Install Neutron

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Abstract:
On top of the OpenStack environment built up earlier, the installation of Neutron networking service will be guided through this document. Afterwards, a virtual switching infrastructure can be built.

The components waited to be installed included:
1. Neutron API server
2. Modular Layer 2 (ML2) plugin
3. DHCP agent
4. Metadata agent

Creating the Neutron database on the controller node:

```
# mysql
MariaDB [(none)] > create database neutron;
MariaDB [(none)] > grant all privileges on neutron.* to ‘neutron’@’localhost’ identified by ‘neutron’;
MariaDB [(none)] > grant all privileges on neutron.* to ‘neutron’@’%’ identified by ‘neutron’;
MariaDB [(none)] > quit;
```

Configuring the Neutron user, node, and endpoint in Keystone:

On the controller node:

```
# source ~/adminrc
# openstack user create --domain Default --password=neutron neutron
# 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://controller01:9696
# openstack endpoint create --region RegionOne network internal http://controller01:9696
# openstack endpoint create --region RegionOne network admin http://controller01:9696
```

Installing Neutron packages:

On the controller node:

```
# apt -y install neutron-server neutron-dhcp-agent neutron-metadata-agent neutron-plugin-ml2 python-neutronclient
```

On all other nodes:

```
# apt -y install neutron-plugin-ml2
```

On all nodes:

```
# nano /etc/neutron/neutron.conf
```

Update as:

```
[database]
…
connection = mysql+pymysql://neutron:neutron@controller01/neutron

[DEFAULT]
…
auth_strategy = keystone
transport_url = rabbit://openstack:rabbit@controller01
core_plugin = ml2

[keystone_authtoken]
…
auth_uri = http://controller01:5000
auth_url = http://controller01:35357
```

```
memcached_servers = controller01:11211
auth_type = password
project_domain_name = default
user_domain_name = default
project_name = service
username = neutron
password = neutron
```

On the controller node:
Update as:

```
[nova]
…
auth_url = http://controller01:35357
auth_type = password
project_domain_name = default
user_domain_name = default
region_name = RegionOne
project_name = service
username = nova
password = nova

[DEFAULT]
…
dns_domain = alvin.com
```

On the controller and compute nodes:

```
# nano /etc/nova/nova.conf
Updata as:
[neutron]
…
url = http://controller01:9696
auth_url = http://controller01:35357
auth_type = password
project_domain_name = default
user_domain_name = default
region_name = RegionOne
project_name = service
username = neutron
password = neutron
```

Starting neutron-server:
On the controller node:

```
# 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
# systemctl restart nova-api nova-scheduler nova-conductor
On the compute nodes:
# systemctl restart nova-compute
On the controller node:
# systemctl restart neutron-server
```

Configuring the Neutron DHCP agent:
On the controller node:

```
# nano /etc/neutron/dhcp_agent.ini
Update as:
[DEFAULT]
…
enable_isolated_metadata = True
```

Restarting the Neutron DHCP agent:
On the controller node:

```
# systemctl restart neutron-dhcp-agent
# systemctl status neutron-dhcp-agent
```

You should see something like this:

```
root@controller01:~# systemctl restart neutron-dhcp-agent
root@controller01:~# systemctl status neutron-dhcp-agnet
● neutron-dhcp-agnet.service
   Loaded: not-found (Reason: No such file or directory)
   Active: inactive (dead)
root@controller01:~# systemctl status neutron-dhcp-agent
● neutron-dhcp-agent.service - OpenStack Neutron DHCP agent
   Loaded: loaded (/lib/systemd/system/neutron-dhcp-agent.service; enabled; vendor preset: enabled)
   Active: active (running) since Fri 2019-04-19 17:50:10 CST; 13s ago
  Process: 18297 ExecStartPre=/bin/chown neutron:adm /var/log/neutron (code=exited, status=0/SUCCESS)
  Process: 18293 ExecStartPre=/bin/chown neutron:neutron /var/lock/neutron /var/lib/neutron (code=exited, status=0/SUCCESS)
  Process: 18287 ExecStartPre=/bin/mkdir -p /var/lock/neutron /var/log/neutron /var/lib/neutron (code=exited, status=0/SUCCESS)
 Main PID: 18301 (neutron-dhcp-ag)
    Tasks: 1
   Memory: 106.0M
      CPU: 2.079s
   CGroup: /system.slice/neutron-dhcp-agent.service
           └─18301 /usr/bin/python /usr/bin/neutron-dhcp-agent --config-file=/etc/neutron/neutron.conf --config-file=/etc/neutr

Apr 19 17:50:10 controller01 systemd[1]: Starting OpenStack Neutron DHCP agent...
Apr 19 17:50:10 controller01 systemd[1]: Started OpenStack Neutron DHCP agent.
Apr 19 17:50:11 controller01 neutron-dhcp-agent[18301]: Guru meditation now registers SIGUSR1 and SIGUSR2 by default for backwa
lines 1-16/16 (END)
```

```
# openstack network agent list --agent-type=dhcp
```

