## NTP

单节点其实可以忽略，不过同步时间对群集是非常重要的事情，所以我也记录一遍，国内建议使用ntp服务器

yum install chrony

编辑 /etc/chrony.conf

server cn.pool.ntp.org iburst

访问权限

allow 192.168.10.0/24

重启相关服务

systemctl enable chronyd.service

systemctl **start** chronyd.service

剩下节点，只需要设置ntp server的IP改成控制节点的ip就可以。

验证

chronyc sources

## 主机名

为了方便，机器采用主机名进行访问，而不是ip

cat >> /etc/hosts << OFF

192.168.10.102 controller

192.168.10.104 compute1

OFF

## 所有节点关闭防火墙

systemctl stop firewalld.service

systemctl disable firewalld.service

## 数据库

yum install mariadb mariadb-server MySQL-python

配置

sed -i "/\[mysqld\]$/a character-set-server = utf8" /etc/**my**.cnf

sed -i "/\[mysqld\]$/a init-connect = 'SET NAMES utf8'" /etc/**my**.cnf

sed -i "/\[mysqld\]$/a collation-server = utf8\_general\_ci" /etc/**my**.cnf

sed -i "/\[mysqld\]$/a innodb\_file\_per\_table" /etc/**my**.cnf

sed -i "/\[mysqld\]$/a default-storage-engine = innodb" /etc/**my**.cnf

sed -i "/\[mysqld\]$/a bind-address = 192.168.10.102" /etc/**my**.cnf

重启服务

systemctl enable mariadb.service

systemctl **start** mariadb.service

## 消息队列

yum install -y rabbitmq-server

systemctl enable rabbitmq-server.service

systemctl re**start** rabbitmq-server.service

创建用户：openstack，设置密码pass

rabbitmqctl add\_user openstack **pass**

设置权限

rabbitmqctl set\_permissions openstack ".\*" ".\*" ".\*"

## 设置源

对于CentOS7，我们需要

1. Base
2. extra
3. update
4. EPEL
5. OpenStack liberty源

前面3个是CentOS默认启用的源。EPEL源和OpenStack的Liberty源，是需要自己设置，也可以通过安装包来实现自动添加

EPEL

yum install [***http://dl.fedoraproject.org/pub/epel/7/x86\_64/e/epel-release-7-5.noarch.rpm***](http://dl.fedoraproject.org/pub/epel/7/x86_64/e/epel-release-7-5.noarch.rpm)

OpenStack liberty

yum install centos-release-openstack-liberty

更新

yum upgrade

## OpenStack配置工具

yum install -y python-openstackclient openstack-utils

## 关闭selinux

yum install openstack-selinux -y

vi /etc/selinux/config  
SELINUX=disabled

setenforce 0

## Keystone

## 创建数据库，

数据库都是通过 mysql -u root -p

**CREATE** DATABASE keystone;

**GRANT** **ALL** **PRIVILEGES** **ON** keystone.\* **TO** 'keystone'@'localhost' IDENTIFIED **BY** 'pass';

**GRANT** **ALL** **PRIVILEGES** **ON** keystone.\* **TO** 'keystone'@'%' IDENTIFIED **BY** 'pass';

exit;

## 组件安装

yum install openstack-keystone httpd mod\_wsgi \

memcached python-memcached

## 配置

编辑 /etc/keystone/keystone.conf

[DEFAULT] ... admin\_token = ADMIN [database] ... connection = mysql://keystone:pass@controller/keystone

[memcache] ... servers = localhost:11211 [token] ... provider = uuid driver = memcache [revoke] ... driver = sql

手工修改很麻烦，红帽提供工具修改

openstack-config --**set** /etc/keystone/keystone.conf DEFAULT admin\_token ADMIN

openstack-config --**set** /etc/keystone/keystone.conf database connection mysql:*//keystone:pass@controller/keystone*

openstack-config --**set** /etc/keystone/keystone.conf memcache servers localhost:11211

openstack-config --**set** /etc/keystone/keystone.conf token provider uuid

openstack-config --**set** /etc/keystone/keystone.conf token driver memcache

openstack-config --**set** /etc/keystone/keystone.conf revoke driver sql

配置Apache

sed -i "s/#ServerName www.example.com:80/ServerName controller/" /etc/httpd/conf/httpd.conf

创建apache启动的配置文件

cat > /etc/httpd/conf.d/wsgi-keystone.conf << OFF

Listen 5000

Listen 35357

<VirtualHost \*:5000>

WSGIDaemonProcess keystone-public processes=5 threads=1 user=keystone group=keystone display-name=%{GROUP}

WSGIProcessGroup keystone-public

WSGIScriptAlias / /usr/bin/keystone-wsgi-public

WSGIApplicationGroup %{GLOBAL}

WSGIPassAuthorization On

<IfVersion >= 2.4>

ErrorLogFormat "%{cu}t %M"

</IfVersion>

ErrorLog /var/log/httpd/keystone-error.log

CustomLog /var/log/httpd/keystone-access.log combined

<Directory /usr/bin>

<IfVersion >= 2.4>

Require all granted

</IfVersion>

<IfVersion < 2.4>

Order allow,deny

Allow from all

</IfVersion>

</Directory>

</VirtualHost>

<VirtualHost \*:35357>

WSGIDaemonProcess keystone-admin processes=5 threads=1 user=keystone group=keystone display-name=%{GROUP}

