

# DevStack

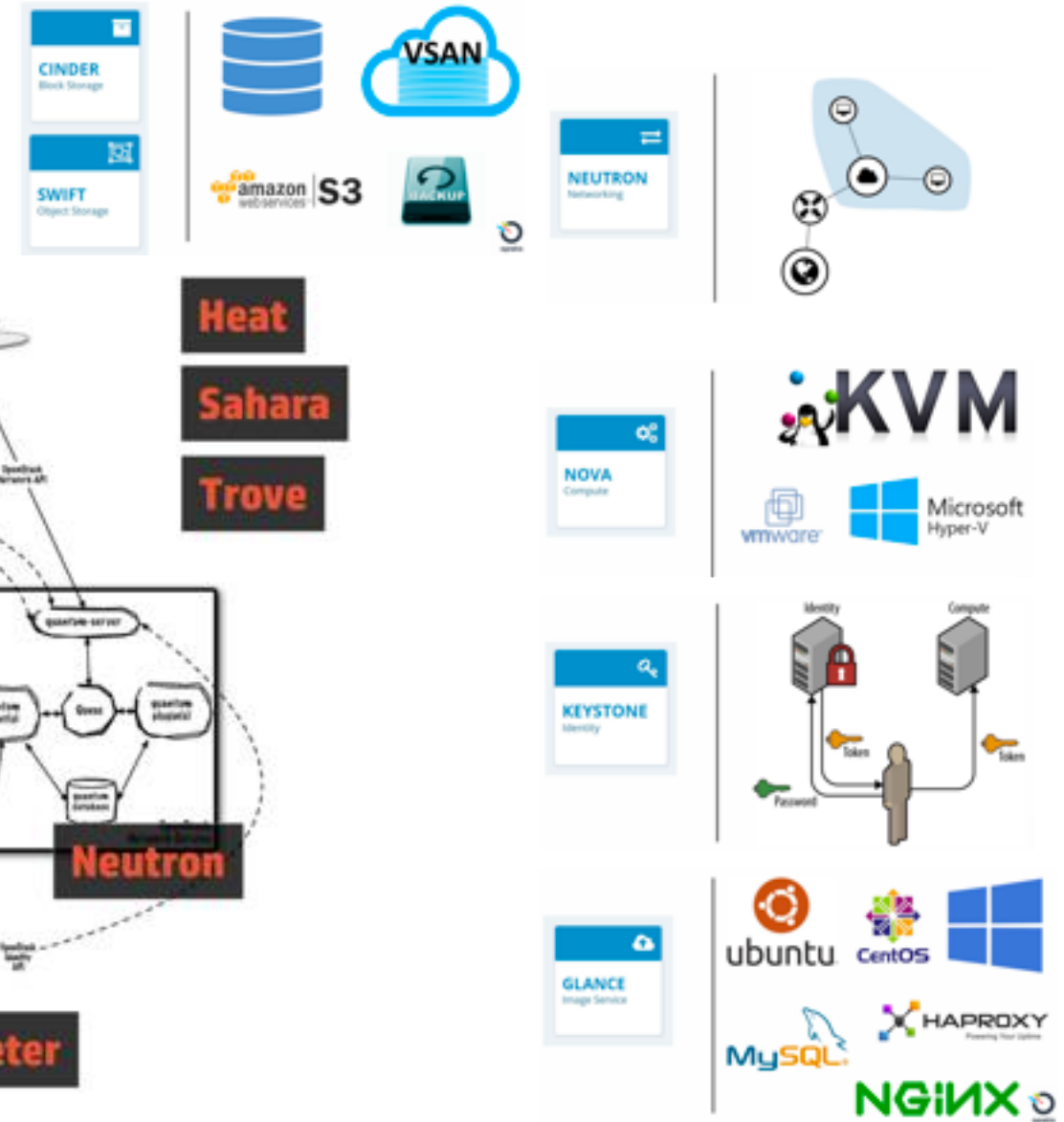
Hojin kim/ Open Source Consulting

2017.07.14

# OpenStack

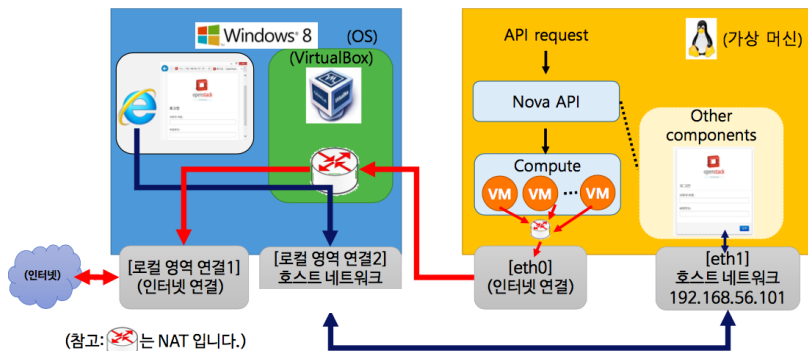
# OpenStack

- OpenStack core services & etc



# DevStack

- install Linux – ubuntu 16.04
- Add Stack User
- Download DevStack
- Create a local.conf
- Start the install
- working DevStack!



출처: OpenStack korea community by 최영락

일반

이름: OpenStack korea - devstack

운영 체제: Ubuntu (64-bit)

시스템

기본 메모리: 6026 MB

프로세서: 2

실행 제한: 44%

부팅 순서: 하드 디스크, 광 디스크

가속: VT-X/AMD-V, 네스티드 페이징, KVM 반가상화

디스플레이

비디오 메모리: 16 MB

원격 데스크톱 서버: 사용 안함

비디오 캡처: 사용 안함

저장소

컨트롤러: IDE

IDE 세컨더리 마스터: [광학 드라이브] 비어 있음

컨트롤러: SATA

SATA 포트 0: OpenStack korea - devstack -disk1.vdi (일반, 20.00 GB)

SATA 포트 1: OpenStack korea - devstack -disk2.vdi (일반, 8.00 GB)

SATA 포트 2: OpenStack korea - devstack -disk3.vdi (일반, 102.28 GB)

오디오

호스트 드라이버: CoreAudio

컨트롤러: ICH AC97

네트워크

어댑터 1: Intel PRO/1000 MT Desktop (NAT)

어댑터 2: Intel PRO/1000 MT Desktop (호스트 전용 어댑터, 'vboxnet0')

미리 보기

# DevStack

- install Linux
- Add Stack User
- Download DevStack
- Create a local.conf
- Start the install
- working DevStack!

```
$ sudo useradd -s /bin/bash -d /opt/stack -m stack
$ echo "stack ALL=(ALL) NOPASSWD: ALL" | sudo tee
/etc/sudoers.d/stack
$ sudo su - stack
```

```
khoj@devstack01: ~
khoj@devstack01:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 08:00:27:53:ed:84 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic enp0s3
        valid_lft 86378sec preferred_lft 86378sec
    inet6 fe80::cb76:6e5c:2b26:1849/64 scope link
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 08:00:27:c7:16:0d brd ff:ff:ff:ff:ff:ff
    inet 10.10.10.41/24 brd 10.10.10.255 scope global enp0s8
        valid_lft forever preferred_lft forever
    inet6 fe80::61ce:a21c:f1f5:c06c/64 scope link
        valid_lft forever preferred_lft forever
khoj@devstack01:~$
```

# DevStack

- install Linux
- Add Stack User
- **Download DevStack**
- Create a local.conf
- Start the install
- working DevStack!

```
$ git clone https://git.openstack.org/openstack-dev/devstack -b stable/ocata
```

```
$ cd devstack
```

# DevStack

- install Linux
- Add Stack User
- Download DevStack
- **Create a local.conf**
- Start the install
- working DevStack!

- Local.conf
  - Stack.sh 의 default 값을 customizing하거나 정의하기 위한 파일

```
$ cat local.conf
[[local|localrc]]
ADMIN_PASSWORD=secret
DATABASE_PASSWORD=$ADMIN_PASSWORD
RABBIT_PASSWORD=$ADMIN_PASSWORD
SERVICE_PASSWORD=$ADMIN_PASSWORD
HOST_IP=10.10.10.41
SERVICE_HOST=$HOST_IP
no_proxy=127.0.0.1,10.10.10.41
```

설치 후 코드 변경 및 테스트 용도를 위해서 설치후세팅

```
OFFLINE=True # don't download if rpms exist
RECLONE=no # doesn't a clean install every time
LOGFILE=$DEST/logs/stack.sh.log # install log
```

- Local.conf - ceph

```
$ cat local.conf
...+
enable_plugin devstack-plugin-ceph
git://git.openstack.org/openstack/devstack-plugin-ceph
ENABLE_CEPH_CINDER=True # ceph backend for cinder
ENABLE_CEPH_GLANCE=True # store images in ceph
ENABLE_CEPH_C_BAK=True # backup volumes to ceph
ENABLE_CEPH_NOVA=True # allow nova to use ceph resources
```

- Local.conf - neutron

```
$ cat local.conf
...+
disable_service n-net
enable_service q-svc
enable_service q-agt
enable_service q-dhcp
enable_service q-l3
enable_service q-meta
```



# DevStack

- install Linux
- Add Stack User
- Download DevStack
- Create a local.conf
- **Start the install**
- working DevStack!

```
./stack.sh
```

## we met the error #1

```
OSError: [Errno 13] Permission denied:  
'/opt/stack/.cache/pip/wheels/2c/f7/79/13f3a12cd7  
23892437c0cfbde1230ab4d82947ff7b3839a4fc'  
➔ chown -R stack /opt/stack/.cache
```

## we met the error #2

```
Failed to discover available identity versions when  
contacting http://10.10.10.41/identity. Attempting  
to parse version from URL.Could not determine a  
suitable URL for the plugin
```

Add local.conf as below

```
no_proxy=127.0.0.1,10.10.10.41
```

# DevStack

- install Linux
- Add Stack User
- Download DevStack
- Create a local.conf
- **Start the install**
- working DevStack!

```
./stack.sh
```

## we met the error #3

Failed to discover available identity versions when contacting http://10.10.10.41/identity. Attempting to parse version from URL. Could not determine a suitable URL for the plugin

➔ `./unstack.sh`, `./clean.sh` , `rm -rf /opt/stack/*`  
`git clone https://git.openstack.org/openstack-dev/devstack`  
`./stack.sh` with the same local.conf and the deployment completed.

# DevStack

- install Linux
- Add Stack User
- Download DevStack
- Create a local.conf
- **Start the install**
- working DevStack!

```
./stack.sh
```

## we met the error #4

```
2017-07-13 23:58:08.437 | Discovering versions  
from the identity service failed when creating the  
password plugin. Attempting to determine version  
from URL.2017-07-13 23:58:08.437 | Could not  
determine a suitable URL for the plugin
```

# DevStack

- install Linux
- Add Stack User
- Download DevStack
- Create a local.conf
- Start the install
- **working DevStack!**

```
screen -x stack  
( if you meet error, please type script /dev/null)
```

## Other command

- unstack.sh
  - DB/mq stop

```
screen -x stack  
( if you meet error, please type script /dev/null)
```

# Developing Code

- change code
- Restart service
  - CTRL +C
  - up arrow
  - Enter
- List name of all screen
  - Ctrl + a, Then Press Shift + '
- Detach/Exit from a screen
  - Ctrl + a, Then Press d


```
screen -x stack
```

```
( if you meet error, please type script /dev/null)
```

```
screen -ls / screen -r <session-id> / rejoin-stack.sh
```

# Packstack

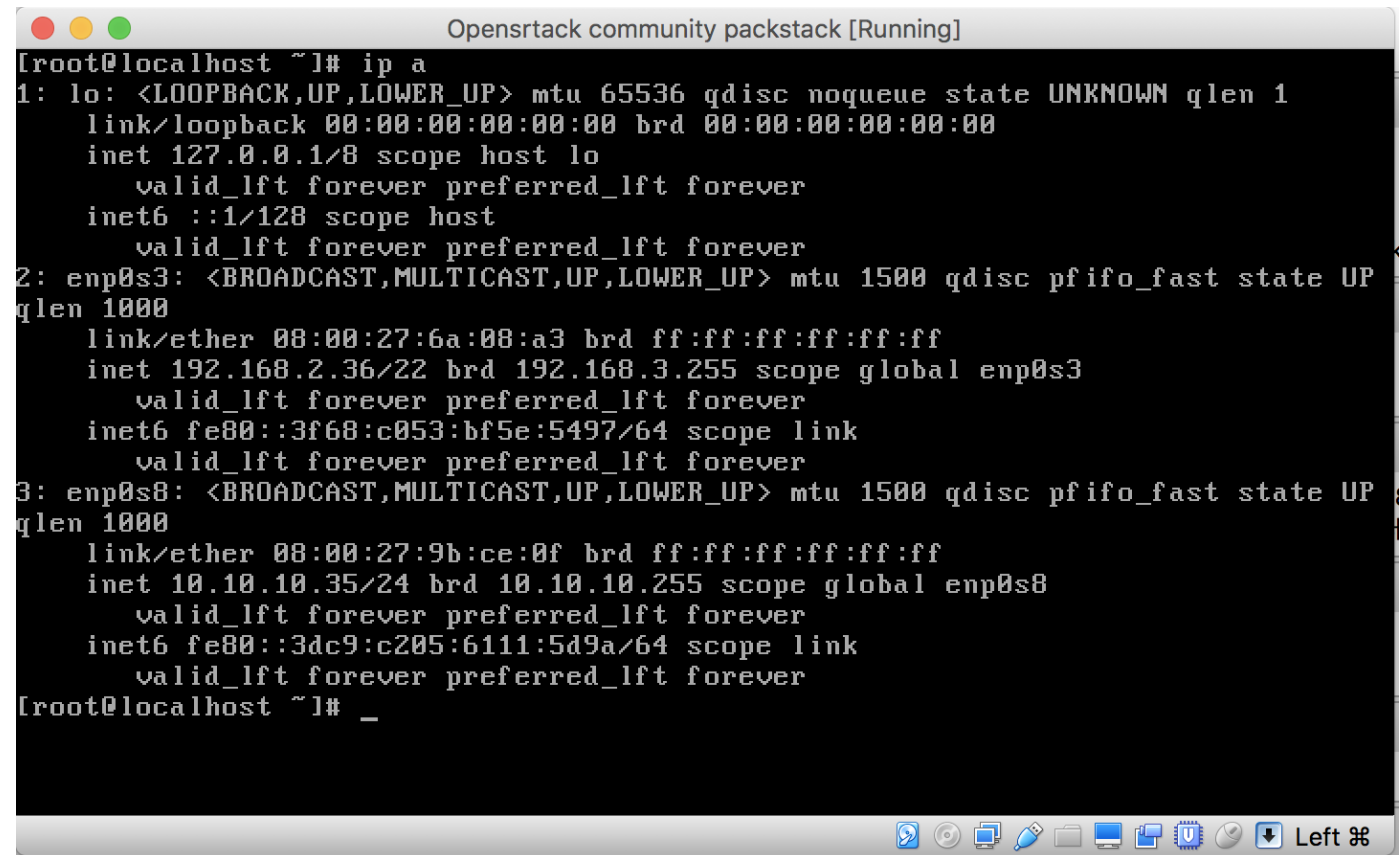
- install Linux – centos 7.3
- Download PackStack
- Configure answer.txt
- Start the install
- working DevStack!

