



# OpenStack Setup using Horizon - 3

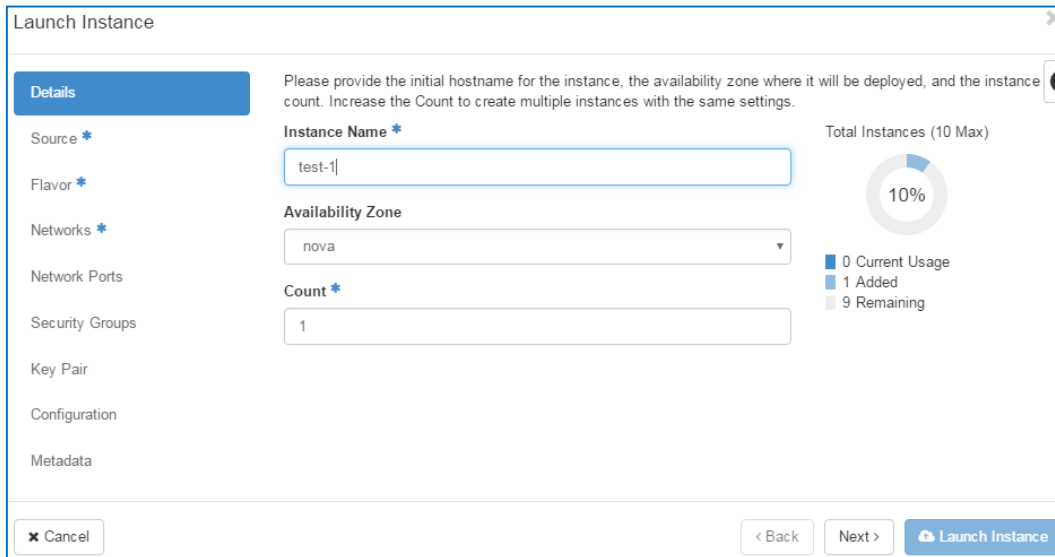
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## ❖ VM Instance (Demo)

- Create and launch two VMs in the “Demo” tenant
- The VM instances will be deployed on the given compute node
- Compute → Instances → Launch Instance
- ① Details: type the instance name; “test-#”
- ② Source: select the cirros image previously uploaded
- ③ Flavor: select “flavor1” flavor
- ④ Networks: select “tenant1” network



The screenshot shows the 'Launch Instance' dialog box with the 'Details' tab selected. The 'Instance Name' field contains 'test-1'. The 'Availability Zone' is set to 'nova'. The 'Count' is set to '1'. A circular progress indicator shows '10%' completion, with a legend indicating '0 Current Usage', '1 Added', and '9 Remaining'. The 'Total Instances (10 Max)' is displayed. The 'Launch Instance' button is highlighted in blue.

Launch Instance

Please provide the initial hostname for the instance, the availability zone where it will be deployed, and the instance count. Increase the Count to create multiple instances with the same settings.

Instance Name \*

test-1

Availability Zone

nova

Count \*

1

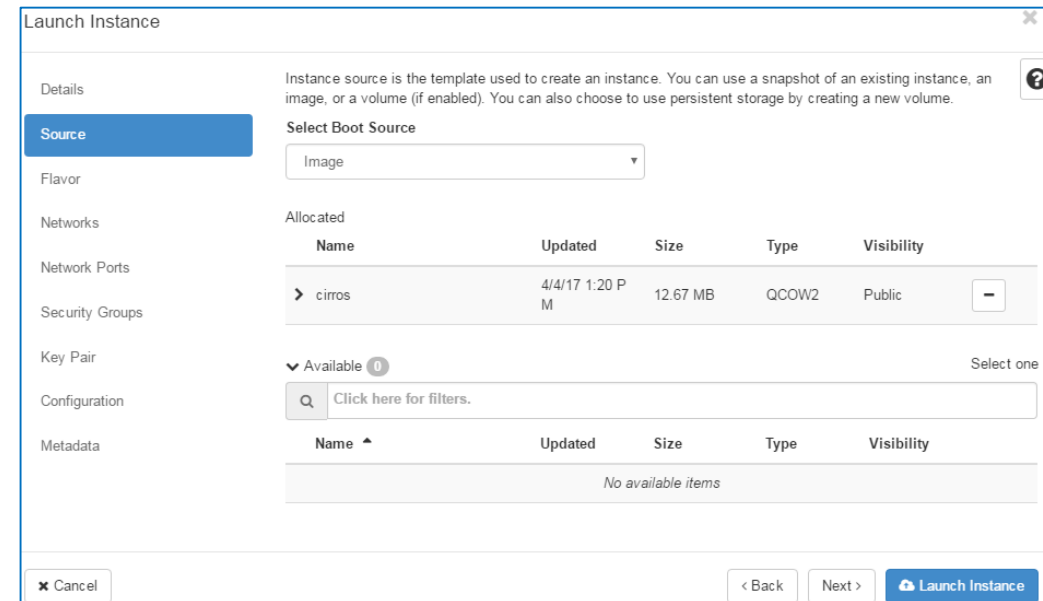
Total Instances (10 Max)

10%

0 Current Usage  
1 Added  
9 Remaining

< Back Next > Launch Instance

<① Instance Details Setup>



The screenshot shows the 'Launch Instance' dialog box with the 'Source' tab selected. The 'Select Boot Source' dropdown is set to 'Image'. A table lists available images, with 'cirros' selected. The 'Launch Instance' button is highlighted in blue.

Launch Instance

Instance source is the template used to create an instance. You can use a snapshot of an existing instance, an image, or a volume (if enabled). You can also choose to use persistent storage by creating a new volume.

Select Boot Source

Image

Allocated

Name	Updated	Size	Type	Visibility
> cirros	4/4/17 1:20 PM	12.67 MB	QCOW2	Public

▼ Available (0) Select one

Click here for filters.

Name	Updated	Size	Type	Visibility
No available items				

< Back Next > Launch Instance

<② Instance Source Image Setup>

# OpenStack Setup using Horizon

Launch Instance

Details

Source

Flavor

Networks

Network Ports

Security Groups

Key Pair

Configuration

Metadata

Flavors manage the sizing for the compute, memory and storage capacity of the instance.

Allocated

Name	VCPUS	RAM	Total Disk	Root Disk	Ephemeral Disk	Public
> flavor1	1	256 MB	1 GB	1 GB	0 GB	Yes

Available 5

Select one

Click here for filters.

Name	VCPUS	RAM	Total Disk	Root Disk	Ephemeral Disk	Public
> m1.tiny	1	512 MB	1 GB	1 GB	0 GB	Yes
> m1.small	1	2 GB	20 GB	20 GB	0 GB	Yes
> m1.medium	2	4 GB	40 GB	40 GB	0 GB	Yes
> m1.large	4	8 GB	80 GB	80 GB	0 GB	Yes
> m1.xlarge	8	16 GB	160 GB	160 GB	0 GB	Yes

Cancel

Back

Next

Launch Instance

<③ Instance Flavor Setup>

Launch Instance

Details

Source

Flavor

Networks

Network Ports

Security Groups

Key Pair

Configuration

Metadata

Networks provide the communication channels for instances in the cloud.

Allocated 1

Select networks from those listed below.

Network	Subnets Associated	Shared	Admin State	Status	
> 1	> tenant1	tenant1_subnet	No	Up	Active

Available 1

Select at least one network

Click here for filters.

Network	Subnets Associated	Shared	Admin State	Status
> provider	provider_subnet	Yes	Up	Active

Cancel

Back

Next

Launch Instance

<④ Instance Network Setup>

Instances

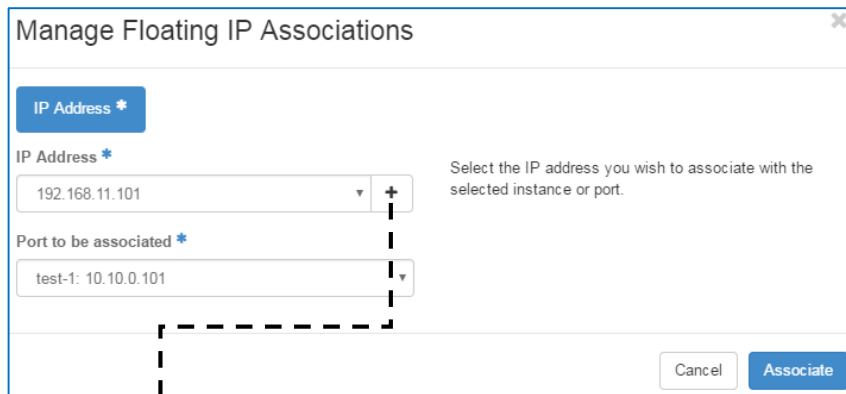
Instance Name = Filter Launch Instance Delete Instances More Actions

Instance Name	Image Name	IP Address	Size	Key Pair	Status	Availability Zone	Task	Power State	Time since created	Actions
<input type="checkbox"/> test-2	cirros	10.10.0.102	flavor1	Demo	Active	nova	None	Running	0 minutes	Create Snapshot
<input type="checkbox"/> test-1	cirros	10.10.0.101	flavor1	Demo	Active	nova	None	Running	0 minutes	Create Snapshot

<⑤ Instances Panel>

## ❖ Floating IP Allocation (Demo)

- Assign floating IPs to the created instances to enable external connectivity
- Compute → Instances → Drop down the “Actions” tap → Associate Floating IP → Push “+” button in IP Address
- “Port to be associated” : Choose a network interface of the VM to be associated with the floating IP



Manage Floating IP Associations

IP Address \*

IP Address \*

192.168.11.101

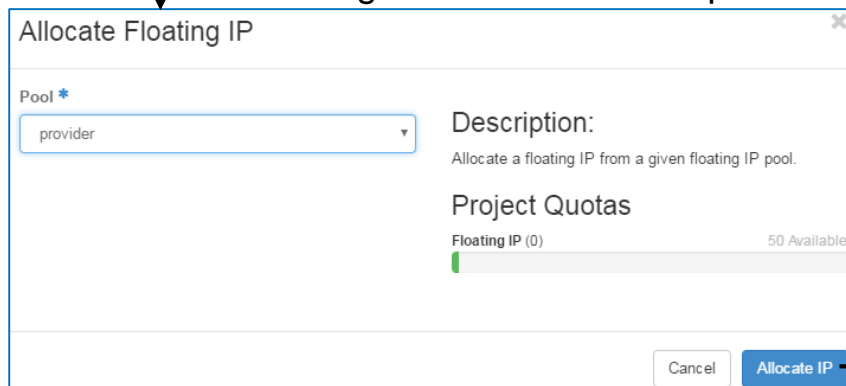
Port to be associated \*

test-1: 10.10.0.101

Select the IP address you wish to associate with the selected instance or port.

Cancel Associate

<Floating IP Association Setup>



Allocate Floating IP

Pool \*

provider

Description:

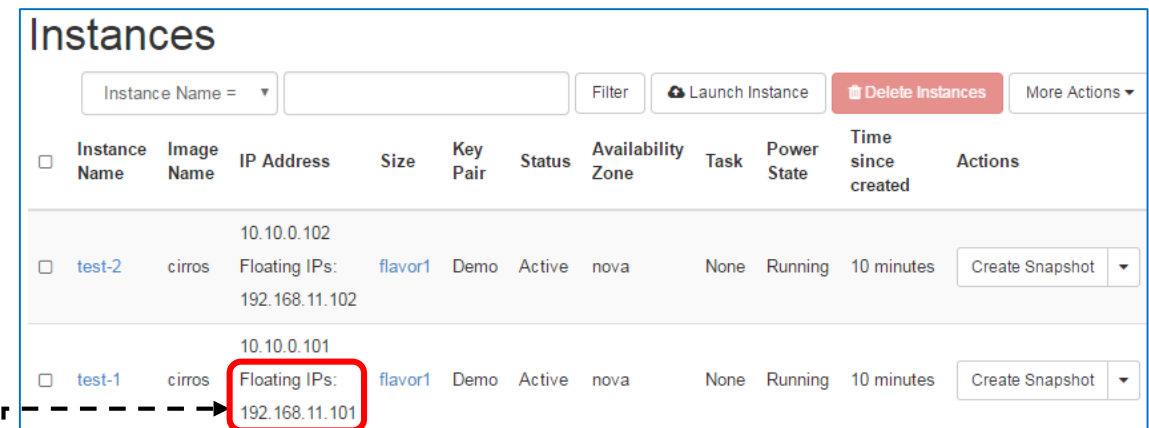
Allocate a floating IP from a given floating IP pool.

Project Quotas

Floating IP (0) 50 Available

Cancel Allocate IP

<Floating IP Pool Selection>



Instances

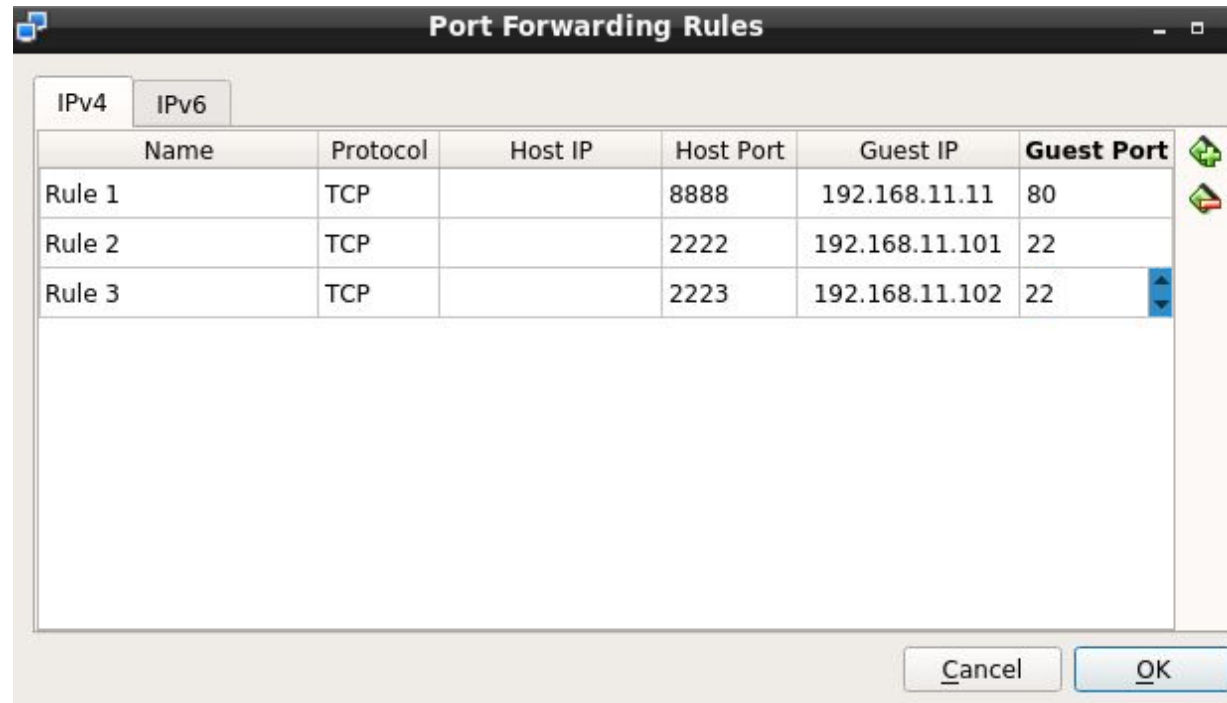
Instance Name = Filter Launch Instance Delete Instances More Actions

<input type="checkbox"/>	Instance Name	Image Name	IP Address	Size	Key Pair	Status	Availability Zone	Task	Power State	Time since created	Actions
<input type="checkbox"/>	test-2	cirros	10.10.0.102								
			Floating IPs:	flavor1	Demo	Active	nova	None	Running	10 minutes	Create Snapshot
			192.168.11.102								
<input type="checkbox"/>	test-1	cirros	10.10.0.101								
			Floating IPs:	flavor1	Demo	Active	nova	None	Running	10 minutes	Create Snapshot
			192.168.11.101								

<Instances Panel>

## ❖ Port Forwarding Rules for Remote Access to VMs

- Add rules for SSH connection from external to the VM instances using the assigned floating IPs
  - “test-1” VM: 192.168.11.101:22
  - “test-2” VM: 192.168.11.102:22