WSGIProcessGroup keystone-admin

WSGIScriptAlias / /usr/bin/keystone-wsgi-admin

WSGIApplicationGroup %{GLOBAL}

WSGIPassAuthorization On

<IfVersion >= 2.4>

ErrorLogFormat "%{cu}t %M"

</IfVersion>

ErrorLog /var/log/httpd/keystone-error.log

CustomLog /var/log/httpd/keystone-access.log combined

<Directory /usr/bin>

<IfVersion >= 2.4>

Require all granted

</IfVersion>

<IfVersion < 2.4>

Order allow,deny

Allow from all

</IfVersion>

</Directory>

</VirtualHost>

OFF

## 启动服务

systemctl enable memcached.service

systemctl **start** memcached.service

systemctl enable httpd.service

systemctl **start** httpd.service

## 初始化数据库

su -s /bin/sh -c "keystone-manage db\_sync" keystone

你会看到提示 No handlers could be found for logger “oslo\_config.cfg”

忽略就可以。不能直接使用keystone-manage db\_sync，会导致日志权限出错。

## 服务和Endpoint

文档把public，internal和admin3种网络都使用一个网段

设置临时环境变量

**export** OS\_TOKEN=ADMIN

**export** OS\_URL=http:*//controller:35357/v3*

**export** OS\_IDENTITY\_API\_VERSION=3

下面的命令就一行一行执行

openstack service **create** --name keystone --description "OpenStack Identity" **identity**

openstack endpoint **create** --region RegionOne **identity** **public** http://controller:5000/v2.0

openstack endpoint **create** --region RegionOne **identity** internal http://controller:5000/v2.0

openstack endpoint **create** --region RegionOne **identity** admin http://controller:35357/v2.0

openstack project **create** --**domain** **default** --description "Admin Project" admin

openstack **user** **create** admin --**domain** **default** --password pass

openstack role **create** admin

openstack role **add** --project admin --**user** admin admin

openstack project **create** --**domain** **default** --description "Service Project" service

openstack project **create** --**domain** **default** --description "Demo Project" demo

openstack **user** **create** demo --**domain** **default** --password pass

openstack role **create** **user**

openstack role **add** --project demo --**user** demo **user**

检测设置

删除临时环境变量

un**set** OS\_TOKEN OS\_URL

设置环境

cat > /root/admin-openrc.sh << OFF

export OS\_PROJECT\_DOMAIN\_ID=default

export OS\_USER\_DOMAIN\_ID=default

export OS\_PROJECT\_NAME=admin

export OS\_TENANT\_NAME=admin

export OS\_USERNAME=admin

export OS\_PASSWORD=pass

export OS\_AUTH\_URL=http://controller:35357/v3

export OS\_IDENTITY\_API\_VERSION=3

OFF

cat > /root/demo-openrc.sh << OFF

export OS\_PROJECT\_DOMAIN\_ID=default

export OS\_USER\_DOMAIN\_ID=default

export OS\_PROJECT\_NAME=demo

export OS\_TENANT\_NAME=demo

export OS\_USERNAME=demo

export OS\_PASSWORD=pass

export OS\_AUTH\_URL=http://controller:5000/v3

export OS\_IDENTITY\_API\_VERSION=3

OFF

## Glance

OpenStack各个组件的安装，其实步骤都差不多，多装几次，就知道规律

## 创建数据库

**CREATE** DATABASE glance;

**GRANT** **ALL** **PRIVILEGES** **ON** glance.\* **TO** 'glance'@'localhost' IDENTIFIED **BY** 'pass';

**GRANT** **ALL** **PRIVILEGES** **ON** glance.\* **TO** 'glance'@'%' IDENTIFIED **BY** 'pass';

exit;

## 服务和Endpoint

设置环境变量

source admin-openrc.sh

在keystone里，创建glance镜像服务，并且创建相关Endpoint

openstack user **create** glance --**domain** **default** --password pass

openstack role **add** --project service --**user** glance admin

openstack service **create** --name glance --description "OpenStack Image service" image

openstack endpoint **create** --region RegionOne image **public** http://controller:9292

openstack endpoint **create** --region RegionOne image internal http://controller:9292

openstack endpoint **create** --region RegionOne image admin http://controller:9292

## 组件安装

yum install openstack-glance python-glance python-glanceclient

## 配置

修改 /etc/glance/glance-api.conf

openstack-config --**set** /etc/glance/glance-api.conf database connection mysql:*//glance:pass@controller/glance*

openstack-config --**set** /etc/glance/glance-api.conf keystone\_authtoken auth\_uri http:*//controller:5000*

openstack-config --**set** /etc/glance/glance-api.conf keystone\_authtoken auth\_url http:*//controller:35357*

openstack-config --**set** /etc/glance/glance-api.conf keystone\_authtoken auth\_plugin password

openstack-config --**set** /etc/glance/glance-api.conf keystone\_authtoken project\_domain\_id **default**

openstack-config --**set** /etc/glance/glance-api.conf keystone\_authtoken user\_domain\_id **default**

openstack-config --**set** /etc/glance/glance-api.conf keystone\_authtoken project\_name service

openstack-config --**set** /etc/glance/glance-api.conf keystone\_authtoken username glance

openstack-config --**set** /etc/glance/glance-api.conf keystone\_authtoken password pass