일반	미리 보기
이름: Opensrtack community packstack 운영 체제: Red Hat (64-bit)	
시스템 기본 메모리: 2048 MB 부팅 순서: 광 디스크, 하드 디스크 가속: VT-X/AMD-V, 네스티드 페이징, PAE/NX, KVM 반가상화	
디스플레이 비디오 메모리: 16 MB 원격 데스크톱 서버: 사용 안함 비디오 캡처: 사용 안함	
저장소 컨트롤러: IDE IDE 세컨더리 마스터: [광학 드라이브] 비어 있음 컨트롤러: SATA SATA 포트 0: Opensrtack community packstack-disk1.vdi (일반, 20.38 GB)	
오디오 호스트 드라이버: CoreAudio 컨트롤러: ICH AC97	
네트워크 어댑터 1: Intel PRO/1000 MT Desktop (브리지 어댑터, en8: USB 10/100 LAN) 어댑터 2: Intel PRO/1000 MT Desktop (호스트 전용 어댑터, 'vboxnet0')	

# PackStack

- install Linux
- Download PackStack
- Configure answer.txt
- Start the install
- working DevStack!

```
hostnamectl set-hostname packstack04
yum install -y centos-release-openstack-ocata;
yum update -y ; reboot
yum install -y openstack-packstack;
yum install -y openstack-utils
```

A terminal window titled "Opensrtack community packstack [Running]" showing the output of the 'ip a' command. The output lists three network interfaces: 'lo' (loopback), 'enp0s3' (ethernet), and 'enp0s8' (ethernet). Each interface shows its state, MTU, queue discipline, and various addresses (link, inet, inet6). The terminal is running on a system with a desktop environment, as evidenced by the window title bar and the system tray at the bottom.

```
Opensrtack community packstack [Running]
[root@localhost ~]# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN qlen 1
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP
    qlen 1000
    link/ether 08:00:27:6a:08:a3 brd ff:ff:ff:ff:ff:ff
    inet 192.168.2.36/22 brd 192.168.3.255 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::3f68:c053:bf5e:5497/64 scope link
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP
    qlen 1000
    link/ether 08:00:27:9b:ce:0f brd ff:ff:ff:ff:ff:ff
    inet 10.10.10.35/24 brd 10.10.10.255 scope global enp0s8
        valid_lft forever preferred_lft forever
    inet6 fe80::3dc9:c205:6111:5d9a/64 scope link
        valid_lft forever preferred_lft forever
[root@localhost ~]# _
```



# PackStack

- install Linux
- Download PackStack
- **Configure answer.txt**
- Start the install
- working DevStack!

```
packstack --gen-answer-file=/root/answer.txt
```

```
yum install crudini;
```

```
crudini --set /root/answer.txt general CONFIG_SWIFT_INSTALL n;  
crudini --set /root/answer.txt general CONFIG_HEAT_INSTALL n;  
crudini --set /root/answer.txt general CONFIG_CEILOMETER_INSTALL n;  
crudini --set /root/answer.txt general CONFIG_AODH_INSTALL n;  
crudini --set /root/answer.txt general CONFIG_GNOCCHI_INSTALL n;  
crudini --set /root/answer.txt general CONFIG_NAGIOS_INSTALL n;  
crudini --set /root/answer.txt general CONFIG_KEYSTONE_ADMIN_PW  
jan01jan;  
crudini --set /root/answer.txt general CONFIG_PROVISION_DEMO n;
```

```
crudini --set /root/answer.txt general CONFIG_COMPUTE_HOSTS  
192.168.122.12;  
crudini --set /root/answer.txt general CONFIG_CONTROLLER_HOST  
192.168.122.21;
```

# PackStack

- install Linux
- Download PackStack
- Configure answer.txt
- **Start the install**
- working PackStack!

```
packstack --answer-file=/root/answer.txt  
=====
```

change the bridge setting

```
ifcfg-enp0s3  
=====  
NAME=enp0s3  
DEVICE=enp0s3  
ONBOOT=yes  
TYPE=OVSPort  
DEVICETYPE=ovs  
OVS_BRIDGE=br-ex
```

```
ifcfg-br-ex  
=====  
DEVICE=br-ex  
DEVICETYPE=ovs  
TYPE=OVSBridge  
BOOTPROTO=static  
IPADDR=192.168.2.36  
NETMASK=255.255.252.0  
GATEWAY=192.168.0.1
```

# PackStack

```
systemctl restart network
```

- install Linux
- Download PackStack
- Configure answer.txt
- Start the install
- **working PackStack!**

```
[root@packstack04 network-scripts]# getenforce
Enforcing
[root@packstack04 network-scripts]# systemctl status firewalld
• firewalld.service - firewalld - dynamic firewall daemon
  Loaded: loaded (/usr/lib/systemd/system/firewalld.service; disabled; vendor preset: enabled)
  Active: inactive (dead)
  Docs: man:firewalld(1)

Jul 17 23:23:26 packstack04 systemd[1]: Starting firewalld - dynamic firewall daemon...
Jul 17 23:23:26 packstack04 systemd[1]: Started firewalld - dynamic firewall daemon.
Jul 17 23:29:26 packstack04 systemd[1]: Stopping firewalld - dynamic firewall daemon...
Jul 17 23:29:27 packstack04 systemd[1]: Stopped firewalld - dynamic firewall daemon.
[root@packstack04 network-scripts]# systemctl status iptables
• iptables.service - IPv4 firewall with iptables
  Loaded: loaded (/usr/lib/systemd/system/iptables.service; enabled; vendor preset: disabled)
  Active: active (exited) since Mon 2017-07-17 23:29:29 EDT; 1h 23min ago
  Main PID: 3781 (code=exited, status=0/SUCCESS)
  CGroup: /system.slice/iptables.service

Jul 17 23:29:28 packstack04 systemd[1]: Starting IPv4 firewall with iptables...
Jul 17 23:29:29 packstack04 iptables.init[3781]: iptables: Applying firewall rules: [ OK ]
Jul 17 23:29:29 packstack04 systemd[1]: Started IPv4 firewall with iptables.
```

# openstack default check

- public network setting

```
[root@packstack04 ~]# grep extnet answer.txt
CONFIG_NEUTRON_OVS_BRIDGE_MAPPINGS=extnet:br-ex
# compute=br-vlan --os-neutron-ovs-bridge-mappings="extnet:br-
# bridge-mappings="extnet:br-ex,physnet1:br-vlan" --os-neutron-ovs-
# external-physnet="extnet"
CONFIG_NEUTRON_OVS_EXTERNAL_PHYSNET=extnet
[root@packstack04 ~]# _
```

The screenshot shows the OpenStack Admin web interface. On the left is a sidebar menu with categories: Project, Admin, System, Overview, Hypervisors, Host Aggregates, Instances, Volumes, Flavors, Images, Networks (highlighted), Routers, Floating IPs, Defaults, Metadata Definitions, System Information, and Identity. The main content area is titled 'Networks' and shows a table with columns: Project, Network Name, Subnets Associated, DHCP Agents, Shared, External, Status, Admin State, and Actions. The table is currently empty, displaying 'No items to display.' A 'Create Network' button is in the top right of the table area. A modal dialog box titled 'Create Network' is open in the foreground. It contains the following fields and options:

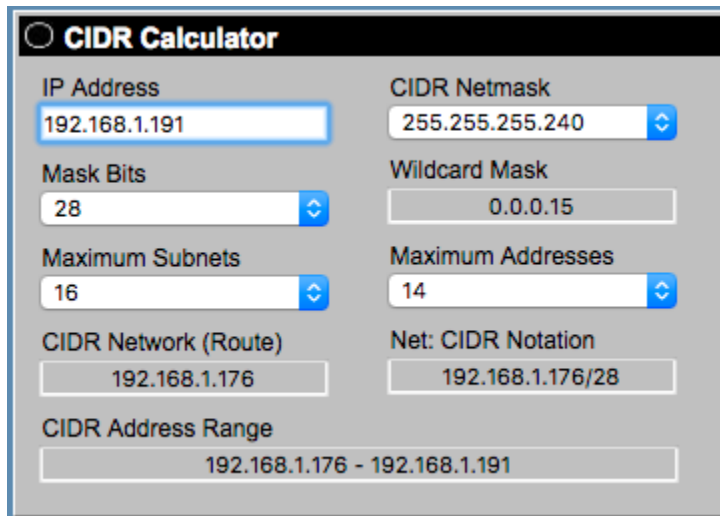
- Name:** A text input field containing 'public'.
- Project:** A dropdown menu showing 'admin'.
- Provider Network Type:** A dropdown menu showing 'Flat'.
- Physical Network:** A text input field containing 'extnet'.
- Admin State:** A dropdown menu showing 'UP'.
- Shared:** A checked checkbox.
- External Network:** A checked checkbox.

On the right side of the dialog, there is a 'Description:' section with explanatory text: 'Create a new network for any project as you need. Provider specified network can be created. You can specify a physical network type (like Flat, VLAN, GRE, and VXLAN) and its segmentation\_id or physical network name for a new virtual network. In addition, you can create an external network or a shared network by checking the corresponding checkbox.'

At the bottom right of the dialog are 'Cancel' and 'Submit' buttons.

# openstack default check

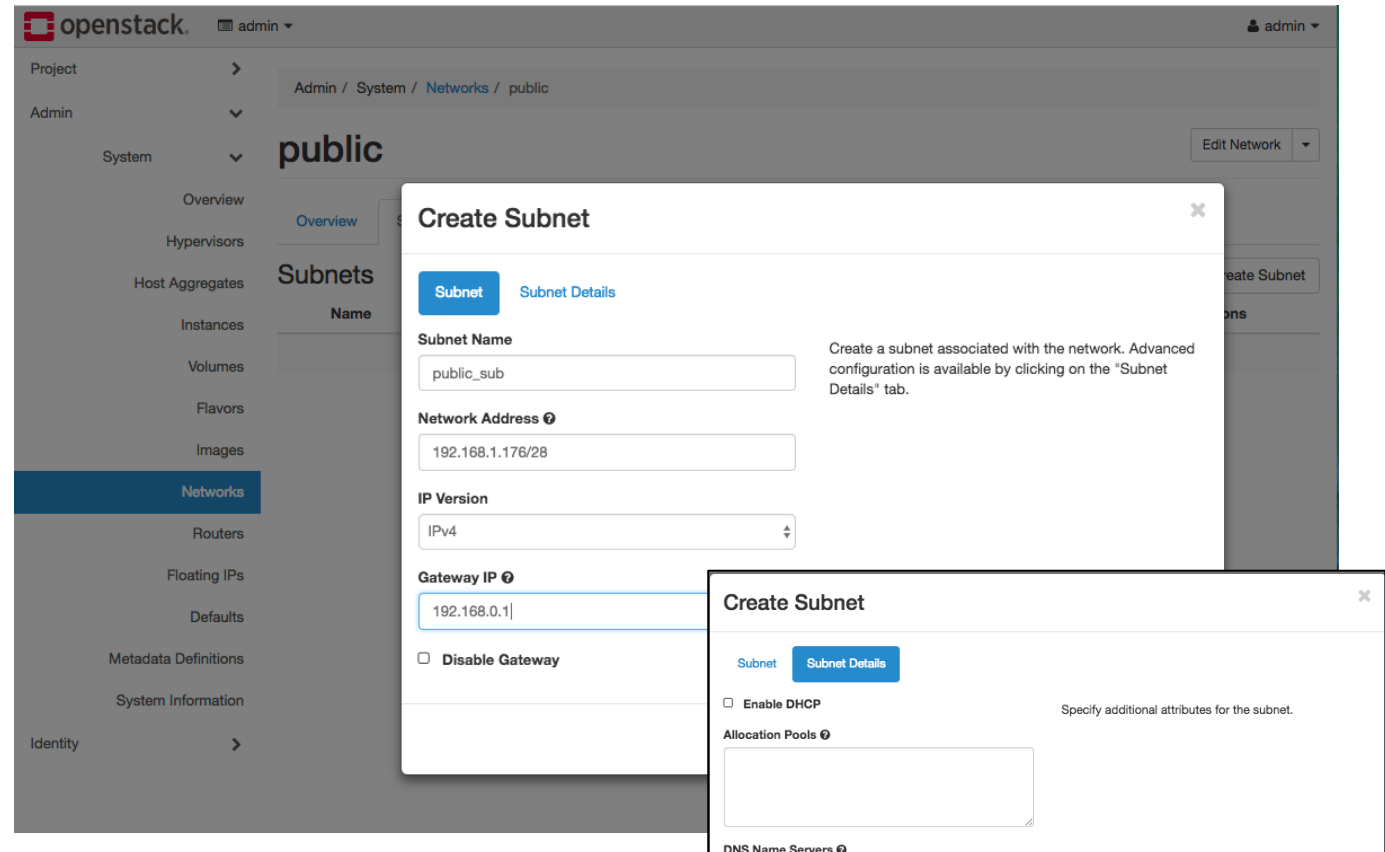
- public network setting
- public subnet setting
- 



**CIDR Calculator**

IP Address	CIDR Netmask
192.168.1.191	255.255.255.240
Mask Bits	Wildcard Mask
28	0.0.0.15
Maximum Subnets	Maximum Addresses
16	14
CIDR Network (Route)	Net: CIDR Notation
192.168.1.176	192.168.1.176/28
CIDR Address Range	
192.168.1.176 - 192.168.1.191	

<http://www.subnet-calculator.com/cidr.php>



openstack admin

Project Admin System Overview Hypervisors Host Aggregates Instances Volumes Flavors Images Networks Routers Floating IPs Defaults Metadata Definitions System Information Identity

Admin / System / Networks / public

**public**

Overview Subnets

**Create Subnet**

Subnet Subnet Details

Subnet Name: public\_sub

Network Address: 192.168.1.176/28

IP Version: IPv4

Gateway IP: 192.168.0.1

☐ Disable Gateway

Create a subnet associated with the network. Advanced configuration is available by clicking on the "Subnet Details" tab.

**Create Subnet**

Subnet Subnet Details

☐ Enable DHCP

Allocation Pools

Specify additional attributes for the subnet.

DNS Name Servers

# openstack default check

- public network setting
- public subnet setting
- private network setting

The screenshot displays the OpenStack Horizon interface for network management. The 'Create Network' dialog is open, showing the 'Subnet' tab. The 'Network' tab is also visible, showing the 'private' network configuration. The background shows the 'Networks' table with one entry: 'public' network with 'public\_sub' subnet.

Name	Subnets Associated	Shared	External	Status	Admin State	Actions
public	public_sub 192.168.1.176/28	Yes	Yes	Active	UP	Add Subnet

**Create Network**

**Network** Subnet Subnet Details

Network Name: private

Admin State: UP

☒ Shared

☒ Create Subnet

**Create Network**

Subnet Name: private\_sub

Network Address: 10.10.10.0/24

IP Version: IPv4

Gateway IP:

☐ Disable Gateway

☒ Enable DHCP

Allocation Pools:

DNS Name Servers:

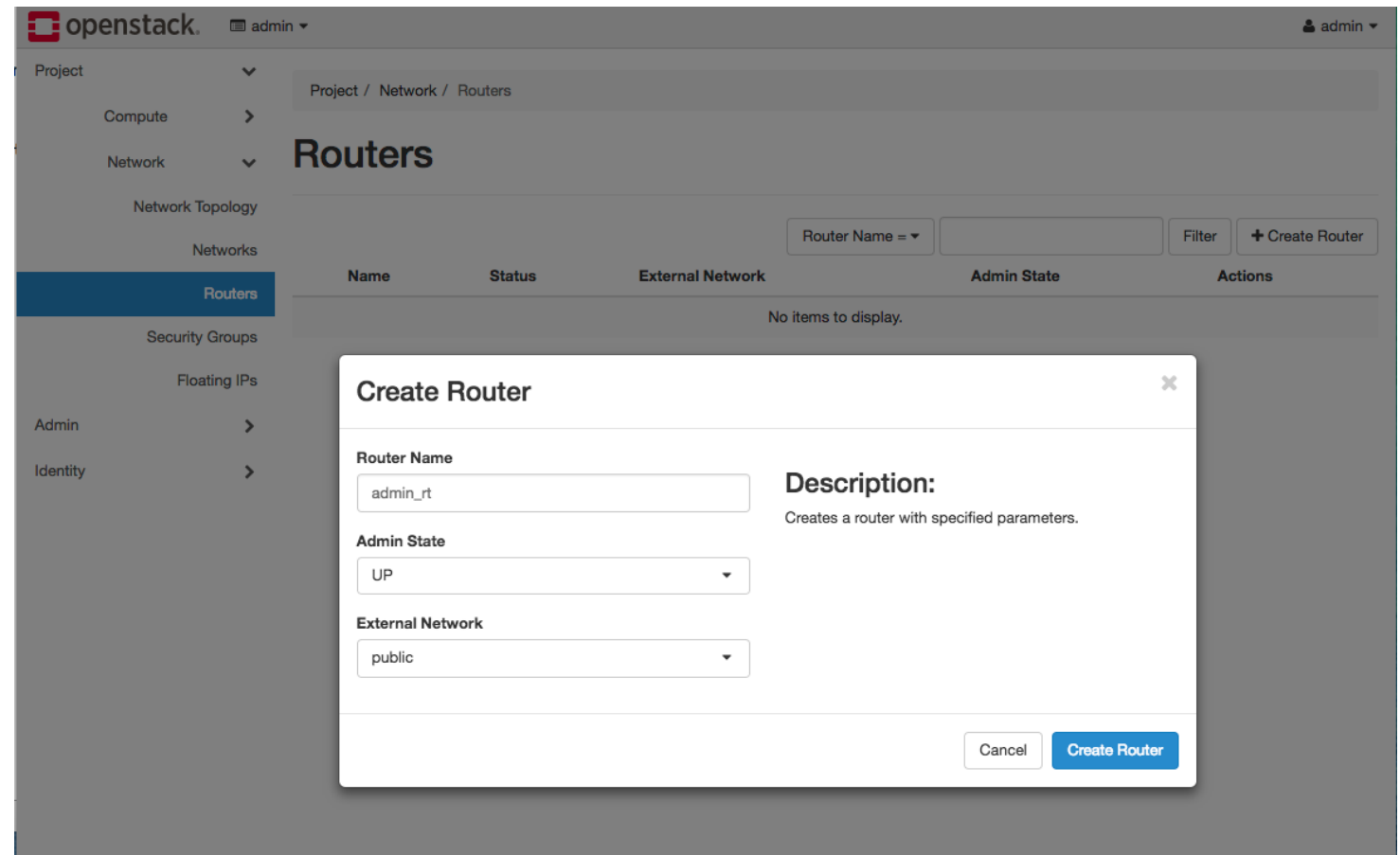
Host Routes:

