服务nova

```

1  [root@controller ~]# . admin-openrc.sh
2  [root@controller ~]# openstack compute service list
3  +-----+-----+-----+-----+-----+-----+-----+-----+
   +-----+
4  | ID | Binary | Host | Zone | Status | State | Updated At |
5  +-----+-----+-----+-----+-----+-----+-----+-----+
   +-----+
6  | 5 | nova-conductor | controller | internal | enabled | up | 2021-11-
   09T04:58:45.000000 |

```

```

7 | 7 | nova-scheduler | controller | internal | enabled | up | 2021-11-
09T04:58:37.000000 |
8 | 13 | nova-compute | compute | nova | enabled | up | 2021-11-
09T04:58:43.000000 |
9 +-----+-----+-----+-----+-----+-----+-----+
-----+
10
11
12 [root@controller ~]# openstack catalog list
13 +-----+-----+-----+-----+
14 | Name | Type | Endpoints |
15 +-----+-----+-----+-----+
16 | glance | image | RegionOne |
17 | | | public: http://controller:9292 |
18 | | | RegionOne |
19 | | | internal: http://controller:9292 |
20 | | | RegionOne |
21 | | | admin: http://controller:9292 |
22 | | | |
23 | placement | placement | RegionOne |
24 | | | admin: http://controller:8778 |
25 | | | RegionOne |
26 | | | internal: http://controller:8778 |
27 | | | RegionOne |
28 | | | public: http://controller:8778 |
29 | | | |
30 | keystone | identity | RegionOne |
31 | | | public: http://controller:5000/v3/ |
32 | | | RegionOne |
33 | | | admin: http://controller:5000/v3/ |
34 | | | RegionOne |
35 | | | internal: http://controller:5000/v3/ |
36 | | | |
37 | nova | compute | RegionOne |
38 | | | internal: http://controller:8774/v2.1 |
39 | | | RegionOne |
40 | | | admin: http://controller:8774/v2.1 |
41 | | | RegionOne |
42 | | | public: http://controller:8774/v2.1 |
43 | | | |
44 +-----+-----+-----+-----+

```

```

45
46 [root@controller ~]# openstack image list
47 +-----+-----+-----+
48 | ID | Name | Status |
49 +-----+-----+-----+
50 | 1cdb078a-8d30-4d31-9cab-1281a0c8b935 | cirros-0.3.3 | active |
51 +-----+-----+-----+
52
53 [root@controller ~]# nova-status upgrade check
54 +-----+
55 | Upgrade Check Results |
56 +-----+
57 | Check: Cells v2 |
58 | Result: Success |
59 | Details: None |
60 +-----+
61 | Check: Placement API |
62 | Result: Success |
63 | Details: None |
64 +-----+
65 | Check: Ironic Flavor Migration |
66 | Result: Success |
67 | Details: None |
68 +-----+
69 | Check: Cinder API |
70 | Result: Success |
71 | Details: None |
72 +-----+

```

关机打快照

七、安装网络服务neutron（双节点）

```

1 [root@controller ~]# yum install net-tools -y
2 [root@controller ~]# ifconfig ens34 promisc
3 [root@controller ~]# ifconfig

```

```
[root@controller ~]# ifconfig ens34 promisc
[root@controller ~]# ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.100.147 netmask 255.255.255.0 broadcast 192.168.100.255
    inet6 fe80::85fe:953:9b99:cbf5 prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:ca:b5:4d txqueuelen 1000 (Ethernet)
    RX packets 224 bytes 78143 (76.3 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 230 bytes 97755 (95.4 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

ens34: flags=4419<UP,BROADCAST,RUNNING,PROMISC,MULTICAST> mtu 1500
    inet 192.168.73.33 netmask 255.255.255.0 broadcast 192.168.73.255
    inet6 fe80::c6cd:20fb:39dc:f3c3 prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:ca:b5:57 txqueuelen 1000 (Ethernet)
    RX packets 31 bytes 3613 (3.5 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 16 bytes 1510 (1.4 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

```
1 [root@compute ~]# yum install net-tools -y
2 [root@compute ~]# ifconfig ens34 promisc
3 [root@compute ~]# ifconfig
```

```
eth1: ERROR while getting interface flags: 没有那个设备
[root@compute ~]# ifconfig ens34 promisc
[root@compute ~]# ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.100.148 netmask 255.255.255.0 broadcast 192.168.100.255
    inet6 fe80::8987:5ea3:70a9:a911 prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:4b:96:64 txqueuelen 1000 (Ethernet)
    RX packets 411 bytes 108517 (105.9 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 412 bytes 227803 (222.4 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

ens34: flags=4419<UP,BROADCAST,RUNNING,PROMISC,MULTICAST> mtu 1500
    inet 192.168.73.24 netmask 255.255.255.0 broadcast 192.168.73.255
    inet6 fe80::3e0b:baad:4db3:6cf8 prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:4b:96:6e txqueuelen 1000 (Ethernet)
    RX packets 274 bytes 331514 (323.7 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 66 bytes 4816 (4.7 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

ens35: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.73.25 netmask 255.255.255.0 broadcast 192.168.73.255
```

将上述命令写入到/etc/profile使下次重启后也生效：（双节点）

```
1 [root@compute ~]# vim /etc/profile
```

```
unset i
unset -f pathmunge

ifconfig ens34 promisc
:wq!
```

重启网络，确认主机间的网络通讯（双节点）

```
[root@compute ~]# vim /etc/profile
[root@compute ~]# systemctl restart network
[root@compute ~]# ping www.baidu.com
PING www.a.shifen.com (183.232.231.174) 56(84) bytes of data.
64 bytes from 183.232.231.174 (183.232.231.174): icmp_seq=1 ttl=128 time=31.5 ms
^C
--- www.a.shifen.com ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 31.553/31.553/31.553/0.000 ms
[root@compute ~]# ping controller
PING controller (192.168.100.147) 56(84) bytes of data.
64 bytes from controller (192.168.100.147): icmp_seq=1 ttl=64 time=0.312 ms
^C
--- controller ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 0.312/0.312/0.312/0.000 ms
[root@compute ~]#
```

接下来**控制节点操作**

```
1 检查各个服务是否启动
2 [root@controller ~]# . admin-openrc.sh
3 [root@controller ~]# openstack token issue
4 +-----+-----+
5 | Field | Value |
6 +-----+-----+
7 | expires | 2021-11-09T06:11:20+0000 |
8 | id | gAAAAABhigL4_5nZyPLPzyFmTS0TdvmHNeKcCq__toC7WYar0JCMaPnJDKCYquw
  OcLBxGw3U6bjxDh4MtX3SMwGvtq0psB6yABQaJbd1ZqfJ_6YVGRDshgbSczr7KPy7P5g3cTil
  ps1GW00KDu-mKwlcn5Tycqb8kfniMUXHnRvmzzi6rJzJEGg |
9 | project_id | 883c664aed47476d93e306deb5ea24f2 |
10 | user_id | dc2a6ca49a97440480d65ae67a18b11a |
11 +-----+-----+
12 [root@controller ~]# openstack image list
13 +-----+-----+-----+
14 | ID | Name | Status |
15 +-----+-----+-----+
16 | 1cdb078a-8d30-4d31-9cab-1281a0c8b935 | cirros-0.3.3 | active |
17 +-----+-----+-----+
18 [root@controller ~]# placement-status upgrade check
19
20 +-----+
21 | Upgrade Check Results |
22 +-----+
```