openstack-config --**set** /etc/glance/glance-api.conf paste\_deploy flavor keystone

openstack-config --**set** /etc/glance/glance-api.conf glance\_store default\_store file

openstack-config --**set** /etc/glance/glance-api.conf glance\_store filesystem\_store\_datadir /**var**/lib/glance/images/

openstack-config --**set** /etc/glance/glance-api.conf DEFAULT notification\_driver noop

openstack-config --**set** /etc/glance/glance-api.conf DEFAULT verbose True

修改 /etc/glance/glance-registry.conf

openstack-config --**set** /etc/glance/glance-registry.conf database connection mysql:*//glance:pass@controller/glance*

openstack-config --**set** /etc/glance/glance-registry.conf keystone\_authtoken auth\_uri http:*//controller:5000*

openstack-config --**set** /etc/glance/glance-registry.conf keystone\_authtoken auth\_url http:*//controller:35357*

openstack-config --**set** /etc/glance/glance-registry.conf keystone\_authtoken auth\_plugin password

openstack-config --**set** /etc/glance/glance-registry.conf keystone\_authtoken project\_domain\_id **default**

openstack-config --**set** /etc/glance/glance-registry.conf keystone\_authtoken user\_domain\_id **default**

openstack-config --**set** /etc/glance/glance-registry.conf keystone\_authtoken project\_name service

openstack-config --**set** /etc/glance/glance-registry.conf keystone\_authtoken username glance

openstack-config --**set** /etc/glance/glance-registry.conf keystone\_authtoken password pass

openstack-config --**set** /etc/glance/glance-registry.conf paste\_deploy flavor keystone

openstack-config --**set** /etc/glance/glance-registry.conf DEFAULT notification\_driver noop

openstack-config --**set** /etc/glance/glance-registry.conf DEFAULT verbose True

## 初始化数据库

su -s /bin/sh -c "glance-manage db\_sync" glance

你可以遇到No handlers could be found for logger “oslo\_config.cfg”

提示，忽略就可以。你可以登录mysql，会发现glance的表都已经创建好了。

## 启动服务

systemctl enable openstack-glance-api.service openstack-glance-registry.service

systemctl **start** openstack-glance-api.service openstack-glance-registry.service

## 验证

在环境变量增加glance的API版本

**echo** "export OS\_IMAGE\_API\_VERSION=2" \

| tee –a /root/admin-openrc.sh /root/demo-openrc.sh

重新运行

source admin-openrc.sh

下载镜像

wget [***http://download.cirros-cloud.net/0.3.4/cirros-0.3.4-x86\_64-disk.img***](http://download.cirros-cloud.net/0.3.4/cirros-0.3.4-x86_64-disk.img)

上传镜像

glance image-**create** --name "cirros" --file /root/cirros-0.3.4-x86\_64-disk.img \

--disk-format qcow2 --container-format bare --visibility **public** --progress

查看镜像

openstack image **list**

## Nova

对于Nova来说，其实有控制节点的nova服务，和计算节点的分别，这里配置的是控制节点的nova服务

## 创建数据库

**CREATE** DATABASE nova;

**GRANT** **ALL** **PRIVILEGES** **ON** nova.\* **TO** 'nova'@'localhost' IDENTIFIED **BY** 'pass';

**GRANT** **ALL** **PRIVILEGES** **ON** nova.\* **TO** 'nova'@'%' IDENTIFIED **BY** 'pass';

exit;

## 服务和Endpoint

设置环境变量

source admin-openrc.sh

在keystone里，创建nova服务，并且创建相关Endpoint

openstack user **create** nova --**domain** **default** --password pass

openstack role **add** --project service --**user** nova admin

openstack service **create** --name nova --description "OpenStack Compute" compute

openstack endpoint **create** --region RegionOne compute **public** http://controller:8774/v2/%\(tenant\_id\)s

openstack endpoint **create** --region RegionOne compute internal http://controller:8774/v2/%\(tenant\_id\)s

openstack endpoint **create** --region RegionOne compute admin [***http://controller:8774/v2/%\(tenant\_id\)s***](http://controller:8774/v2/%25/(tenant_id/)s)

## 组件安装

yum install openstack-nova-api openstack-nova-cert \

openstack-nova-conductor openstack-nova-console \

openstack-nova-novncproxy openstack-nova-scheduler \

python-novaclient

## 配置

需要配置的内容很多，理解的地方也不少。

openstack-config --**set** /etc/nova/nova.conf database connection mysql:*//nova:pass@controller/nova*

openstack-config --**set** /etc/nova/nova.conf DEFAULT rpc\_backend rabbit

openstack-config --**set** /etc/nova/nova.conf oslo\_messaging\_rabbit rabbit\_host controller

openstack-config --**set** /etc/nova/nova.conf oslo\_messaging\_rabbit rabbit\_userid openstack

openstack-config --**set** /etc/nova/nova.conf oslo\_messaging\_rabbit rabbit\_password pass

openstack-config --**set** /etc/nova/nova.conf DEFAULT auth\_strategy keystone

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken auth\_uri http:*//controller:5000*

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken auth\_url http:*//controller:35357*

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken auth\_plugin password

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken project\_domain\_id **default**

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken user\_domain\_id **default**

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken project\_name service

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken username nova

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken password pass

openstack-config --**set** /etc/nova/nova.conf DEFAULT my\_ip 192.168.10.102

openstack-config --**set** /etc/nova/nova.conf DEFAULT network\_api\_class nova.network.neutronv2.api.API

openstack-config --**set** /etc/nova/nova.conf DEFAULT security\_group\_api neutron

openstack-config --**set** /etc/nova/nova.conf DEFAULT linuxnet\_interface\_driver nova.network.linux\_net.NeutronLinuxBridgeInterfaceDriver

openstack-config --**set** /etc/nova/nova.conf DEFAULT firewall\_driver nova.virt.firewall.NoopFirewallDriver

openstack-config --**set** /etc/nova/nova.conf vnc vncserver\_listen 192.168.10.102

openstack-config --**set** /etc/nova/nova.conf vnc vncserver\_proxyclient\_address 192.168.10.102

openstack-config --**set** /etc/nova/nova.conf glance host controller

openstack-config --**set** /etc/nova/nova.conf oslo\_concurrency lock\_path /**var**/lib/nova/tmp

openstack-config --**set** /etc/nova/nova.conf DEFAULT enabled\_apis osapi\_compute,metadata

openstack-config --**set** /etc/nova/nova.conf DEFAULT verbose True

## 初始化数据库

su -s /bin/sh -c "nova-manage db sync" nova

## 启动服务

systemctl enable openstack-nova-api.service \

openstack-nova-cert.service openstack-nova-consoleauth.service \

openstack-nova-scheduler.service openstack-nova-conductor.service \

openstack-nova-novncproxy.service

systemctl **start** openstack-nova-api.service \

openstack-nova-cert.service openstack-nova-consoleauth.service \

openstack-nova-scheduler.service openstack-nova-conductor.service \

openstack-nova-novncproxy.service

## Neutron

## 创建数据库

**CREATE** DATABASE neutron;

**GRANT** **ALL** **PRIVILEGES** **ON** neutron.\* **TO** 'neutron'@'localhost' IDENTIFIED **BY** 'pass';

**GRANT** **ALL** **PRIVILEGES** **ON** neutron.\* **TO** 'neutron'@'%' IDENTIFIED **BY** 'pass';

exit;

## 服务和endpoint

openstack user **create** neutron --**domain** **default** --password pass

openstack role **add** --project service --**user** neutron admin

openstack service **create** --name neutron --description "OpenStack Networking" network

openstack endpoint **create** --region RegionOne network **public** http://controller:9696

openstack endpoint **create** --region RegionOne network internal http://controller:9696

openstack endpoint **create** --region RegionOne network admin [***http://controller:9696***](http://controller:9696/)

## 安装组件

yum -y install openstack-neutron openstack-neutron-ml2 openstack-neutron-linuxbridge \

python-neutronclient ebtables ip**set**

## 配置

### Neutron配置文件

openstack-config --**set** /etc/neutron/neutron.conf database connection mysql:*//neutron:pass@controller/neutron*

openstack-config --**set** /etc/neutron/neutron.conf DEFAULT core\_plugin ml2

openstack-config --**set** /etc/neutron/neutron.conf DEFAULT service\_plugins router

openstack-config --**set** /etc/neutron/neutron.conf DEFAULT allow\_overlapping\_ips True

openstack-config --**set** /etc/neutron/neutron.conf DEFAULT rpc\_backend rabbit

openstack-config --**set** /etc/neutron/neutron.conf oslo\_messaging\_rabbit rabbit\_host controller

openstack-config --**set** /etc/neutron/neutron.conf oslo\_messaging\_rabbit rabbit\_userid openstack

openstack-config --**set** /etc/neutron/neutron.conf oslo\_messaging\_rabbit rabbit\_password pass

openstack-config --**set** /etc/neutron/neutron.conf DEFAULT auth\_strategy keystone

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken auth\_uri http:*//controller:5000*

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken auth\_url http:*//controller:35357*

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken auth\_plugin password

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken project\_domain\_id **default**

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken user\_domain\_id **default**

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken project\_name service

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken username neutron

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken password pass

openstack-config --**set** /etc/neutron/neutron.conf DEFAULT notify\_nova\_on\_port\_status\_changes True

openstack-config --**set** /etc/neutron/neutron.conf DEFAULT notify\_nova\_on\_port\_data\_changes True

openstack-config --**set** /etc/neutron/neutron.conf DEFAULT nova\_url http:*//controller:8774/v2*

openstack-config --**set** /etc/neutron/neutron.conf nova auth\_url http:*//controller:35357*

openstack-config --**set** /etc/neutron/neutron.conf nova auth\_plugin password

openstack-config --**set** /etc/neutron/neutron.conf nova project\_domain\_id **default**

openstack-config --**set** /etc/neutron/neutron.conf nova user\_domain\_id **default**

openstack-config --**set** /etc/neutron/neutron.conf nova region\_name RegionOne

openstack-config --**set** /etc/neutron/neutron.conf nova project\_name service

openstack-config --**set** /etc/neutron/neutron.conf nova username nova

openstack-config --**set** /etc/neutron/neutron.conf nova password pass

openstack-config --**set** /etc/neutron/neutron.conf oslo\_concurrency lock\_path /**var**/lib/neutron/tmp

openstack-config --**set** /etc/neutron/neutron.conf DEFAULT verbose True

### Modular Layer 2 (ML2) plug-in

openstack-config --**set** /etc/neutron/plugins/ml2/ml2\_conf.ini ml2 type\_drivers flat,vxlan

openstack-config --**set** /etc/neutron/plugins/ml2/ml2\_conf.ini ml2 tenant\_network\_types vxlan

openstack-config --**set** /etc/neutron/plugins/ml2/ml2\_conf.ini ml2 mechanism\_drivers linuxbridge,l2population

openstack-config --**set** /etc/neutron/plugins/ml2/ml2\_conf.ini ml2 extension\_drivers port\_security

openstack-config --**set** /etc/neutron/plugins/ml2/ml2\_conf.ini ml2\_type\_flat flat\_networks **public**

openstack-config --**set** /etc/neutron/plugins/ml2/ml2\_conf.ini ml2\_type\_vxlan vni\_ranges = 1:1000

openstack-config --**set** /etc/neutron/plugins/ml2/ml2\_conf.ini securitygroup enable\_ipset True

### Linux bridge agent

这个地方需要注意，我使用的是dell服务器，第二块网卡的名字是：enp8s0，你需要根据你的实际情况进行调整

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini linux\_bridge physical\_interface\_mappings **public**:enp8s0

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini vxlan enable\_vxlan True

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini vxlan local\_ip 192.168.10.102

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini vxlan l2\_population True

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini agent prevent\_arp\_spoofing True

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini securitygroup enable\_security\_group True

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini securitygroup firewall\_driver neutron.agent.linux.iptables\_firewall.IptablesFirewallDriver

### DHCP agent

openstack-config --set /etc/neutron/dhcp\_agent.ini **DEFAULT** interface\_driver neutron.agent.linux.**interface**.BridgeInterfaceDriver

openstack-config --set /etc/neutron/dhcp\_agent.ini **DEFAULT** dhcp\_driver neutron.agent.linux.dhcp.Dnsmasq

openstack-config --set /etc/neutron/dhcp\_agent.ini **DEFAULT** enable\_isolated\_metadata **True**

openstack-config --set /etc/neutron/dhcp\_agent.ini **DEFAULT** verbose **True**

### metadata agent

openstack-config --set /etc/neutron/metadata\_agent.ini **DEFAULT** auth\_uri http:*//controller:5000*

openstack-config --set /etc/neutron/metadata\_agent.ini **DEFAULT** auth\_url http:*//controller:35357*

openstack-config --set /etc/neutron/metadata\_agent.ini **DEFAULT** auth\_region RegionOne

openstack-config --set /etc/neutron/metadata\_agent.ini **DEFAULT** auth\_plugin password

openstack-config --set /etc/neutron/metadata\_agent.ini **DEFAULT** project\_domain\_id **default**

openstack-config --set /etc/neutron/metadata\_agent.ini **DEFAULT** user\_domain\_id **default**

openstack-config --set /etc/neutron/metadata\_agent.ini **DEFAULT** project\_name service

openstack-config --set /etc/neutron/metadata\_agent.ini **DEFAULT** username neutron

openstack-config --set /etc/neutron/metadata\_agent.ini **DEFAULT** password pass

openstack-config --set /etc/neutron/metadata\_agent.ini **DEFAULT** nova\_metadata\_ip controller

openstack-config --set /etc/neutron/metadata\_agent.ini **DEFAULT** metadata\_proxy\_shared\_secret neutron

openstack-config --set /etc/neutron/metadata\_agent.ini **DEFAULT** verbose **True**

### 配置 layer-3 agent

openstack-config --set /etc/neutron/l3\_agent.ini **DEFAULT** interface\_driver neutron.agent.linux.**interface**.BridgeInterfaceDriver

openstack-config --set /etc/neutron/l3\_agent.ini **DEFAULT** external\_network\_bridge

openstack-config --set /etc/neutron/l3\_agent.ini **DEFAULT** verbose **True**

### Nova使用 Neutron

openstack-config --**set** /etc/nova/nova.conf neutron url http:*//controller:9696*

openstack-config --**set** /etc/nova/nova.conf neutron auth\_url http:*//controller:35357*

openstack-config --**set** /etc/nova/nova.conf neutron auth\_plugin password

openstack-config --**set** /etc/nova/nova.conf neutron project\_domain\_id **default**

openstack-config --**set** /etc/nova/nova.conf neutron user\_domain\_id **default**

openstack-config --**set** /etc/nova/nova.conf neutron region\_name RegionOne

openstack-config --**set** /etc/nova/nova.conf neutron project\_name service

openstack-config --**set** /etc/nova/nova.conf neutron username neutron

openstack-config --**set** /etc/nova/nova.conf neutron password pass

openstack-config --**set** /etc/nova/nova.conf neutron service\_metadata\_proxy True

openstack-config --**set** /etc/nova/nova.conf neutron metadata\_proxy\_shared\_secret neutron