Specify additional attributes for the subnet.

Cancel « Back Create

# openstack default check

- public network setting
- public subnet setting
- private network setting
- router setting



# openstack default check

- public network setting
- public subnet setting
- private network setting
- router setting

The screenshot shows the OpenStack Horizon interface for managing the 'admin\_rt' router. The 'Add Interface' modal is open, allowing the user to add a new interface to the router. The modal contains the following fields and information:

- Subnet \***: A dropdown menu showing 'private: 10.10.10.0/24 (private\_sub)'. A tooltip above the dropdown reads 'interface : 경계면, 접점, 공유 영역, 대화, 연락'.
- IP Address (optional) ?**: An empty text input field.
- Router Name \***: A text input field containing 'admin\_rt'.
- Router ID \***: A text input field containing 'b27fc5ab-05e2-4927-9d3e-ad65e3dd1f25'.
- Description:** A text block explaining that the user can connect a specified subnet to the router and that the default IP address is a gateway of the selected subnet.

At the bottom of the modal are 'Cancel' and 'Submit' buttons.



# openstack default check

- public network setting
- public subnet setting
- private network setting
- router setting
- security group setting

## Manage Security Group Rules: default (74e40dd8-614b-42ae-af03-5074c102648a)

+ Add Rule

Delete Rules

Displaying 7 items

<input type="checkbox"/>	Direction	Ether Type	IP Protocol	Port Range	Remote IP Prefix	Remote Security Group	Actions
<input type="checkbox"/>	Ingress	IPv6	Any	Any	-	default	<div>Delete Rule</div>
<input type="checkbox"/>	Egress	IPv6	Any	Any	::/0	-	<div>Delete Rule</div>
<input type="checkbox"/>	Ingress	IPv4	Any	Any	-	default	<div>Delete Rule</div>
<input type="checkbox"/>	Egress	IPv4	Any	Any	0.0.0.0/0	-	<div>Delete Rule</div>
<input type="checkbox"/>	Ingress	IPv4	ICMP	Any	0.0.0.0/0	-	<div>Delete Rule</div>
<input type="checkbox"/>	Ingress	IPv4	TCP	1 - 65535	0.0.0.0/0	-	<div>Delete Rule</div>
<input type="checkbox"/>	Ingress	IPv4	UDP	1 - 65535	0.0.0.0/0	-	<div>Delete Rule</div>

Displaying 7 items

## openstack default check

- public network setting
- public subnet setting
- private network setting
- router setting
- security group setting
- add compute node

```
[root@packstack04 ~]# egrep  
"EXCLUDE_SERVERS|COMPUTE" /root/answer.txt
```

```
EXCLUDE_SERVERS=192.168.2.60 # allinone node  
CONFIG_COMPUTE_HOSTS=192.168.2.60,192.168.2.61
```

```
[root@packstack04 packstack --answer-file=/root/answer.txt
```

change the bridge setting

```
ifcfg-enp0s3  
=====  
NAME=enp0s3  
DEVICE=enp0s3  
ONBOOT=yes  
TYPE=OVSPort  
DEVICETYPE=ovs  
OVS_BRIDGE=br-ex
```

```
ifcfg-br-ex  
=====  
DEVICE=br-ex  
DEVICETYPE=ovs  
TYPE=OVSBridge  
BOOTPROTO=static  
IPADDR=192.168.2.61  
NETMASK=255.255.252.0  
GATEWAY=192.168.0.1
```

Thank you.