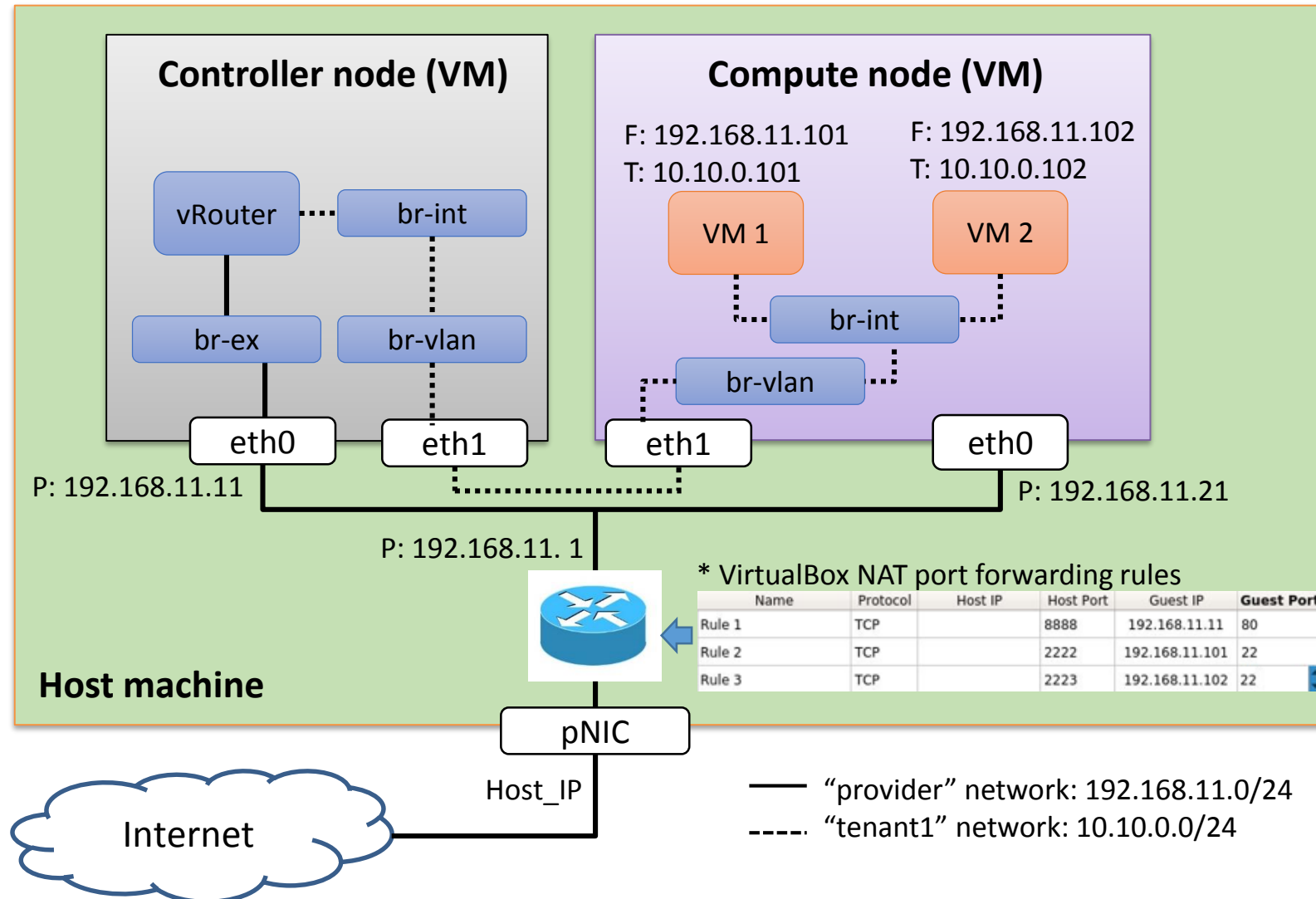


<VirtualBox PortFowarding Setup>

# OpenStack Setup using Horizon

## ❖ OpenStack Setup using Horizon

F: Floating IP  
T: "tenant1" network IP



## ❖ SSH Connection to VM Instances

- Assume that an external client machine has the private key of the VM
  - “demo.pem”: includes authentication for VMs in “Demo” tenant, and was downloaded automatically in p. 6, W11-2

```
root@external:~$ sudo chmod 600 demo.pem
root@external:~$ sudo ssh -i demo.pem -p 2222 cirros@{HOST_IP}

## connection established
$ 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 1450 qdisc pfifo_fast qlen 1000
    link/ether fa:16:3e:1d:06:62 brd ff:ff:ff:ff:ff:ff
    inet 10.10.0.101/24 brd 10.10.0.255 scope global eth0
    inet6 fe80::f816:3eff:fe1d:662/64 scope link
        valid_lft forever preferred_lft forever
$
$ exit
Connection to 141.223.82.54 closed.

root@external:~$ sudo ssh -i demo.pem -p 2223 cirros@{HOST_IP}

## connection established
$ 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 1450 qdisc pfifo_fast qlen 1000
    link/ether fa:16:3e:bd:39:7f brd ff:ff:ff:ff:ff:ff
    inet 10.10.0.102/24 brd 10.10.0.255 scope global eth0
    inet6 fe80::f816:3eff:febd:397f/64 scope link
        valid_lft forever preferred_lft forever
```

Name	Protocol	Host IP	Host Port	Guest IP	Guest Port
Rule 1	TCP		8888	192.168.11.11	80
Rule 2	TCP		2222	192.168.11.101	22
Rule 3	TCP		2223	192.168.11.102	22

## ❖ Networking test on VM instance

```
$ ping 10.10.0.102
PING 10.10.0.102 (10.10.0.102): 56 data bytes
64 bytes from 10.10.0.102: seq=0 ttl=64 time=6.614 ms
64 bytes from 10.10.0.102: seq=1 ttl=64 time=1.391 ms
64 bytes from 10.10.0.102: seq=2 ttl=64 time=1.206 ms
^C
--- 10.10.0.102 ping statistics ---
3 packets transmitted, 3 packets received, 0% packet loss
round-trip min/avg/max = 1.206/3.070/6.614 ms
$
```

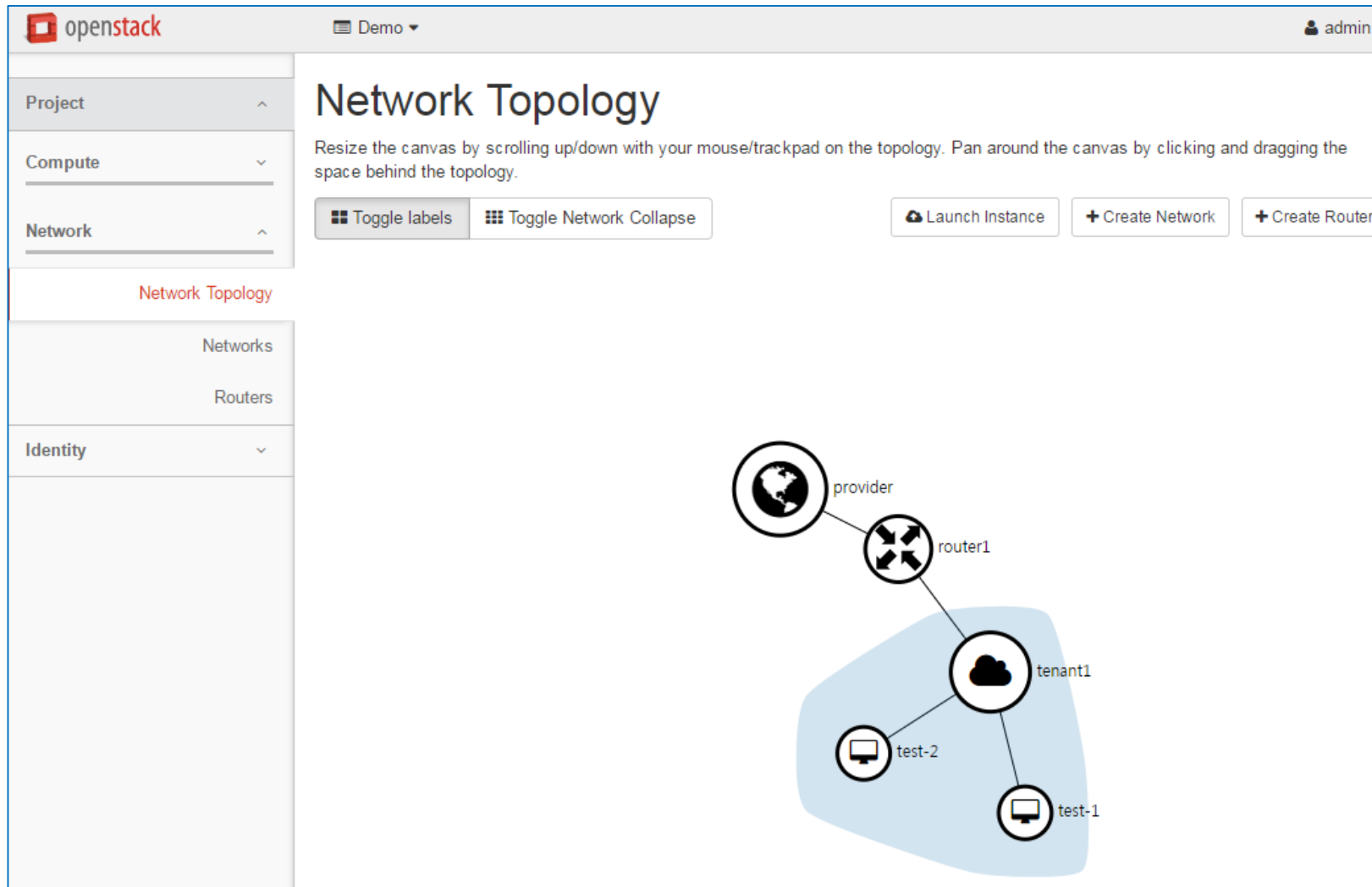
Tenant network (10.10.0.0/24) ping test

```
$ ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8): 56 data bytes
64 bytes from 8.8.8.8: seq=0 ttl=40 time=58.719 ms
64 bytes from 8.8.8.8: seq=1 ttl=40 time=59.274 ms
64 bytes from 8.8.8.8: seq=2 ttl=40 time=59.185 ms
64 bytes from 8.8.8.8: seq=3 ttl=40 time=58.486 ms
64 bytes from 8.8.8.8: seq=4 ttl=40 time=59.654 ms
^C
--- 8.8.8.8 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 58.486/59.063/59.654 ms
$
```

Internet (Google DNS) ping test



# OpenStack Setup using Horizon



<Network Topology Panel>

Project ^

Compute ^

Overview

Instances

Images

Access & Security

Network v

Identity v

Instances

Instance Name =

Filter

Launch Instance

Instance Name	Image Name	IP Address	Size	Key Pair	Status	Availability Zone	Task	Power State	Time since created	Actions
No items to display.										





## 1. OpenStack Installation

- <http://myblog.opendocs.co.kr/archives/17>