## 初始化数据库

对于neutron，需要建立插件的软连接

ln -s /etc/neutron/plugins/ml2/ml2\_conf.ini /etc/neutron/plugin.ini

同步数据库

su -s /bin/sh -c "neutron-db-manage *--config-file /etc/neutron/neutron.conf \*

*--config-file /etc/neutron/plugins/ml2/ml2\_conf.ini upgrade head" neutron*

## 启动服务

systemctl enable neutron-server.service \

neutron-linuxbridge-agent.service neutron-dhcp-agent.service \

neutron-metadata-agent.service

systemctl **start** neutron-server.service \

neutron-linuxbridge-agent.service neutron-dhcp-agent.service \

neutron-metadata-agent.service

systemctl enable neutron-l3-agent.service

systemctl **start** neutron-l3-agent.service

nova服务

systemctl re**start** openstack-nova-api.service

## Horizon

这个是web端，就相对比较简单

yum install -y openstack-dashboard

配置

编辑 /etc/openstack-dashboard/local\_settings

OPENSTACK\_HOST = "controller"

ALLOWED\_HOSTS = ['\*', ]

CACHES = {

'default': {

'BACKEND': 'django.core.cache.backends.memcached.MemcachedCache',

'LOCATION': '127.0.0.1:11211',

}

}

TIME\_ZONE = "Asia/Shanghai"

OPENSTACK\_NEUTRON\_NETWORK = {

'enable\_router': **False**,

'enable\_quotas': **False**,

'enable\_ipv6': **False**,

'enable\_distributed\_router': **False**,

'enable\_ha\_router': **False**,

'enable\_lb': **False**,

'enable\_firewall': **False**,

'enable\_vpn': **False**,

'enable\_fip\_topology\_check': **True**,

重启服务

systemctl re**start** httpd.service memcached.service

## 计算节点

计算节点，也是需要设置同步时间，添加hosts文件

cat >> /etc/hosts << OFF

192.168.10.102 controller

192.168.10.104 compute1

OFF

## compute服务

yum install -y openstack-nova-compute sysfsutils openstack-utils

### 配置

openstack-config --**set** /etc/nova/nova.conf DEFAULT rpc\_backend rabbit

openstack-config --**set** /etc/nova/nova.conf oslo\_messaging\_rabbit rabbit\_host controller

openstack-config --**set** /etc/nova/nova.conf oslo\_messaging\_rabbit rabbit\_userid openstack

openstack-config --**set** /etc/nova/nova.conf oslo\_messaging\_rabbit rabbit\_password pass

openstack-config --**set** /etc/nova/nova.conf DEFAULT auth\_strategy keystone

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken auth\_uri http:*//controller:5000*

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken auth\_url http:*//controller:35357*

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken auth\_plugin password

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken project\_domain\_id **default**

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken user\_domain\_id **default**

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken project\_name service

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken username nova

openstack-config --**set** /etc/nova/nova.conf keystone\_authtoken password pass

openstack-config --**set** /etc/nova/nova.conf DEFAULT my\_ip 192.168.10.104

openstack-config --**set** /etc/nova/nova.conf DEFAULT network\_api\_class nova.network.neutronv2.api.API

openstack-config --**set** /etc/nova/nova.conf DEFAULT security\_group\_api neutron

openstack-config --**set** /etc/nova/nova.conf DEFAULT linuxnet\_interface\_driver nova.network.linux\_net.NeutronLinuxBridgeInterfaceDriver

openstack-config --**set** /etc/nova/nova.conf DEFAULT firewall\_driver nova.virt.firewall.NoopFirewallDriver

openstack-config --**set** /etc/nova/nova.conf vnc enabled True

openstack-config --**set** /etc/nova/nova.conf vnc vncserver\_listen 0.0.0.0

openstack-config --**set** /etc/nova/nova.conf DEFAULT my\_ip 192.168.10.104

openstack-config --**set** /etc/nova/nova.conf vnc vncserver\_proxyclient\_address "$"my\_ip

openstack-config --**set** /etc/nova/nova.conf vnc novncproxy\_base\_url [***http://192.168.10.102:6080/vnc\_auto.html***](http://192.168.10.102:6080/vnc_auto.html)

openstack-config --**set** /etc/nova/nova.conf glance host controller

openstack-config --**set** /etc/nova/nova.conf oslo\_concurrency lock\_path /**var**/lib/nova/tmp

openstack-config --**set** /etc/nova/nova.conf DEFAULT verbose True

openstack-config --**set** /etc/nova/nova.conf libvirt virt\_type kvm

## 网络服务

yum install openstack-neutron openstack-neutron-linuxbridge ebtables ip**set**

### 配置

openstack-config --**set** /etc/neutron/neutron.conf DEFAULT rpc\_backend rabbit

openstack-config --**set** /etc/neutron/neutron.conf oslo\_messaging\_rabbit rabbit\_host controller

openstack-config --**set** /etc/neutron/neutron.conf oslo\_messaging\_rabbit rabbit\_userid openstack

openstack-config --**set** /etc/neutron/neutron.conf oslo\_messaging\_rabbit rabbit\_password pass

openstack-config --**set** /etc/neutron/neutron.conf DEFAULT auth\_strategy keystone

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken auth\_uri http:*//controller:5000*

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken auth\_url http:*//controller:35357*

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken auth\_plugin password

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken project\_domain\_id **default**

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken user\_domain\_id **default**

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken project\_name service

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken username neutron

openstack-config --**set** /etc/neutron/neutron.conf keystone\_authtoken password pass

openstack-config --**set** /etc/neutron/neutron.conf oslo\_concurrency lock\_path /**var**/lib/neutron/tmp

openstack-config --**set** /etc/neutron/neutron.conf DEFAULT verbose True

### 配置 the Linux bridge agent

这个地方也是需要注意网卡名字，这台dell服务器，第二块网卡的名字是：eno2

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini linux\_bridge physical\_interface\_mappings **public**:eno2