You should see something like this:

```
root@controller01: # openstack network agent list --agent-type=dhcp
+--------------------------------------+------------+--------------+-------------------+-------+-------+--------------------+
| ID                                   | Agent Type | Host         | Availability Zone | Alive | State | Binary             |
+--------------------------------------+------------+--------------+-------------------+-------+-------+--------------------+
| cd86aadc-f5d6-42a0-a0f9-25ed9ee79f97 | DHCP agent | controller01 | nova              | :-)   | UP    | neutron-dhcp-agent |
+--------------------------------------+------------+--------------+-------------------+-------+-------+--------------------+
```

Configuring the Neutron metadata agent:

On the controller node:

```
# nano /etc/nova/nova.conf
```

Update as:

```
[neutron]
…
service_metadata_proxy = true
metadata_proxy_shared_secret = MetadataSecret123
```

```
# nano /etc/neutron/metadata_agent.ini
```

Update as:

```
[DEFAULT]
…
nova_metadata_host = controller01
metadata_proxy_shared_secret = MetadataSecret123
```

Restarting the Neutron metadata agnet:

On the controller node:

```
# systemctl restart nova-api neutron-metadata-agent
# systemctl status neutron-metadata-agent
```

You should see something like this:

```
root@controller01:~# systemctl restart nova-api neutron-metadata-agent
root@controller01:~# systemctl status neutron-metadata-agent
● neutron-metadata-agent.service - OpenStack Neutron Metadata Agent
   Loaded: loaded (/lib/systemd/system/neutron-metadata-agent.service; enabled; vendor preset: enabled)
   Active: active (running) since Fri 2019-04-19 17:56:22 CST; 11s ago
  Process: 18435 ExecStartPre=/bin/chown neutron:adm /var/log/neutron (code=exited, status=0/SUCCESS)
  Process: 18427 ExecStartPre=/bin/chown neutron:neutron /var/lock/neutron /var/lib/neutron (code=exited, status=0/SUCCESS)
  Process: 18418 ExecStartPre=/bin/mkdir -p /var/lock/neutron /var/log/neutron /var/lib/neutron (code=exited, status=0/SUCCESS)
 Main PID: 18444 (neutron-metadat)
    Tasks: 3
   Memory: 110.9M
      CPU: 2.018s
   CGroup: /system.slice/neutron-metadata-agent.service
           ├─18444 /usr/bin/python /usr/bin/neutron-metadata-agent --config-file=/etc/neutron/neutron.conf --config-file=/etc/ne
           ├─18478 /usr/bin/python /usr/bin/neutron-metadata-agent --config-file=/etc/neutron/neutron.conf --config-file=/etc/ne
           └─18479 /usr/bin/python /usr/bin/neutron-metadata-agent --config-file=/etc/neutron/neutron.conf --config-file=/etc/ne

Apr 19 17:56:22 controller01 systemd[1]: Stopped OpenStack Neutron Metadata Agent.
Apr 19 17:56:22 controller01 systemd[1]: Starting OpenStack Neutron Metadata Agent...
Apr 19 17:56:22 controller01 systemd[1]: Started OpenStack Neutron Metadata Agent.
Apr 19 17:56:23 controller01 neutron-metadata-agent[18444]: Guru meditation now registers SIGUSR1 and SIGUSR2 by default for bac
lines 1-19/19 (END)
```

```
# openstack network agent list --agent-type=metadata
```

You should see something like this:.

```
root@controller01:~# openstack network agent list --agent-type=metadata
+--------------------------------------+----------------+--------------+-------------------+-------+-------+--------------------
----+
| ID                                   | Agent Type     | Host         | Availability Zone | Alive | State | Binary
    |
+--------------------------------------+----------------+--------------+-------------------+-------+-------+--------------------
----+
| 0795c887-bff1-4273-afaa-c71d0e69e8b4 | Metadata agent | controller01 | None              | :-)   | UP    | neutron-metadata-ag
ent |
+--------------------------------------+----------------+--------------+-------------------+-------+-------+--------------------
----+
```

Verifying the Neutron has been installed properly:

Check the dashboard through a web browser: http://controller01/horizon/

You should see this view: