# OpenStack Installation - 2

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## ❖ OpenStack Installation

- Type the command only in the controller node
  - Packstack installs OpenStack on the compute node using Puppet and SSH

```
root@controller:~$ packstack --answer-file=packstack-sample-answer.txt

*** it takes about 30~40 minutes in the given default setup.
    if you assign more resource for the VM instances, the time will be reduced
```

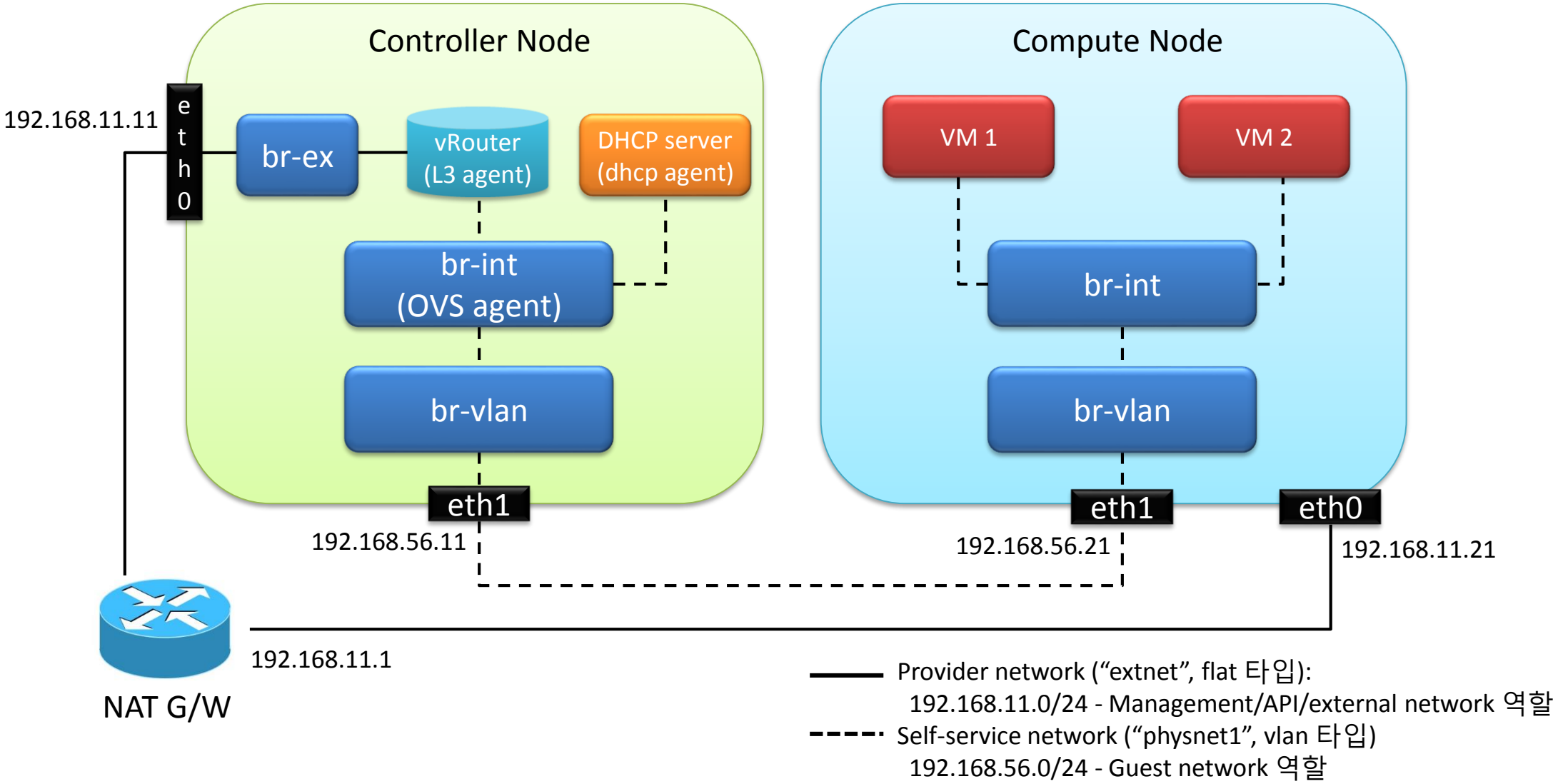
# OpenStack Installation

## ❖ Install Completion

```
[root@controller ~]# packstack --answer-file=packstack-sample-answer.txt
Welcome to the Packstack setup utility

The installation log file is available at: /var/tmp/packstack/20170623-225250-kriEka/openstack-setup.log

Installing:
Clean Up                                             [ DONE ]
Discovering ip protocol version                      [ DONE ]
root@192.168.11.11's password:
root@192.168.11.21's password:
Setting up ssh keys                                  [ DONE ]
Preparing servers                                    [ DONE ]
Pre installing Puppet and discovering hosts' details [ DONE ]
Adding pre install manifest entries                  [ DONE ]
Setting up CACERT                                    [ DONE ]
Adding AMQP manifest entries                         [ DONE ]
Adding MariaDB manifest entries                      [ DONE ]
Adding Apache manifest entries                       [ DONE ]
Fixing Keystone LDAP config parameters to be undef if empty[ DONE ]
...
Applying Puppet manifests                            [ DONE ]
Finalizing                                           [ DONE ]

 **** Installation completed successfully ******

Additional information:
 * Time synchronization installation was skipped.
Please note that unsynchronized time on server instances might be problem for some OpenStack components.
 * File /root/keystonerc_admin has been created on OpenStack client host 192.168.11.11.
To use the command line tools you need to source the file.
 * To access the OpenStack Dashboard browse to http://192.168.11.11/dashboard .
Please, find your login credentials stored in the keystonerc_admin in your home directory.
```

# OpenStack Installation

## ❖ Install Completion



# OpenStack Installation

## ❖ Install Completion

```
[root@controller ~]# ip addr
...
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast master ovs-system state UP qlen 1000
    link/ether 08:00:27:5a:5d:be brd ff:ff:ff:ff:ff:ff
    inet6 fe80::a00:27ff:fe5a:5dbe/64 scope link
       valid_lft forever preferred_lft forever
3: eth1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast master ovs-system state UP qlen 1000
    link/ether 08:00:27:77:e3:d6 brd ff:ff:ff:ff:ff:ff
    inet6 fe80::a00:27ff:fe77:e3d6/64 scope link
       valid_lft forever preferred_lft forever
4: eth2: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP qlen 1000
    link/ether 08:00:27:99:f0:7d brd ff:ff:ff:ff:ff:ff
    inet 10.10.1.11/24 brd 10.10.1.255 scope global eth2
       valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe99:f07d/64 scope link
       valid_lft forever preferred_lft forever
5: ovs-system: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN qlen 1000
    link/ether a2:98:01:2c:8b:25 brd ff:ff:ff:ff:ff:ff
6: br-int: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN qlen 1000
    link/ether 76:b0:3a:3a:0c:4c brd ff:ff:ff:ff:ff:ff
7: br-ex: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UNKNOWN qlen 1000
    link/ether 08:00:27:5a:5d:be brd ff:ff:ff:ff:ff:ff
    inet 192.168.11.11/24 brd 192.168.11.255 scope global br-ex
       valid_lft forever preferred_lft forever
    inet6 fe80::e897:dbff:fe5b:cc40/64 scope link
       valid_lft forever preferred_lft forever
8: br-vlan: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UNKNOWN qlen 1000
    link/ether 08:00:27:77:e3:d6 brd ff:ff:ff:ff:ff:ff
    inet 192.168.56.11/24 brd 192.168.56.255 scope global br-vlan
       valid_lft forever preferred_lft forever
    inet6 fe80::28ef:29ff:febf:3d4a/64 scope link
       valid_lft forever preferred_lft forever

[root@controller ~]# route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
0.0.0.0         192.168.11.1    0.0.0.0         UG    0      0        0 br-ex
10.10.1.0       0.0.0.0         255.255.255.0   U     0      0        0 eth2
                                                                    ...
192.168.11.0    0.0.0.0         255.255.255.0   U     0      0        0 br-ex
192.168.56.0    0.0.0.0         255.255.255.0   U     0      0        0 br-vlan
```

# OpenStack Installation

## ❖ Install Completion

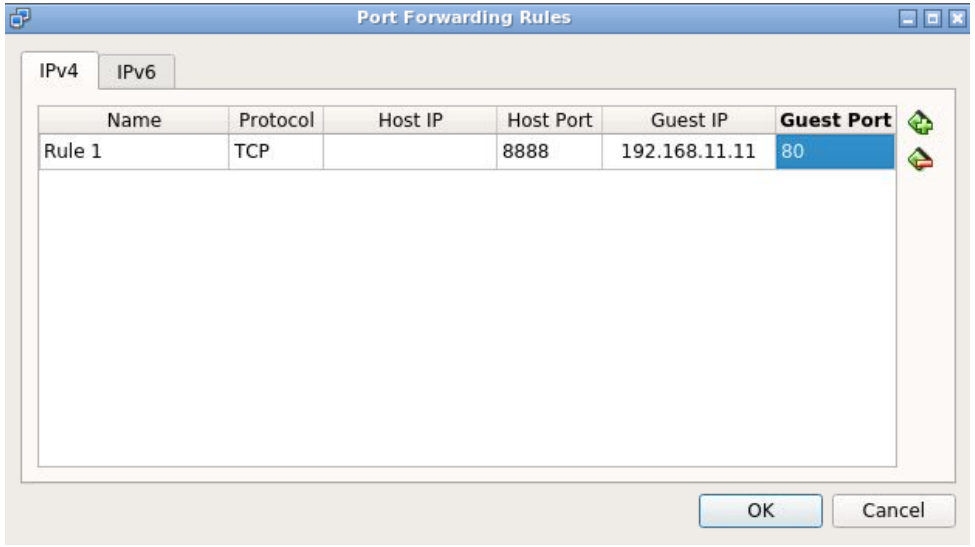
```
## controller node

[root@controller ~]# ovs-vsctl show
    Bridge br-int
        fail_mode: secure
        Port int-br-vlan
            Interface int-br-vlan
                type: patch
                options: {peer=phy-br-vlan}
        Port br-int
            Interface br-int
                type: internal
        Port int-br-ex
            Interface int-br-ex
                type: patch
                options: {peer=phy-br-ex}
    Bridge br-ex
        fail_mode: secure
        Port "eth0"
            Interface "eth0"
        Port br-ex
            Interface br-ex
                type: internal
        Port phy-br-ex
            Interface phy-br-ex
                type: patch
                options: {peer=int-br-ex}
    Bridge br-vlan
        fail_mode: secure
        Port phy-br-vlan
            Interface phy-br-vlan
                type: patch
                options: {peer=int-br-vlan}
        Port br-vlan
            Interface br-vlan
                type: internal
        Port "eth1"
            Interface "eth1"
    ovs_version: "2.6.1"
```

```
## compute node

[root@compute1 ~]# ovs-vsctl show
ca9025ae-b234-4493-a5f2-bc89faf98cbc
    Bridge br-vlan
        fail_mode: secure
        Port phy-br-vlan
            Interface phy-br-vlan
                type: patch
                options: {peer=int-br-vlan}
        Port "eth1"
            Interface "eth1"
        Port br-vlan
            Interface br-vlan
                type: internal
    Bridge br-int
        fail_mode: secure
        Port br-int
            Interface br-int
                type: internal
        Port int-br-vlan
            Interface int-br-vlan
                type: patch
                options: {peer=phy-br-vlan}
    ovs_version: "2.6.1"
```

# OpenStack Installation

## ❖ Dashboard Access

- OpenStack Dashboard (Horizon) URL: http://192.168.11.11/dashboard
- Add a port forwarding rule for Horizon in VirtualBox
  - File → Preferences → Network → NAT Networks → Edit “NatNetwork”
- Modify Horizon to allow accesses from external



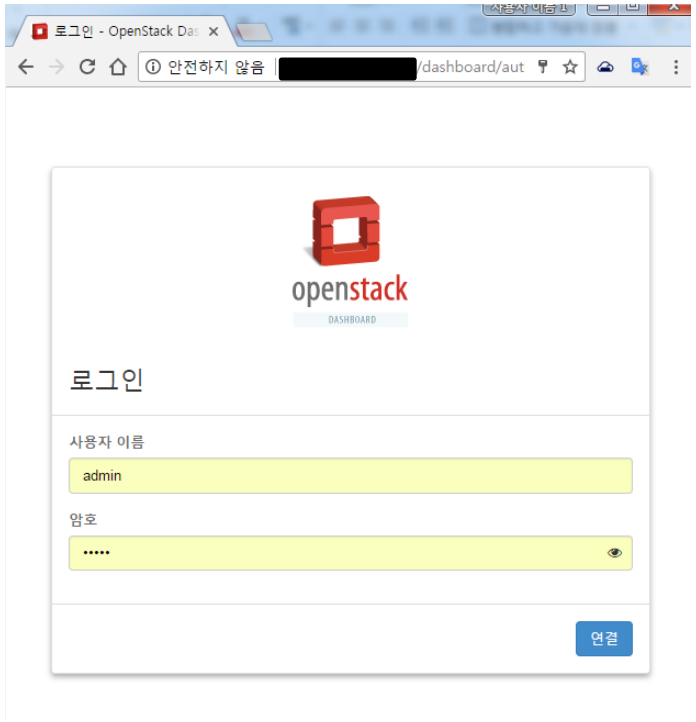

<VirtualBox Port Forwarding Setup>

```
## controller node

root@controller:~$ vim /etc/httpd/conf.d/15-horizon_vhost.conf
...
## Server aliases
ServerAlias 192.168.11.11
ServerAlias controller.openstack
ServerAlias localhost
ServerAlias *
...

root@controller:~$ service httpd restart
Redirecting to /bin/systemctl restart  httpd.service
```

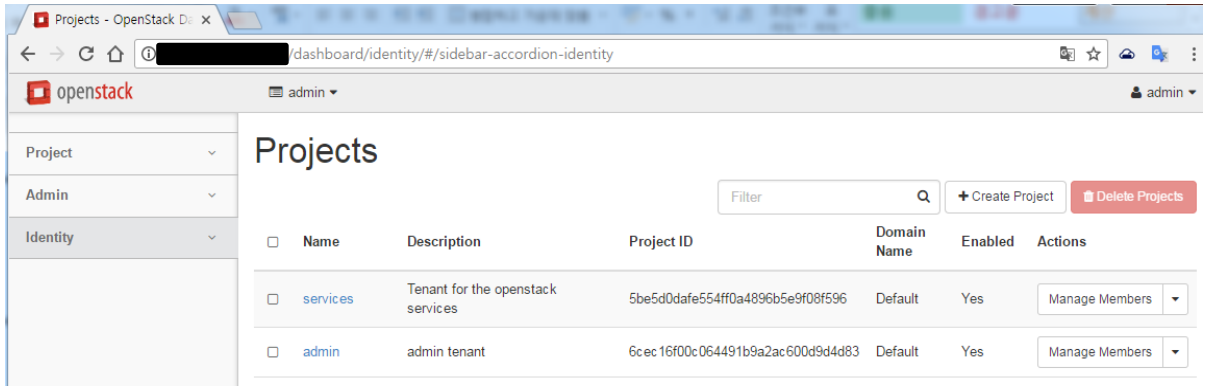
# OpenStack Installation

## ❖ Dashboard Access

- Access the OpenStack dashboard using a web browser
  - URL: http://{HOST_SERVER_IP}:8888/dashboard
  - ID: admin, PW: admin