```

23 | Check: Missing Root Provider IDs |
24 | Result: Success |
25 | Details: None |
26 +-----+
27 | Check: Incomplete Consumers |
28 | Result: Success |
29 | Details: None |
30 +-----+
31 [root@controller ~]#
32 [root@controller ~]# openstack compute service list
33 +-----+-----+-----+-----+-----+-----+-----+
34 | ID | Binary | Host | Zone | Status | State | Updated At |
35 +-----+-----+-----+-----+-----+-----+-----+
36 | 5 | nova-conductor | controller | internal | enabled | up | 2021-11-09T05:11:46.000000 |
37 | 7 | nova-scheduler | controller | internal | enabled | up | 2021-11-09T05:11:41.000000 |
38 | 13 | nova-compute | compute | nova | enabled | up | 2021-11-09T05:11:47.000000 |
39 +-----+-----+-----+-----+-----+-----+-----+
40
41 [root@controller ~]# nova service-list
42 +-----+-----+-----+-----+-----+-----+-----+
43 | Id | Binary | Host | Zone | Status | State | Updated_at | Disabled Reason | Forced down |
44 +-----+-----+-----+-----+-----+-----+-----+
45 | d3b0c03a-a239-43c5-8c69-b6c06be632b6 | nova-conductor | controller | internal | enabled | up | 2021-11-09T05:12:06.000000 | - | False |
46 | 97d7cf18-e647-4ff6-92c9-17cc35fc566f | nova-scheduler | controller | internal | enabled | up | 2021-11-09T05:12:11.000000 | - | False |
47 | 1010fd7a-7011-4eb9-85ee-199b9a4b7190 | nova-compute | compute | nova | enabled | up | 2021-11-09T05:12:07.000000 | - | False |
48 +-----+-----+-----+-----+-----+-----+-----+
49 [root@controller ~]# nova-status upgrade check
50 +-----+

```

```

51 | Upgrade Check Results |
52 +-----+
53 | Check: Cells v2 |
54 | Result: Success |
55 | Details: None |
56 +-----+
57 | Check: Placement API |
58 | Result: Success |
59 | Details: None |
60 +-----+
61 | Check: Ironi Flavor Migration |
62 | Result: Success |
63 | Details: None |
64 +-----+
65 | Check: Cinder API |
66 | Result: Success |
67 | Details: None |
68 +-----+
69 [root@controller ~]#

```

配置数据库

```

1 [root@controller ~]# mysql -u root -p000000
2 Welcome to the MariaDB monitor. Commands end with ; or \g.
3 Your MariaDB connection id is 78
4 Server version: 10.3.20-MariaDB MariaDB Server
5
6 Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.
7
8 Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
9
10 MariaDB [(none)]> CREATE DATABASE neutron;
11 Query OK, 1 row affected (0.000 sec)
12
13 MariaDB [(none)]> GRANT ALL PRIVILEGES ON neutron.* TO 'neutron'@'localhost' IDENTIFIED BY '000000';
14 Query OK, 0 rows affected (0.001 sec)
15
16 MariaDB [(none)]> GRANT ALL PRIVILEGES ON neutron.* TO 'neutron'@'%' IDENTIFIED BY '000000';
17 Query OK, 0 rows affected (0.000 sec)
18

```

```

19 MariaDB [(none)]> flush privileges;
20 Query OK, 0 rows affected (0.000 sec)
21
22 MariaDB [(none)]> exit
23 Bye

```

创建neutron用户

```

1 [root@controller ~]# . admin-openrc.sh
2 [root@controller ~]# openstack user create --domain default --password
000000 neutron
3 +-----+-----+
4 | Field | Value |
5 +-----+-----+
6 | domain_id | default |
7 | enabled | True |
8 | id | 8f29929d03f94fb8a8e50a0244d13328 |
9 | name | neutron |
10 | options | {} |
11 | password_expires_at | None |
12 +-----+-----+
13 [root@controller ~]# openstack role add --project service --user neutron admin
14 [root@controller ~]# openstack service create --name neutron --description "OpenStack Networking" network
15 +-----+-----+
16 | Field | Value |
17 +-----+-----+
18 | description | OpenStack Networking |
19 | enabled | True |
20 | id | aa8c1ecbeee14bc7a10ab70ab9de16fd |
21 | name | neutron |
22 | type | network |
23 +-----+-----+
24 [root@controller ~]# openstack endpoint create --region RegionOne network public http://controller:9696
25 +-----+-----+
26 | Field | Value |
27 +-----+-----+
28 | enabled | True |
29 | id | 9a9bb8c92f9f405a8f0caecc638052c5 |
30 | interface | public |

```

```

31 | region | RegionOne |
32 | region_id | RegionOne |
33 | service_id | aa8c1ecbeee14bc7a10ab70ab9de16fd |
34 | service_name | neutron |
35 | service_type | network |
36 | url | http://controller:9696 |
37 +-----+-----+
38 [root@controller ~]# openstack endpoint create --region RegionOne network internal http://controller:9696
39 +-----+-----+
40 | Field | Value |
41 +-----+-----+
42 | enabled | True |
43 | id | 17f16722f1d0457da2cc519c12cd7440 |
44 | interface | internal |
45 | region | RegionOne |
46 | region_id | RegionOne |
47 | service_id | aa8c1ecbeee14bc7a10ab70ab9de16fd |
48 | service_name | neutron |
49 | service_type | network |
50 | url | http://controller:9696 |
51 +-----+-----+
52 [root@controller ~]# openstack endpoint create --region RegionOne network admin http://controller:9696
53 +-----+-----+
54 | Field | Value |
55 +-----+-----+
56 | enabled | True |
57 | id | 90cb34b9d2d248b09aa622eec5fc5fcd |
58 | interface | admin |
59 | region | RegionOne |
60 | region_id | RegionOne |
61 | service_id | aa8c1ecbeee14bc7a10ab70ab9de16fd |
62 | service_name | neutron |
63 | service_type | network |
64 | url | http://controller:9696 |
65 +-----+-----+
66 [root@controller ~]#

```

配置二层网络

1 1、安装软件包

```

2 [root@controller ~]# yum install openstack-neutron openstack-neutron-m
12 openstack-neutron-linuxbridge ebtables -y
3 命令
4 cp /etc/neutron/neutron.conf /etc/neutron/neutron.conf.bak
5 grep -Ev '^$|#' /etc/neutron/neutron.conf.bak>/etc/neutron/neutron.con
f
6 vim /etc/neutron/neutron.conf
7 cp /etc/neutron/plugins/ml2/ml2_conf.ini /etc/neutron/plugins/ml2/ml2_
conf.ini.bak
8 cp /etc/neutron/neutron.conf /etc/neutron/neutron.conf.bak
9 grep -Ev '^$|#' /etc/neutron/neutron.conf.bak>/etc/neutron/neutron.con
f
10 vim /etc/neutron/neutron.conf
11 cp /etc/neutron/plugins/ml2/ml2_conf.ini /etc/neutron/plugins/ml2/ml2_
conf.ini.bak
12 cp /etc/neutron/plugins/ml2/linuxbridge_agent.ini
/etc/neutron/plugins/ml2/linuxbridge_agent.ini.bak
13 grep -Ev '^$|#' /etc/neutron/plugins/ml2/linuxbridge_agent.ini.bak>/e
tc/neutron/plugins/ml2/linuxbridge_agent.ini
14 vim /etc/neutron/plugins/ml2/linuxbridge_agent.ini
15 vim /etc/sysctl.conf
16 modprobe br_netfilter
17 sysctl -p
18 cp /etc/neutron/dhcp_agent.ini /etc/neutron/dhcp_agent.ini.bak
19 grep -Ev '^$|#' /etc/neutron/dhcp_agent.ini.bak> /etc/neutron/dhcp_age
nt.ini
20 vim /etc/neutron/dhcp_agent.ini
21 vim /etc/neutron/metadata_agent.ini
22 vim /etc/nova/nova.conf
23
24
25
26 修改配置文件（附录里面）
27 [root@controller ~]# ln -s /etc/neutron/plugins/ml2/ml2_conf.ini
/etc/neutron/plugin.ini
28 [root@controller ~]# su -s /bin/sh -c "neutron-db-manage --config-file
/etc/neutron/neutron.conf --config-file /etc/neutron/plugins/ml2/ml2_con
f.ini upgrade head" neutron
29 INFO [alembic.runtime.migration] Context impl MySQLImpl.
30 INFO [alembic.runtime.migration] Will assume non-transactional DDL.
31 /usr/lib/python2.7/site-packages/pymysql/cursors.py:170: Warning: (128
0, u"Name 'alembic_version_pkc' ignored for PRIMARY key.")
32 result = self._query(query)

```

```

33 正在对 neutron 运行 upgrade...
34 systemctl restart openstack-nova-api.service
35 systemctl start neutron-server.service neutron-linuxbridge-agent.serv
ice neutron-dhcp-agent.service neutron-metadata-agent.service
36 systemctl enable neutron-server.service neutron-linuxbridge-agent.ser
vice neutron-dhcp-agent.service neutron-metadata-agent.service
37

```

```

INFO [alembic.runtime.migration] Running upgrade 7a5a0cccc0aa -> a8b517cfff8ab
INFO [alembic.runtime.migration] Running upgrade a8b517cfff8ab -> 3b935b28e7a0
INFO [alembic.runtime.migration] Running upgrade 3b935b28e7a0 -> b12a3ef66e62
INFO [alembic.runtime.migration] Running upgrade b12a3ef66e62 -> 97c25b0d2353
INFO [alembic.runtime.migration] Running upgrade 97c25b0d2353 -> 2e0d7a8a1586
INFO [alembic.runtime.migration] Running upgrade 2e0d7a8a1586 -> 5c85685d616d
确定

```

在计算节点安装网络服务neutron

```

1 安装组件
2 yum install openstack-neutron-linuxbridge ebtables ipset -y
3 cp /etc/neutron/neutron.conf /etc/neutron/neutron.conf.bak
4 grep -Ev '^$|#' /etc/neutron/neutron.conf.bak>/etc/neutron/neutron.conf
f
5 vim /etc/neutron/neutron.conf ##附录
6 cp /etc/neutron/plugins/ml2/linuxbridge_agent.ini
/etc/neutron/plugins/ml2/linuxbridge_agent.ini.bak
7 grep -Ev '^$|#' /etc/neutron/plugins/ml2/linuxbridge_agent.ini.bak>/et
c/neutron/plugins/ml2/linuxbridge_agent.ini
8 vim /etc/neutron/plugins/ml2/linuxbridge_agent.ini
9 vim /etc/sysctl.conf ##附录
10 modprobe br_netfilter
11 sysctl -p
12 vim /etc/nova/nova.conf ##附录
13 systemctl restart openstack-nova-compute.service
14 systemctl enable neutron-linuxbridge-agent.service
15 systemctl start neutron-linuxbridge-agent.service
16

```

验证neutrnrn服务

```

1 [root@controller ~]# . admin-openrc.sh
2 [root@controller ~]# openstack extension list --network
3 +-----+-----+-----+
4 | Name | Alias | Description |

```

```

5 +-----+
   |-----+-----+
   |-----+-----+
   |-----+
6 | Subnet Pool Prefix Operations | subnetpool-prefix-ops | Provides sup
  | port for adjusting the prefix list of subnet pools |
7 | Default Subnetpools | default-subnetpools | Provides ability to mark
  | and use a subnetpool as the default. |
8 | Network IP Availability | network-ip-availability | Provides IP avai
  | lability data for each network and subnet. |
9 | Network Availability Zone | network_availability_zone | Availability
  | zone support for network. |
10 | Subnet Onboard | subnet_onboard | Provides support for onboarding su
    | bnets into subnet pools |
11 | Network MTU (writable) | net-mtu-writable | Provides a writable MTU
    | attribute for a network resource. |
12 | Port Binding | binding | Expose port bindings of a virtual port to e
    | xternal application |
13 | agent | agent | The agent management extension. |
14 | Subnet Allocation | subnet_allocation | Enables allocation of subnet
    | s from a subnet pool |
15 | DHCP Agent Scheduler | dhcp_agent_scheduler | Schedule networks amon
    | g dhcp agents |
16 | Neutron external network | external-net | Adds external network attr
    | ibute to network resource. |
17 | Empty String Filtering Extension | empty-string-filtering | Allow fi
    | ltering by attributes with empty string value |
18 | Neutron Service Flavors | flavors | Flavor specification for Neutron
    | advanced services. |
19 | Network MTU | net-mtu | Provides MTU attribute for a network resourc
    | e. |
20 | Availability Zone | availability_zone | The availability zone extens
    | ion. |
21 | Quota management support | quotas | Expose functions for quotas man
    | agement per tenant |
22 | Tag support for resources with standard attribute: subnet, trunk, ne
    | twork_segment_range, router, network, policy, subnetpool, port, security_
    | group, floatingip | standard-attr-tag | Enables to set tag on resources w
    | ith standard attribute. |
23 | Availability Zone Filter Extension | availability_zone_filter | Add
    | filter parameters to AvailabilityZone resource |
24 | If-Match constraints based on revision_number | revision-if-match |
    | Extension indicating that If-Match based on revision_number is supported.
    |
25 | Filter parameters validation | filter-validation | Provides validati
    | on on filter parameters. |

```

26 | Multi Provider Network | multi-provider | Expose mapping of virtual networks to multiple physical networks |

27 | Quota details management support | quota_details | Expose functions for quotas usage statistics per project |

28 | Address scope | address-scope | Address scopes extension. |

29 | Agent's Resource View Synced to Placement | agent-resources-synced | Stores success/failure of last sync to Placement |

30 | Subnet service types | subnet-service-types | Provides ability to set the subnet service_types field |

31 | Neutron Port MAC address regenerate | port-mac-address-regenerate | Network port MAC address regenerate |

32 | Add security_group type to network RBAC | rbac-security-groups | Add security_group type to network RBAC |

33 | Provider Network | provider | Expose mapping of virtual networks to physical networks |

34 | Neutron Service Type Management | service-type | API for retrieving service providers for Neutron advanced services |

35 | Neutron Extra DHCP options | extra_dhcp_opt | Extra options configuration for DHCP. For example PXE boot options to DHCP clients can be specified (e.g. tftp-server, server-ip-address, bootfile-name) |

36 | Port filtering on security groups | port-security-groups-filtering | Provides security groups filtering when listing ports |

37 | Resource timestamps | standard-attr-timestamp | Adds created_at and updated_at fields to all Neutron resources that have Neutron standard attributes. |

38 | Resource revision numbers | standard-attr-revisions | This extension will display the revision number of neutron resources. |

39 | Pagination support | pagination | Extension that indicates that pagination is enabled. |

40 | Sorting support | sorting | Extension that indicates that sorting is enabled. |

41 | security-group | security-group | The security groups extension. |

42 | RBAC Policies | rbac-policies | Allows creation and modification of policies that control tenant access to resources. |

43 | standard-attr-description | standard-attr-description | Extension to add descriptions to standard attributes |

44 | IP address substring filtering | ip-substring-filtering | Provides IP address substring filtering when listing ports |

45 | Port Security | port-security | Provides port security |

46 | Allowed Address Pairs | allowed-address-pairs | Provides allowed address pairs |

47 | project_id field enabled | project-id | Extension that indicates that project_id field is enabled. |

48 | Port Bindings Extended | binding-extended | Expose port bindings of a virtual port to external application |


```

49 +-----+
+-----+
+-----+
+-----+
+-----+

50 [root@controller ~]# openstack network agent list
51 +-----+-----+-----+-----+
+-----+-----+-----+-----+
52 | ID | Agent Type | Host | Availability Zone | Alive | State | Binary |
|
53 +-----+-----+-----+-----+
+-----+-----+-----+-----+
54 | 8c8f45c3-8354-4c09-8ba2-670b574994cf | DHCP agent | controller | nova | :- ) | UP | neutron-dhcp-agent |
55 | 9bf97f36-d648-4ccb-b530-37d1f6c1e153 | Metadata agent | controller | None | :- ) | UP | neutron-metadata-agent |
56 | b181033d-eee5-4974-9705-efdb918f7039 | Linux bridge agent | compute | None | :- ) | UP | neutron-linuxbridge-agent |
57 | e1b8fba2-b69b-4561-a1fd-d5e638760fe3 | Linux bridge agent | controller | None | :- ) | UP | neutron-linuxbridge-agent |
58 +-----+-----+-----+-----+
+-----+-----+-----+-----+
59 [root@controller ~]#

```

至此return服务完成

安装仪表盘服务horizon

```

1 [root@compute ~]# yum install openstack-dashboard -y
2 [root@compute ~]# vim /etc/openstack-dashboard/local_settings
3 [root@compute ~]#
4 [root@compute ~]# cd /usr/share/openstack-dashboard
5 [root@compute openstack-dashboard]# python manage.py make_web_conf --apache > /etc/httpd/conf.d/openstack-dashboard.conf
6 [root@compute openstack-dashboard]# ln -s /etc/openstack-dashboard /usr/share/openstack-dashboard/openstack_dashboard/conf
7 [root@compute openstack-dashboard]# systemctl enable httpd.service
8 Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.service.
9 [root@compute openstack-dashboard]# systemctl restart httpd.service
10 [root@compute openstack-dashboard]#

```

配置文件附录（参考可用）

controller节点：

```
1 数据库
```

```
2 [root@controller ~]# cat /etc/my.cnf.d/openstack.cnf
3 [mysqld]
4
5 bind-address = 192.168.100.147
6
7 default-storage-engine = innodb
8
9 innodb_file_per_table = on
10
11 max_connections = 4096
12
13 collation-server = utf8_general_ci
14
15 character-set-server = utf8
16 memcache服务
17 [root@controller ~]# cat /etc/sysconfig/memcached
18 PORT="11211"
19 USER="memcached"
20 MAXCONN="1024"
21 CACHESIZE="64"
22 OPTIONS="-l 127.0.0.1,::1,controller"
23
24 ETCD服务
25 [root@controller ~]# cat /etc/sysconfig/memcached
26 PORT="11211"
27 USER="memcached"
28 MAXCONN="1024"
29 CACHESIZE="64"
30 OPTIONS="-l 127.0.0.1,::1,controller"
31 [root@controller ~]# cat /etc/etcd/etcd.conf
32 cat: vim: 没有那个文件或目录
33 #[Member]
34 #ETCD_CORS=""
35 ETCD_DATA_DIR="/var/lib/etcd/default.etcd"
36 #ETCD_DATA_DIR="/var/lib/etcd/default.etcd"
37 #ETCD_WAL_DIR=""
38 ETCD_LISTEN_PEER_URLS="http://192.168.100.147:2380"
39 ETCD_LISTEN_CLIENT_URLS="http://192.168.100.147:2379"
40 #ETCD_MAX_SNAPSHOTS="5"
41 #ETCD_MAX_WALS="5"
42 ETCD_NAME="controller"
```

```
43 #ETCD_SNAPSHOT_COUNT="100000"
44 #ETCD_HEARTBEAT_INTERVAL="100"
45 #ETCD_ELECTION_TIMEOUT="1000"
46 #ETCD_QUOTA_BACKEND_BYTES="0"
47 #ETCD_MAX_REQUEST_BYTES="1572864"
48 #ETCD_GRPC_KEEPALIVE_MIN_TIME="5s"
49 #ETCD_GRPC_KEEPALIVE_INTERVAL="2h0m0s"
50 #ETCD_GRPC_KEEPALIVE_TIMEOUT="20s"
51 #
52 #[Clustering]
53 ETCD_INITIAL_ADVERTISE_PEER_URLS="http://192.168.100.147:2380"
54 ETCD_ADVERTISE_CLIENT_URLS="http://192.168.100.147:2379"
55 #ETCD_DISCOVERY=""
56 #ETCD_DISCOVERY_FALLBACK="proxy"
57 #ETCD_DISCOVERY_PROXY=""
58 #ETCD_DISCOVERY_SRV=""
59 ETCD_INITIAL_CLUSTER="controller=http://192.168.100.147:2380"
60 ETCD_INITIAL_CLUSTER_TOKEN="etcd-cluster-01"
61 ETCD_INITIAL_CLUSTER_STATE="new"
62 #ETCD_STRICT_RECONFIG_CHECK="true"
63 #ETCD_ENABLE_V2="true"
64 #
65 #[Proxy]
66 #ETCD_PROXY="off"
67 #ETCD_PROXY_FAILURE_WAIT="5000"
68 #ETCD_PROXY_REFRESH_INTERVAL="30000"
69 #ETCD_PROXY_DIAL_TIMEOUT="1000"
70 #ETCD_PROXY_WRITE_TIMEOUT="5000"
71 #ETCD_PROXY_READ_TIMEOUT="0"
72 #
73 #[Security]
74 #ETCD_CERT_FILE=""
75 #ETCD_KEY_FILE=""
76 #ETCD_CLIENT_CERT_AUTH="false"
77 #ETCD_TRUSTED_CA_FILE=""
78 #ETCD_AUTO_TLS="false"
79 #ETCD_PEER_CERT_FILE=""
80 #ETCD_PEER_KEY_FILE=""
81 #ETCD_PEER_CLIENT_CERT_AUTH="false"
82 #ETCD_PEER_TRUSTED_CA_FILE=""
```

```
83 #ETCD_PEER_AUTO_TLS="false"
84 #
85 #[Logging]
86 #ETCD_DEBUG="false"
87 #ETCD_LOG_PACKAGE_LEVELS=""
88 #ETCD_LOG_OUTPUT="default"
89 #
90 #[Unsafe]
91 #ETCD_FORCE_NEW_CLUSTER="false"
92 #
93 #[Version]
94 #ETCD_VERSION="false"
95 #ETCD_AUTO_COMPACTION_RETENTION="0"
96 #
97 #[Profiling]
98 #ETCD_ENABLE_PPROF="false"
99 #ETCD_METRICS="basic"
100 #
101 #[Auth]
102 #ETCD_AUTH_TOKEN="simple"
```

keystone服务

```
1 [root@controller ~]# cat /etc/keystone/keystone.conf
2 [DEFAULT]
3 [application_credential]
4 [assignment]
5 [auth]
6 [cache]
7 [catalog]
8 [cors]
9 [credential]
10 [database]
11 connection = mysql+pymysql://keystone:000000@controller/keystone
12
13 [domain_config]
14 [endpoint_filter]
15 [endpoint_policy]
16 [eventlet_server]
17 [federation]
```

```

18 [fernet_receipts]
19 [fernet_tokens]
20 [healthcheck]
21 [identity]
22 [identity_mapping]
23 [jwt_tokens]
24 [ldap]
25 [memcache]
26 [oauth1]
27 [oslo_messaging_amqp]
28 [oslo_messaging_kafka]
29 [oslo_messaging_notifications]
30 [oslo_messaging_rabbit]
31 [oslo_middleware]
32 [oslo_policy]
33 [policy]
34 [profiler]
35 [receipt]
36 [resource]
37 [revoke]
38 [role]
39 [saml]
40 [security_compliance]
41 [shadow_users]
42 [token]
43 provider = fernet
44
45 [tokenless_auth]
46 [totp]
47 [trust]
48 [unified_limit]
49 [wsgi]
50 [root@controller ~]#

```

vim /etc/httpd/conf/httpd.conf

```

# If your host doesn't have a registered DNS name, e
#
#ServerName www.example.com:80
#ServerName controller
#
# Deny access to the entirety of your server's files
# explicitly permit access to web content directorio

```

环境变量

```
1 [root@controller ~]# cat admin-openrc.sh
2 export OS_PROJECT_DOMAIN_NAME=default
3 export OS_USER_DOMAIN_NAME=default
4 export OS_PROJECT_NAME=admin
5 export OS_USERNAME=admin
6 export OS_PASSWORD=000000
7 export OS_AUTH_URL=http://controller:5000/v3
8 export OS_IDENTITY_API_VERSION=3
9 export OS_IMAGE_API_VERSION=2
```

glance服务

```
1 [root@controller ~]# cat /etc/glance/glance-api.conf
2 [DEFAULT]
3 [cinder]
4 [cors]
5 [database]
6 connection = mysql+pymysql://glance:000000@controller/glance
7
8 [file]
9 [glance.store.http.store]
10 [glance.store.rbd.store]
11 [glance.store.sheepdog.store]
12 [glance.store.swift.store]
13 [glance.store.vmware_datastore.store]
14 [glance_store]
15 stores = file,http
16 default_store = file
17 filesystem_store_datadir = /var/lib/glance/images/
18
19 [image_format]
20 [keystone_authtoken]
21 www_authenticate_uri = http://controller:5000
22 auth_url = http://controller:5000
23 memcached_servers = controller:11211
24 auth_type = password
25 project_domain_name = default
26 user_domain_name = default
27 project_name = service
28 username = glance
```

```

29 password = 000000
30
31 [oslo_concurrency]
32 [oslo_messaging_amqp]
33 [oslo_messaging_kafka]
34 [oslo_messaging_notifications]
35 [oslo_messaging_rabbit]
36 [oslo_middleware]
37 [oslo_policy]
38 [paste_deploy]
39 flavor = keystone
40
41 [profiler]
42 [store_type_location_strategy]
43 [task]
44 [taskflow_executor]
45 [root@controller ~]#

```

placement服务