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini vxlan enable\_vxlan True

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini vxlan local\_ip 192.168.10.104

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini vxlan l2\_population True

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini agent prevent\_arp\_spoofing True

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini securitygroup enable\_security\_group True

openstack-config --**set** /etc/neutron/plugins/ml2/linuxbridge\_agent.ini securitygroup firewall\_driver neutron.agent.linux.iptables\_firewall.IptablesFirewallDriver

### 配置nova使用Neutron

openstack-config --**set** /etc/nova/nova.conf neutron url http:*//controller:9696*

openstack-config --**set** /etc/nova/nova.conf neutron auth\_url http:*//controller:35357*

openstack-config --**set** /etc/nova/nova.conf neutron auth\_plugin password

openstack-config --**set** /etc/nova/nova.conf neutron project\_domain\_id **default**

openstack-config --**set** /etc/nova/nova.conf neutron user\_domain\_id **default**

openstack-config --**set** /etc/nova/nova.conf neutron region\_name RegionOne

openstack-config --**set** /etc/nova/nova.conf neutron project\_name service

openstack-config --**set** /etc/nova/nova.conf neutron username neutron

openstack-config --**set** /etc/nova/nova.conf neutron password pass

## 服务

ML2插件软连接

ln -s /etc/neutron/plugins/ml2/ml2\_conf.ini /etc/neutron/plugin.ini

启动服务

systemctl enable libvirtd.service neutron-linuxbridge-agent.service openstack-nova-compute.service

systemctl **start** libvirtd.service neutron-linuxbridge-agent.service openstack-nova-compute.service

# 5 对接DCFabric

### 1 Openstack控制节点配置

1. 工具脚本获取

在“tools/openstack-tools”目录下有shell脚本“gnflush-controller.sh”和ml2驱动脚本“mechanism\_gnflush\_liberty.py”用于设置计算节点和网络节点与数据中心SDN控制器对接的配置。

将这个脚本拷贝到Openstack控制节点服务器上如下目录下：

|  |
| --- |
| /usr/lib/python2.7/site-packages/neutron/plugins/ml2/drivers/ |

1. 关闭相关服务

在Openstack控制中心服务器上执行如下命令停止相关服务：

|  |
| --- |
| systemctl stop neutron-server |

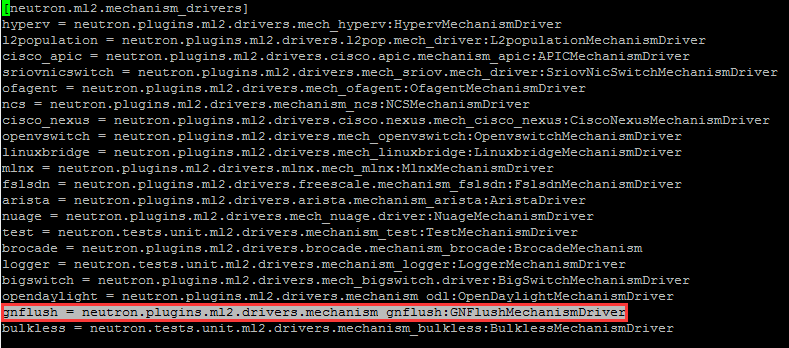
1. 配置ml2 plugin

在数据中心文件“entry\_points.txt”中“[neutron.ml2.mechanism\_drivers]”配置节点下增加GNFlush控制器ML2 plugin的entry point：

|  |
| --- |
| vi /usr/lib/python2.7/site-packages/neutron-7.0.3-py2.7.egg-info/entry\_points.txt |

参考下图添加如下内容：

|  |
| --- |
| gnflush = neutron.plugins.ml2.drivers.mechanism\_gnflush:GNFlushMechanismDriver |



1. 配置ml2

配置ml2前，需要准备如下信息：

* 租户网络类型：管理员可以根据需要选择“gre”或者“vlan”。
* 控制器IP地址：数据中心SDN控制器所在服务器的IP地址。
* 控制器Rest服务端口：Rest服务监听端口需要查看SDN控制器配置文件中“[rest\_port]”配置，默认为“8081”

在Openstack控制中心服务器上执行如下命令修改ml2配置，以租户网络类型为“gre”为例：

|  |
| --- |
| crudini --set /etc/neutron/plugins/ml2/ml2\_conf.ini ml2 mechanism\_drivers gnflush |

在“/etc/neutron/plugins/ml2/ml2\_conf.ini”文件最后面添加“ml2\_gnflush”的选项:

|  |
| --- |
| [ml2\_gnflush]  password = admin  username = admin  url = http://<控制器IP>:<控制Rest服务端口>/gn/neutron |

1. 创建ml2数据库

在Openstack控制中心服务器上执行如下命令：

|  |
| --- |
| mysql -u root -p  drop database if exists neutron\_ml2;  create database neutron\_ml2 character set utf8;  grant all on neutron\_ml2.\* to 'neutron'@'%';  grant all on neutron\_ml2.\* to 'neutron'@'controller' IDENTIFIED BY 'neutron';  grant all on neutron\_ml2.\* to 'neutron'@'localhost' IDENTIFIED BY 'neutron';  neutron-db-manage --config-file /usr/share/neutron/neutron-dist.conf --config-file /etc/neutron/neutron.conf --config-file /etc/neutron/plugin.ini upgrade head |

1. 启动相关服务

在Openstack控制中心服务器上执行如下命令：

|  |
| --- |
| systemctl start neutron-server  systemctl disable neutron-linuxbridge-agent  systemctl stop neutron-linuxbridge-agent |

### 2 Openstack计算节点和网络节点配置

1. 工具脚本获取

在“tools/openstack-tools”目录下有shell脚本“gnflush-controller.sh”和ml2驱动脚本“mechanism\_gnflush\_liberty.py”用于设置计算节点和网络节点与数据中心SDN控制器对接的配置。

将“mechanism\_gnflush.py”这个脚本拷贝到Openstack控制节点服务器上如下目录下：

|  |
| --- |
| /usr/lib/python2.7/site-packages/neutron/plugins/ml2/drivers/ |

将“gnflush-controller.sh”拷贝到服务器上任意目录后续使用。

1. 关闭相关服务

在所有Openstack计算节点和网络节点上服务器上执行如下命令：

|  |
| --- |
| systemctl disable neutron-linuxbridge-agent  systemctl stop neutron-linuxbridge-agent |

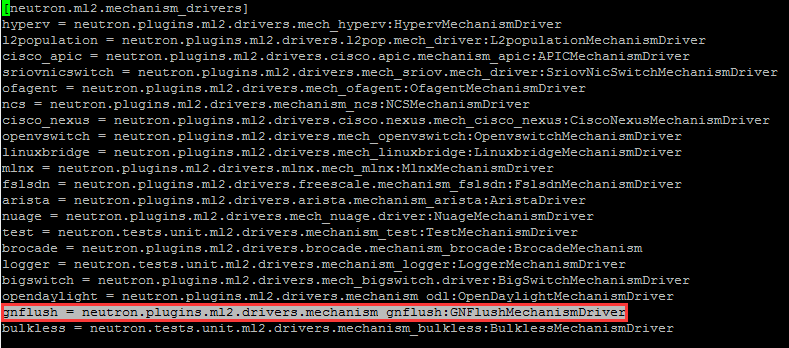
1. 配置ml2 plugin

在数据中心文件“entry\_points.txt”中“[neutron.ml2.mechanism\_drivers]”配置节点下增加GNFlush控制器ML2 plugin的entry point：

|  |
| --- |
| vi /usr/lib/python2.7/site-packages/neutron-7.0.3-py2.7.egg-info/entry\_points.txt |

参考下图添加如下内容：

|  |
| --- |
| gnflush = neutron.plugins.ml2.drivers.mechanism\_gnflush:GNFlushMechanismDriver |



1. 配置ml2

配置ml2前，需要准备如下信息：

* 租户网络类型：管理员可以根据需要选择“gre”或者“vxlan”。
* 控制器IP地址：数据中心SDN控制器所在服务器的IP地址。
* 控制器Rest服务端口：Rest服务监听端口需要查看SDN控制器配置文件中“[rest\_port]”配置，默认为“8081”

在Openstack控制中心服务器上执行如下命令修改ml2配置，以租户网络类型为“gre”为例：

|  |
| --- |
| crudini --set /etc/neutron/plugins/ml2/ml2\_conf.ini ml2 mechanism\_drivers gnflush |

在“/etc/neutron/plugins/ml2/ml2\_conf.ini”文件最后面添加“ml2\_gnflush”的选项:

|  |
| --- |
| [ml2\_gnflush]  password = admin  username = admin  url = http://192.168.53.3:8081/gn/neutron |

修改/etc/neutron/dhcp\_agent.ini

[DEFAULT]

interface\_driver = neutron.agent.linux.interface.OVSInterfaceDriver

dhcp\_driver = neutron.agent.linux.dhcp.Dnsmasq

enable\_isolated\_metadata = True

use\_namespaces = True

enable\_metadata\_network = True

verbose = True

1. 配置Openvswitch

配置前，需要准备如下信息：

* 本地IP：当前服务器的IP地址。
* 网卡名称：用于建立隧道的物理网卡。
* 控制器IP地址：数据中心SDN控制器所在服务器的IP地址。

在所有Openstack计算节点和网络节点上服务器上执行如下命令，可以通过“--help”选项查看帮助信息：

|  |
| --- |
| 网络节点命令如下  yum install openvswitch –y  systemctl enable openvswitch  systemctl start openvswitch  sh gnflush-controller.sh --local\_ip 192.168.51.118 --provider\_mappings eth0 --gnflush\_ip 192.168.53.71 --external\_provider br-ex  计算节点命令如下  yum install openvswitch –y  systemctl enable openvswitch  systemctl start openvswitch  sh gnflush-controller.sh --local\_ip 192.168.53.52 --provider\_mappings eth1 --gnflush\_ip 192.168.53.3  ovs-vsctl add-br br-int  ovs-vsctl set-controller br-int tcp:192.168.53.70:6633  ovs-vsctl add-port br-int eth0 |

1. 启动相关服务

上执行如下命令启动服务：

|  |
| --- |
|  |

# 6 其他命令

安装iperf

yum install <http://dl.fedoraproject.org/pub/epel/6/i386/epel-release-6-8.noarch.rpm>

yum install iperf