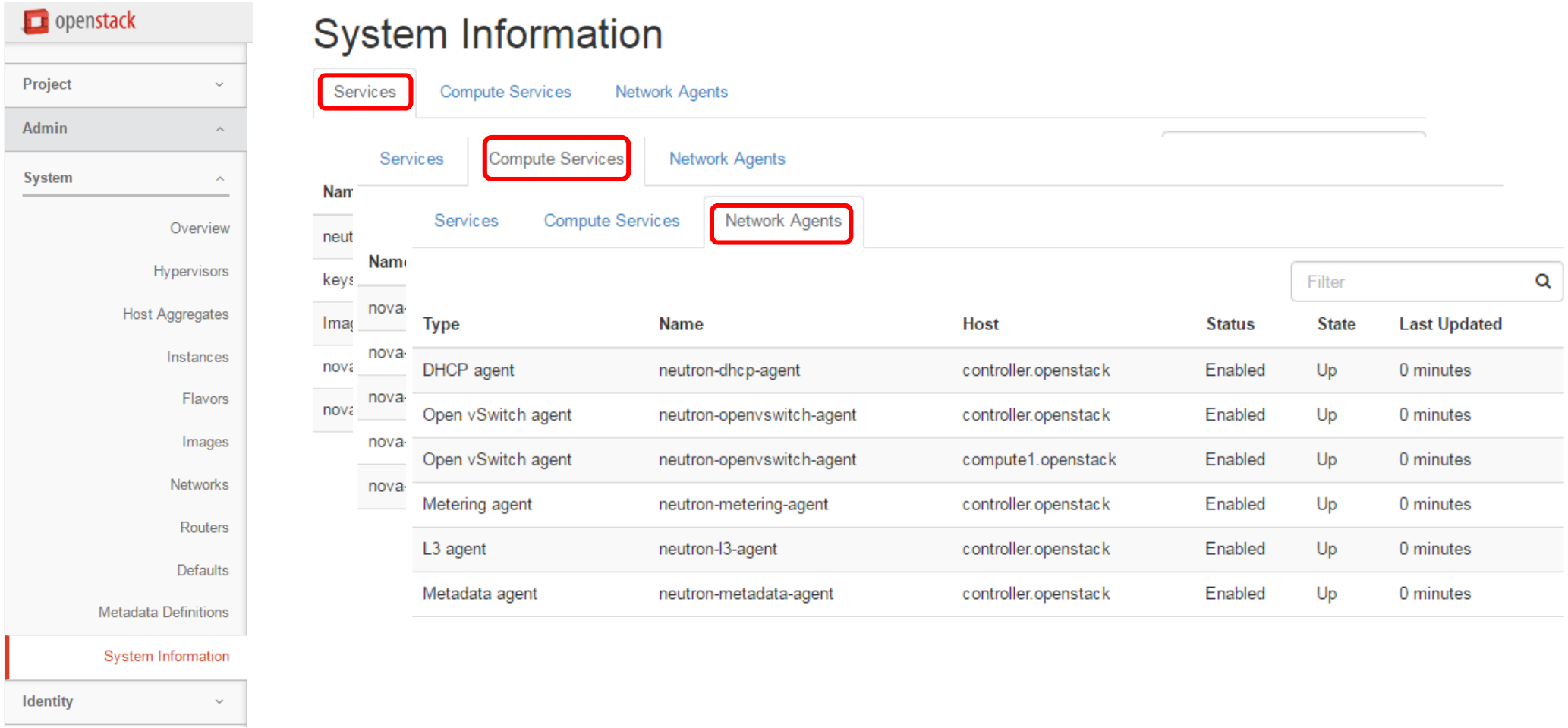

<Dashboard Login>




<Dashboard Panel>

# OpenStack Installation

## ❖ Dashboard




<System Information Panel>

# OpenStack Installation

## ❖ Compute Node Setup

- If a compute node is a virtual machine (VM), not a bare metal machine
  - The compute node cannot utilize KVM acceleration features to create a new VM instance
  - Set Nova to use only QEMU as the hypervisor (default: QEMU-KVM)

```
## compute node

root@compute:~$ yum install -y openstack-utils
root@compute:~$ openstack-config --set /etc/nova/nova.conf DEFAULT virt_type qemu
root@compute:~$ systemctl restart openstack-nova-compute.service
root@compute:~$ systemctl status openstack-nova-compute.service
● openstack-nova-compute.service - OpenStack Nova Compute Server
   Loaded: loaded (/usr/lib/systemd/system/openstack-nova-compute.service; enabled; vendor preset: disabled)
   Active: active (running) since Tue 2017-04-04 22:05:48 KST; 29s ago
 Main PID: 13695 (nova-compute)
   CGroup: /system.slice/openstack-nova-compute.service
           └─13695 /usr/bin/python2 /usr/bin/nova-compute
...
```

# Demo

```
[root@controller ~]#
[root@controller ~]# ls
anaconda-ks.cfg  epel-release-7-1.noarch.rpm  keystonerc_admin  packstack-adding-compute.txt  pac
[root@controller ~]#
[root@controller ~]# packstack --answer-file=packstack-sample-answer.txt
Welcome to the Packstack setup utility

The installation log file is available at: /var/tmp/packstack/20170818-210037-oan906/openstack-se

Installing:
Clean Up                                             [ DONE ]
Discovering ip protocol version                      [ DONE ]
Setting up ssh keys                                  [ DONE ]
Preparing servers                                    [ DONE ]
Pre installing Puppet and discovering hosts' details [ DONE ]
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Setting up CACERT                                    [ DONE ]
Adding AMQP manifest entries                         [ DONE ]
Adding MariaDB manifest entries                      [ DONE ]
Adding Apache manifest entries                       [ DONE ]
Fixing Keystone LDAP config parameters to be undef if empty[ DONE ]
Adding Keystone manifest entries                     [ DONE ]
Adding Glance Keystone manifest entries              [ DONE ]
Adding Glance manifest entries                       [ DONE ]
Adding Nova API manifest entries                     [ DONE ]
Adding Nova Keystone manifest entries                [ DONE ]
Adding Nova Cert manifest entries                    [ DONE ]
Adding Nova Conductor manifest entries               [ DONE ]
Creating ssh keys for Nova migration                 [ DONE ]
Gathering ssh host keys for Nova migration           [ DONE ]
Adding Nova Compute manifest entries                 [ DONE ]
Adding Nova Scheduler manifest entries               [ DONE ]
Adding Nova VNC Proxy manifest entries               [ DONE ]
Adding OpenStack Network-related Nova manifest entries[ DONE ]
```


THANK
YOU