```

1 [root@controller ~]# cat /etc/placement/placement.conf
2 [DEFAULT]
3 [api]
4 auth_strategy = keystone
5
6 [cors]
7 [keystone_authtoken]
8 auth_url = http://controller:5000/v3
9 memcached_servers = controller:11211
10 auth_type = password
11 project_domain_name = default
12 user_domain_name = default
13 project_name = service
14 username = placement
15 password = 000000
16
17 [oslo_policy]
18 [placement]
19 [placement_database]
20 connection = mysql+pymysql://placement:000000@controller/placement
21

```

```
22 [profiler]
23 [root@controller ~]#
```

```
1 [root@controller ~]# cat /etc/httpd/conf.d/00-placement-api.conf
2 Listen 8778
3
4 <VirtualHost *:8778>
5     WSGIProcessGroup placement-api
6     WSGIApplicationGroup %{GLOBAL}
7     WSGIPassAuthorization On
8     WSGIDaemonProcess placement-api processes=3 threads=1 user=placement
group=placement
9     WSGIScriptAlias / /usr/bin/placement-api
10    <IfVersion >= 2.4>
11        ErrorLogFormat "%M"
12    </IfVersion>
13    ErrorLog /var/log/placement/placement-api.log
14    #SSLEngine On
15    #SSLCertificateFile ...
16    <Directory /usr/bin>
17        <IfVersion >= 2.4>
18            Require all granted
19        </IfVersion>
20        <IfVersion < 2.4>
21            Order allow,deny
22            Allow from all
23        </IfVersion>
24    </Directory>
25    #SSLCertificateKeyFile ...
26
27 </VirtualHost>
28
29 Alias /placement-api /usr/bin/placement-api
30 <Location /placement-api>
31     SetHandler wsgi-script
32     Options +ExecCGI
33     WSGIProcessGroup placement-api
34     WSGIApplicationGroup %{GLOBAL}
35     WSGIPassAuthorization On
36 </Location>
```


服务nova (控制节点)

```
1 [root@controller ~]# cat /etc/nova/nova.conf
2 [DEFAULT]
3 enabled_apis = osapi_compute,metadata
4 transport_url = rabbit://openstack:000000@controller:5672/
5 my_ip = 192.168.100.147
6 use_neutron = true
7 firewall_driver = nova.virt.firewall.NoopFirewallDriver
8
9 [api]
10 auth_strategy = keystone
11 [api_database]
12 connection = mysql+pymysql://nova:000000@controller/nova_api
13
14 [barbican]
15 [cache]
16 [cinder]
17 [compute]
18 [conductor]
19 [console]
20 [consoleauth]
21 [cors]
22 [database]
23 connection = mysql+pymysql://nova:000000@controller/nova
24
25 [devices]
26 [ephemeral_storage_encryption]
27 [filter_scheduler]
28 [glance]
29 api_servers = http://controller:9292
30
31 [guestfs]
32 [healthcheck]
33 [hyperv]
34 [ironic]
35 [key_manager]
36 [keystone]
37 [keystone_authtoken]
```

```
38 www_authenticate_uri = http://controller:5000/
39 auth_url = http://controller:5000/
40 memcached_servers = controller:11211
41 auth_type = password
42 project_domain_name = default
43 user_domain_name = default
44 project_name = service
45 username = nova
46 password = 000000
47
48 [libvirt]
49
50
51 [metrics]
52 [mks]
53 [neutron]
54 auth_url = http://controller:5000
55 auth_type = password
56 project_domain_name = default
57 user_domain_name = default
58 region_name = RegionOne
59 project_name = service
60 username = neutron
61 password = 000000
62 service_metadata_proxy = true
63 metadata_proxy_shared_secret = 000000
64
65 [notifications]
66 [osapi_v21]
67 [oslo_concurrency]
68 lock_path = /var/lib/nova/tmp
69
70 [oslo_messaging_amqp]
71 [oslo_messaging_kafka]
72 [oslo_messaging_notifications]
73 [oslo_messaging_rabbit]
74 [oslo_middleware]
75 [oslo_policy]
76 [pci]
77 [placement]
```

```
78 region_name = RegionOne
79 project_domain_name = default
80 project_name = service
81 auth_type = password
82 user_domain_name = default
83 auth_url = http://controller:5000/v3
84 username = placement
85 password = 000000
86
87 [powervm]
88 [privsep]
89 [profiler]
90 [quota]
91 [rdp]
92 [remote_debug]
93 [scheduler]
94 discover_hosts_in_cells_interval = 300
95
96 [serial_console]
97 [service_user]
98 [spice]
99 [upgrade_levels]
100 [vault]
101 [vendordata_dynamic_auth]
102 [vmware]
103 [vnc]
104 enabled = true
105 server_listen = $my_ip
106 server_proxyclient_address = $my_ip
107
108 [workarounds]
109 [wsgi]
110 [xenserver]
111 [xvp]
112 [zvm]
```

服务nova（计算节点）

```
1 [root@compute openstack-dashboard]# cat /etc/nova/nova.conf
2 [DEFAULT]
```

```
3 enabled_apis = osapi_compute,metadata
4 transport_url = rabbit://openstack:000000@controller
5 my_ip = 192.168.100.148
6 use_neutron = true
7 firewall_driver = nova.virt.firewall.NoopFirewallDriver
8
9 [api]
10 auth_strategy = keystone
11
12 [api_database]
13 [barbican]
14 [cache]
15 [cinder]
16 [compute]
17 [conductor]
18 [console]
19 [consoleauth]
20 [cors]
21 [database]
22 [devices]
23 [ephemeral_storage_encryption]
24 [filter_scheduler]
25 [glance]
26 api_servers = http://controller:9292
27
28 [guestfs]
29 [healthcheck]
30 [hyperv]
31 [ironic]
32 [key_manager]
33 [keystone]
34 [keystone_authtoken]
35 www_authenticate_uri = http://controller:5000/
36 auth_url = http://controller:5000/
37 memcached_servers = controller:11211
38 auth_type = password
39 project_domain_name = default
40 user_domain_name = default
41 project_name = service
42 username = nova
```

```
43 password = 000000
44
45 [libvirt]
46 virt_type = qemu
47 [metrics]
48 [mks]
49 [neutron]
50 auth_url = http://controller:5000
51 auth_type = password
52 project_domain_name = default
53 user_domain_name = default
54 region_name = RegionOne
55 project_name = service
56 username = neutron
57 password = 000000
58
59 [notifications]
60 [osapi_v21]
61 [oslo_concurrency]
62 lock_path = /var/lib/nova/tmp
63
64 [oslo_messaging_amqp]
65 [oslo_messaging_kafka]
66 [oslo_messaging_notifications]
67 [oslo_messaging_rabbit]
68 [oslo_middleware]
69 [oslo_policy]
70 [pci]
71 [placement]
72 region_name = RegionOne
73 project_domain_name = default
74 project_name = service
75 auth_type = password
76 user_domain_name = default
77 auth_url = http://controller:5000/v3
78 username = placement
79 password = 000000
80
81 [powervm]
82 [privsep]
```

```

83 [profiler]
84 [quota]
85 [rdp]
86 [remote_debug]
87 [scheduler]
88 [serial_console]
89 [service_user]
90 [spice]
91 [upgrade_levels]
92 [vault]
93 [vendordata_dynamic_auth]
94 [vmware]
95 [vnc]
96 enabled = true
97 server_listen = 0.0.0.0
98 server_proxyclient_address = $my_ip
99 novncproxy_base_url = http://192.168.100.147:6080/vnc_auto.html
100
101 [workarounds]
102 [wsgi]
103 [xenserver]
104 [xvp]
105 [zvm]

```

服务neutron controller节点

```

1 [root@controller ~]# cat /etc/neutron/neutron.conf
2 [DEFAULT]
3 core_plugin = ml2
4 service_plugins =
5 transport_url = rabbit://openstack:000000@controller
6 auth_strategy = keystone
7 notify_nova_on_port_status_changes = true
8 notify_nova_on_port_data_changes = true
9
10 [cors]
11 [database]
12 connection = mysql+pymysql://neutron:000000@controller/neutron
13

```

```
14 [keystone_authtoken]
15 www_authenticate_uri = http://controller:5000
16 auth_url = http://controller:5000
17 memcached_servers = controller:11211
18 auth_type = password
19 project_domain_name = default
20 user_domain_name = default
21 project_name = service
22 username = neutron
23 password = 000000
24
25 [oslo_concurrency]
26 lock_path = /var/lib/neutron/tmp
27
28 [oslo_messaging_amqp]
29 [oslo_messaging_kafka]
30 [oslo_messaging_notifications]
31 [oslo_messaging_rabbit]
32 [oslo_middleware]
33 [oslo_policy]
34 [privsep]
35 [ssl]
36 [nova]
37 auth_url = http://controller:5000
38 auth_type = password
39 project_domain_name = default
40 user_domain_name = default
41 region_name = RegionOne
42 project_name = service
43 username = nova
44 password = 000000
45
46 [root@controller ~]#
47 [root@controller ~]# cat /etc/neutron/plugins/ml2/ml2_conf.ini
48 [DEFAULT]
49
50 [ml2]
51 type_drivers = flat,vlan
52 tenant_network_types =
53 mechanism_drivers = linuxbridge
```

```
54 extension_drivers = port_security
55
56 [ml2_type_flat]
57 flat_networks = provider
58
59 [securitygroup]
60 enable_ipset = true
61
62 [root@controller ~]# cat /etc/neutron/plugins/ml2/linuxbridge_agent.ini
63 [DEFAULT]
64
65 [linux_bridge]
66 physical_interface_mappings = provider:ens34
67
68 [vxlan]
69 enable_vxlan = false
70
71 [securitygroup]
72 enable_security_group = true
73 firewall_driver = neutron.agent.linux.iptables_firewall.IptablesFirewa
llDriver
74 [root@controller ~]#
75
76 [root@controller ~]# cat /etc/sysctl.conf
77 # sysctl settings are defined through files in
78 # /usr/lib/sysctl.d/, /run/sysctl.d/, and /etc/sysctl.d/.
79 #
80 # Vendors settings live in /usr/lib/sysctl.d/.
81 # To override a whole file, create a new file with the same in
82 # /etc/sysctl.d/ and put new settings there. To override
83 # only specific settings, add a file with a lexically later
84 # name in /etc/sysctl.d/ and put new settings there.
85 #
86
87 net.bridge.bridge-nf-call-iptables = 1
88 net.bridge.bridge-nf-call-ip6tables = 1
89 # For more information, see sysctl.conf(5) and sysctl.d(5).
90
91 [root@controller ~]# cat /etc/neutron/dhcp_agent.ini
92 [DEFAULT]
```



```

93
94 interface_driver = linuxbridge
95 dhcp_driver = neutron.agent.linux.dhcp.Dnsmasq
96 enable_isolated_metadata = true
97 [root@controller ~]#
98
99 [root@controller ~]# cat /etc/neutron/metadata_agent.ini
100 [DEFAULT]
101 nova_metadata_host = controller
102 metadata_proxy_shared_secret = 000000
103
104
105 [root@controller ~]# vim /etc/nova/nova.conf

```

```

[links]
[neutron]
auth_url = http://controller:5000
auth_type = password
project_domain_name = default
user_domain_name = default
region_name = RegionOne
project_name = service
username = neutron
password = 000000
service_metadata_proxy = true
metadata_proxy_shared_secret = 000000

```

计算节点网络服务neutron

```

1 [root@compute openstack-dashboard]# cat /etc/neutron/neutron.conf
2 [DEFAULT]
3 transport_url = rabbit://openstack:000000@controller
4 auth_strategy = keystone
5
6 [cors]
7 [database]
8 [keystone_authtoken]
9 www_authenticate_uri = http://controller:5000
10 auth_url = http://controller:5000
11 memcached_servers = controller:11211
12 auth_type = password
13 project_domain_name = default
14 user_domain_name = default

```

```
15 project_name = service
16 username = neutron
17 password = 000000
18
19 [oslo_concurrency]
20
21 lock_path = /var/lib/neutron/tmp
22 [oslo_messaging_amqp]
23 [oslo_messaging_kafka]
24 [oslo_messaging_notifications]
25 [oslo_messaging_rabbit]
26 [oslo_middleware]
27 [oslo_policy]
28 [privsep]
29 [ssl]
30 [root@compute openstack-dashboard]#
31
32 [root@compute openstack-dashboard]# cat /etc/neutron/plugins/ml2/linux
bridge_agent.ini
33 [DEFAULT]
34
35 [linux_bridge]
36 physical_interface_mappings = provider:ens34
37
38 [vxlan]
39 enable_vxlan = false
40
41 [securitygroup]
42 enable_security_group = true
43 firewall_driver = neutron.agent.linux.iptables_firewall.IptablesFirewa
llDriver
44 [root@compute openstack-dashboard]#
45
46 [root@compute openstack-dashboard]# vim /etc/sysctl.conf
47 [root@compute openstack-dashboard]#
```

```
192.168.100.147 192.168.100.148 x 192.168.100.148 (1)
# sysctl settings are defined through files in
# /usr/lib/sysctl.d/, /run/sysctl.d/, and /etc/sysctl.d/.
#
# Vendors settings live in /usr/lib/sysctl.d/.
# To override a whole file, create a new file with the same in
# /etc/sysctl.d/ and put new settings there. To override
# only specific settings, add a file with a lexically later
# name in /etc/sysctl.d/ and put new settings there.
#
net.bridge.bridge-nf-call-iptables = 1
net.bridge.bridge-nf-call-ip6tables = 1
# For more information, see sysctl.conf(5) and sysctl.d(5).
~
~
```

```
1 [root@compute openstack-dashboard]# vim /etc/nova/nova.conf
```

```
[neutron]
auth_url = http://controller:5000
auth_type = password
project_domain_name = default
user_domain_name = default
region_name = RegionOne
project_name = service
username = neutron
password = 000000
```

服务horizon

```
1
2
3 ALLOWED_HOSTS = ['*']
4
5 CACHES = {
6     'default': {
7         'BACKEND': 'django.core.cache.backends.memcached.MemcachedCache',
8         'LOCATION': 'controller:11211',
9     },
10 }
11 SESSION_ENGINE = 'django.contrib.sessions.backends.cache'
12 EMAIL_BACKEND = 'django.core.mail.backends.console.EmailBackend'
13
14 OPENSTACK_HOST = "controller"
```

```

15 OPENSTACK_KEYSTONE_URL = "http://%s:5000/v3" % OPENSTACK_HOST
16
17 # The OPENSTACK_NEUTRON_NETWORK settings can be used to enable options
18 # services provided by neutron. Options currently available are load
19 # balancer service, security groups, quotas, VPN service.
20 OPENSTACK_KEYSTONE_MULTIDOMAIN_SUPPORT = True
21 OPENSTACK_KEYSTONE_DEFAULT_DOMAIN = "Default"
22 OPENSTACK_KEYSTONE_DEFAULT_ROLE = "user"
23 OPENSTACK_API_VERSIONS = {
24     "identity": 3,
25     "image": 2,
26     "volume": 3,
27 }
28
29 OPENSTACK_NEUTRON_NETWORK = {
30     'enable_auto_allocated_network': False,
31     'enable_distributed_router': False,
32     'enable_fip_topology_check': False,
33     'enable_ha_router': False,
34     'enable_ipv6': False,
35     # TODO(amotoki): Drop OPENSTACK_NEUTRON_NETWORK completely from here.
36     # enable_quotas has the different default value here.
37     'enable_quotas': False,
38     'enable_lb': False,
39     'enable_rbac_policy': False,
40     'enable_router': False,
41
42     'default_dns_nameservers': [],
43     'supported_provider_types': ['*'],
44     'segmentation_id_range': {},
45     'extra_provider_types': {},
46     'supported_vnic_types': ['*'],
47     'physical_networks': [],
48
49 }
50
51 # The timezone of the server. This should correspond with the timezone
52 # of your entire OpenStack installation, and hopefully be in UTC.
53 TIME_ZONE = "Asia/Shanghai"

```

拓展

创建虚拟网络

```
1 双节点
2 [root@controller ~]# yum remove NetworkManager -y
3
4 [root@controller ~]# . admin-openrc.sh
5 [root@controller ~]# openstack network create --share --external --pro
  vider-physical-network provider --provider-network-type flat vm-network
6 +-----+-----+
  -----+
7 | Field | Value |
8 +-----+-----+
  -----+
9 | admin_state_up | UP |
10 | availability_zone_hints | |
11 | availability_zones | |
12 | created_at | 2021-11-09T06:36:12Z |
13 | description | |
14 | dns_domain | None |
15 | id | 521f714a-6671-4d89-b968-db12263882a5 |
16 | ipv4_address_scope | None |
17 | ipv6_address_scope | None |
18 | is_default | None |
19 | is_vlan_transparent | None |
20 | location | cloud='', project.domain_id=, project.domain_name='defaul
  t', project.id='883c664aed47476d93e306deb5ea24f2', project.name='admin',
  region_name='', zone= |
21 | mtu | 1500 |
22 | name | vm-network |
23 | port_security_enabled | True |
24 | project_id | 883c664aed47476d93e306deb5ea24f2 |
25 | provider:network_type | flat |
26 | provider:physical_network | provider |
```

```

27 | provider:segmentation_id | None |
28 | qos_policy_id | None |
29 | revision_number | 1 |
30 | router:external | External |
31 | segments | None |
32 | shared | True |
33 | status | ACTIVE |
34 | subnets | |
35 | tags | |
36 | updated_at | 2021-11-09T06:36:12Z |
37 +-----+-----+
-----+
38 [root@controller ~]# openstack subnet create --network vm-network --a
location-pool start=10.8.20.50,end=10.8.20.60 --dns-nameserver 10.8.20.1
--gateway 10.8.20.1 --subnet-range 10.8.20.0/24 vm-subnetwork^C
39 [root@controller ~]# openstack subnet create --network vm-network --a
location-pool start=192.168.73.10,end=192.168.73.254 --dns-nameserver 19
2.168.73.1 --gateway 192.168.73.1 --subnet-range 192.168.73.0/24 vm-subne
twork
40 +-----+-----+
-----+
41 | Field | Value |
42 +-----+-----+
-----+
43 | allocation_pools | 192.168.73.10-192.168.73.254 |
44 | cidr | 192.168.73.0/24 |
45 | created_at | 2021-11-09T06:37:40Z |
46 | description | |
47 | dns_nameservers | 192.168.73.1 |
48 | enable_dhcp | True |
49 | gateway_ip | 192.168.73.1 |
50 | host_routes | |
51 | id | 3981ccd2-3119-46ad-a98b-c97dde4b459f |
52 | ip_version | 4 |
53 | ipv6_address_mode | None |
54 | ipv6_ra_mode | None |
55 | location | cloud='', project.domain_id=, project.domain_name='defaul
t', project.id='883c664aed47476d93e306deb5ea24f2', project.name='admin',
region_name='', zone= |
56 | name | vm-subnetwork |

```

```

57 | network_id | 521f714a-6671-4d89-b968-db12263882a5 |
58 | prefix_length | None |
59 | project_id | 883c664aed47476d93e306deb5ea24f2 |
60 | revision_number | 0 |
61 | segment_id | None |
62 | service_types | |
63 | subnetpool_id | None |
64 | tags | |
65 | updated_at | 2021-11-09T06:37:40Z |

```

```

66 +-----+
-----+

```

```
67 [root@controller ~]# openstack network list
```

```

68 +-----+
-----+

```

```
69 | ID | Name | Subnets |
```

```

70 +-----+
-----+

```

```
71 | 521f714a-6671-4d89-b968-db12263882a5 | vm-network | 3981ccd2-3119-46ad-a98b-c97dde4b459f |
```

```

72 +-----+
-----+

```

```
73 [root@controller ~]#
```

```
74
```

```
75 [root@controller ~]# ip a
```

```

        inet6 fe80::ff85:a272:aa89:b205/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
6: tap1dd8d327-a3@if2: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue master brq521f714a-66
state UP group default qlen 1000
    link/ether 26:be:ac:6c:e3:e8 brd ff:ff:ff:ff:ff:ff link-netnsid 0
7: brq521f714a-66: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default qlen 1000
    link/ether 00:0c:29:ca:b5:57 brd ff:ff:ff:ff:ff:ff
    inet 192.168.73.33/24 brd 192.168.73.255 scope global brq521f714a-66
        valid_lft forever preferred_lft forever
    inet6 fe80::10be:f2ff:fe9e:f68a/64 scope link
        valid_lft forever preferred_lft forever

```

[root@controller ~]# systemctl restart network

[root@controller ~]# ip a

```

        valid_lft forever preferred_lft forever
6: tap1dd8d327-a3@if2: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue master brq521f714a-66
state UP group default qlen 1000
    link/ether 26:be:ac:6c:e3:e8 brd ff:ff:ff:ff:ff:ff link-netnsid 0
7: brq521f714a-66: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default qlen 1000
    link/ether 00:0c:29:ca:b5:57 brd ff:ff:ff:ff:ff:ff
    inet 192.168.73.33/24 brd 192.168.73.255 scope global brq521f714a-66
        valid_lft forever preferred_lft forever
    inet6 fe80::10be:f2ff:fe9e:f68a/64 scope link
        valid_lft forever preferred_lft forever

```

```

        valid_lft forever preferred_lft forever
3: ens34: <BROADCAST,MULTICAST,PROMISC,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast master brq521f714a-66 state UP group default qlen 1000
    link/ether 00:0c:29:ca:b5:57 brd ff:ff:ff:ff:ff:ff
    inet 192.168.73.35/24 brd 192.168.73.255 scope global dynamic ens34
        valid_lft 1790sec preferred_lft 1790sec
    inet6 fe80::d273:e06f:6642:699d/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
    inet6 fe80::20c:29ff:feca:b557/64 scope link
        valid_lft forever preferred_lft forever

```

```

1 [root@controller ~]# yum install bridge-utils -y
2 [root@controller ~]# brctl show
3 bridge name bridge id STP enabled interfaces
4 brq521f714a-66 8000.000c29cab557 no ens34
5 tap1dd8d327-a3

```

启动实例

```

1 (1) 确认已经停止或者删除了NetworkManager软件包
2 systemctl stop NetworkManager
3 systemctl disable NetworkManager
4 yum remove NetworkManager -y
5 (2) 重启网络
6 systemctl restart network
7
8 创建实例类型
9 [root@controller ~]# . admin-openrc.sh
10 [root@controller ~]# openstack flavor create --id 0 --vcpus 1 --ram 64
    --disk 1 m1.nano
11 +-----+-----+
12 | Field | Value |
13 +-----+-----+
14 | OS-FLV-DISABLED:disabled | False |
15 | OS-FLV-EXT-DATA:ephemeral | 0 |
16 | disk | 1 |
17 | id | 0 |
18 | name | m1.nano |
19 | os-flavor-access:is_public | True |
20 | properties | |
21 | ram | 64 |
22 | rxtx_factor | 1.0 |
23 | swap | |
24 | vcpus | 1 |
25 +-----+-----+
26 [root@controller ~]# openstack flavor list
27 +---+---+---+---+---+---+---+---+---+
28 | ID | Name | RAM | Disk | Ephemeral | VCPUs | Is Public |
29 +---+---+---+---+---+---+---+---+---+
30 | 0 | m1.nano | 64 | 1 | 0 | 1 | True |
31 +---+---+---+---+---+---+---+---+

```



```

32 [root@controller ~]# openstack user create --domain default --password
000000 yp
33 +-----+-----+
34 | Field | Value |
35 +-----+-----+
36 | domain_id | default |
37 | enabled | True |
38 | id | 1cecdf6a68834655b60be79d2b0441be |
39 | name | yp |
40 | options | {} |
41 | password_expires_at | None |
42 +-----+-----+
43 [root@controller ~]# openstack project create --domain default --description "yp Project" yp-project +-----+
-----+
44 | Field | Value |
45 +-----+-----+
46 | description | yp Project |
47 | domain_id | default |
48 | enabled | True |
49 | id | 9093803189af46119e0aa87d665a4abb |
50 | is_domain | False |
51 | name | yp-project |
52 | options | {} |
53 | parent_id | default |
54 | tags | [] |
55 +-----+-----+
56
57 [root@controller ~]# openstack role add --project yp-project --user yp
user
58 [root@controller ~]#
59
60 [root@controller ~]# cat yp-openrc.sh
61 export OS_PROJECT_DOMAIN_NAME=default
62
63 export OS_USER_DOMAIN_NAME=default
64
65 export OS_PROJECT_NAME=yp-project
66
67 export OS_USERNAME=yp
68
69 export OS_PASSWORD=000000

```

```

70
71 export OS_AUTH_URL=http://controller:5000/v3
72
73 export OS_IDENTITY_API_VERSION=3
74
75 export OS_IMAGE_API_VERSION=2
76
77 创建密钥
78 [root@controller ~]# . yp-openrc.sh
79 [root@controller ~]# ssh-keygen -q -N ""
80 Enter file in which to save the key (/root/.ssh/id_rsa):
81 [root@controller ~]# openstack keypair create --public-key ~/.ssh/id_rsa.pub ypkey
82 +-----+
83 | Field | Value |
84 +-----+
85 | fingerprint | 04:74:97:89:d6:03:e3:f1:be:29:31:84:fc:ca:60:a3 |
86 | name | ypkey |
87 | user_id | 1cecdf6a68834655b60be79d2b0441be |
88 +-----+
89 [root@controller ~]# openstack keypair list
90 +-----+
91 | Name | Fingerprint |
92 +-----+
93 | ypkey | 04:74:97:89:d6:03:e3:f1:be:29:31:84:fc:ca:60:a3 |
94 +-----+
95 [root@controller ~]#
96
97 创建安全组
98 [root@controller ~]# openstack security group rule create --proto icmp default
99 +-----+
100 | Field | Value |
101 +-----+
102 | created_at | 2021-11-09T06:51:50Z |
103 | description | |
104 | direction | ingress |
105 | ether_type | IPv4 |

```

```

106 | id | 625ab51e-39d2-44ba-8cc4-d8724331b2ca |
107 | location | cloud='', project.domain_id=, project.domain_name='default', project.id='9093803189af46119e0aa87d665a4abb', project.name='yp-project', region_name='', zone= |
108 | name | None |
109 | port_range_max | None |
110 | port_range_min | None |
111 | project_id | 9093803189af46119e0aa87d665a4abb |
112 | protocol | icmp |
113 | remote_group_id | None |
114 | remote_ip_prefix | 0.0.0.0/0 |
115 | revision_number | 0 |
116 | security_group_id | 256f82ee-7ad8-42a9-9ba3-cc310d28075f |
117 | tags | [] |
118 | updated_at | 2021-11-09T06:51:50Z |
119 +-----+-----+
-----+
120 [root@controller ~]# openstack security group rule create --proto tcp
--dst-port 22 default
121 +-----+-----+
-----+
122 | Field | Value |
123 +-----+-----+
-----+
124 | created_at | 2021-11-09T06:52:00Z |
125 | description | |
126 | direction | ingress |
127 | ether_type | IPv4 |
128 | id | d497543c-eff3-4004-9ee0-19b6da378e3e |
129 | location | cloud='', project.domain_id=, project.domain_name='default', project.id='9093803189af46119e0aa87d665a4abb', project.name='yp-project', region_name='', zone= |
130 | name | None |
131 | port_range_max | 22 |
132 | port_range_min | 22 |
133 | project_id | 9093803189af46119e0aa87d665a4abb |
134 | protocol | tcp |
135 | remote_group_id | None |
136 | remote_ip_prefix | 0.0.0.0/0 |
137 | revision_number | 0 |

```

```

138 | security_group_id | 256f82ee-7ad8-42a9-9ba3-cc310d28075f |
139 | tags | [] |
140 | updated_at | 2021-11-09T06:52:00Z |
141 +-----+-----+
-----+
142 [root@controller ~]#
143
144 [root@controller ~]# openstack flavor list
145 +-----+-----+-----+-----+-----+-----+-----+
146 | ID | Name | RAM | Disk | Ephemeral | VCPUs | Is Public |
147 +-----+-----+-----+-----+-----+-----+-----+
148 | 0 | m1.nano | 64 | 1 | 0 | 1 | True |
149 +-----+-----+-----+-----+-----+-----+-----+
150 [root@controller ~]# openstack image list
151 +-----+-----+-----+-----+-----+-----+-----+
152 | ID | Name | Status |
153 +-----+-----+-----+-----+-----+-----+-----+
154 | 1cdb078a-8d30-4d31-9cab-1281a0c8b935 | cirros-0.3.3 | active |
155 +-----+-----+-----+-----+-----+-----+-----+
156 [root@controller ~]#
157 [root@controller ~]# openstack network list
158 +-----+-----+-----+-----+-----+-----+-----+
-----+
159 | ID | Name | Subnets |
160 +-----+-----+-----+-----+-----+-----+-----+
-----+
161 | 521f714a-6671-4d89-b968-db12263882a5 | vm-network | 3981ccd2-3119-4
6ad-a98b-c97dde4b459f |
162 +-----+-----+-----+-----+-----+-----+-----+
-----+
163 [root@controller ~]#
164 [root@controller ~]# openstack security group list
165 +-----+-----+-----+-----+-----+-----+-----+
-----+
166 | ID | Name | Description | Project | Tags |
167 +-----+-----+-----+-----+-----+-----+-----+
-----+
168 | 256f82ee-7ad8-42a9-9ba3-cc310d28075f | default | 缺省安全组 | 909380
3189af46119e0aa87d665a4abb | [] |
169 +-----+-----+-----+-----+-----+-----+-----+
-----+
170

```


```
171 [root@controller ~]# vim /etc/nova/nova.conf
```

```
[DEFAULT]
enabled_apis = osapi_compute,metadata
transport_url = rabbit://openstack:000000@controller:5672/
my_ip = 192.168.100.147
use_neutron = true
firewall_driver = nova.virt.firewall.NoopFirewallDriver
vif_plugging_is_fatal = false
vif_plugging_timeout = 0
```

```
1 [root@controller ~]# . admin-openrc.sh
2 [root@controller ~]# openstack server list
```

```
3 +-----+-----+-----+-----+
4 | ID | Name | Status | Networks | Image | Flavor |
5 +-----+-----+-----+-----+
6 | 60ccf870-efb5-4401-a1cd-23294a9bea8b | cirrOS | ACTIVE | vm-
  network=192.168.73.189 | cirros-0.3.3 | m1.nano |
7 +-----+-----+-----+-----+
```

```
[root@controller ~]# brctl show
bridge name      bridge id                STP enabled  interfaces
brq521f714a-66    8000.000c29cab557        no           ens34
                  tap1dd8d327-a3
```



Defaultadmin

项目

访问API

计算

概况

实例

镜像

密钥对

主机组

网络

管理员

身份管理

```
login as 'cirros' user, default password: 'cubswin:)', use 'sudo' for root.
cirros login: cirros
Password:
$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 16436 qdisc noqueue
   link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
   inet 127.0.0.1/8 scope host lo
      inet6 ::1/128 scope host
         valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast qlen 1000
   link/ether fa:16:3e:e8:f1:86 brd ff:ff:ff:ff:ff:ff
   inet 192.168.73.189/24 brd 192.168.73.255 scope global eth0
      inet6 fe80::f816:3eff:fee8:f186/64 scope link
         valid_lft forever preferred_lft forever
$ ping www.baidu.com
PING www.baidu.com (183.232.231.172): 56 data bytes
64 bytes from 183.232.231.172: seq=0 ttl=128 time=39.593 ms
64 bytes from 183.232.231.172: seq=1 ttl=128 time=37.798 ms

--- www.baidu.com ping statistics ---
2 packets transmitted, 2 packets received, 0% packet loss
round-trip min/avg/max = 37.798/38.695/39.593 ms
$
```

```
login as 'cirros' user. default password: 'cubswin:)'. use 'sudo' for root.
cirros login: cirros
Password:
$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 16436 qdisc noqueue
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast qlen 1000
    link/ether fa:16:3e:e8:f1:86 brd ff:ff:ff:ff:ff:ff
    inet 192.168.73.189/24 brd 192.168.73.255 scope global eth0
    inet6 fe80::f816:3eff:fee8:f186/64 scope link
        valid_lft forever preferred_lft forever
$ ping www.baidu.com
PING www.baidu.com (183.232.231.174): 56 data bytes
64 bytes from 183.232.231.174: seq=0 ttl=128 time=35.869 ms
64 bytes from 183.232.231.174: seq=1 ttl=128 time=32.545 ms
64 bytes from 183.232.231.174: seq=2 ttl=128 time=37.218 ms
--- www.baidu.com ping statistics ---
3 packets transmitted, 3 packets received, 0% packet loss
round-trip min/avg/max = 32.545/35.210/37.218 ms
$ !
```

openstack-T版搭建完成，至于后面的服务就得给位自己动脑经了