- <https://keithtenzer.com/2015/09/01/openstack-kilo-lab-installation-and-configuration-guide/>
- <https://www.rdoproject.org/install/quickstart/>
- <https://github.com/openstack/packstack/blob/master/docs/packstack.rst>

## 2. OpenStack Environment Setup

- <https://allthenodes.wordpress.com/2016/03/08/all-in-one-openstack-liberty-using-rdo-packstack-with-external-public-ips/#comments>
- <https://sunnynetwork.wordpress.com/2016/04/09/lab-19openstack-multi-node-deployment-using-packstack/>
- <https://docs.openstack.org/newton/install-guide-rdo/overview.html>
- <https://docs.openstack.org/ops-guide/ops-network-troubleshooting.html>
- <https://www.slideshare.net/yeswldms/150413-open-stack-networking-with-neutron>

## 3. X11 Forwarding using PuTTY

- <http://talkingaboutme.tistory.com/409>
- [http://www.netsarang.co.kr/tutorial/xshell/2609/X11\\_%ED%8F%AC%EC%9B%8C%EB%94%A9\\_%EC%84%A4%EC%A0%95%ED%95%98%EA%B8%B0](http://www.netsarang.co.kr/tutorial/xshell/2609/X11_%ED%8F%AC%EC%9B%8C%EB%94%A9_%EC%84%A4%EC%A0%95%ED%95%98%EA%B8%B0)