# Configure Openstack to Boot Baremetal nodes Using Devstack

## Download and install OpenStack using DevStack:

1. git clone https://github.com/openstack-dev/devstack.git devstack
2. sudo ./devstack/tools/create-stack-user.sh
3. sudo su stack
4. cd ~
5. git clone https://github.com/openstack-dev/devstack.git devstack
6. cd Devstack
7. in Devstack, Create local.conf :

```
[[local|localrc]]
# Enable Ironic API and Ironic Conductor
enable_service ironic
enable_service ir-api
enable_service ir-cond
# Enable Neutron which is required by Ironic and disable nova-network.
disable_service n-net
disable_service n-novnc
enable_service q-dhcp
enable_service q-svc
enable_service q-agt
enable_service q-l3
enable_service q-meta
enable_service neutron

# Optional, to enable tempest configuration as part of devstack
disable_service tempest
disable_service heat h-api h-api-cfn h-api-cw h-eng
disable_service cinder c-sch c-api c-vol

ADMIN_PASSWORD=root
DATABASE_PASSWORD=$ADMIN_PASSWORD
RABBIT_PASSWORD=$ADMIN_PASSWORD
SERVICE_PASSWORD=$ADMIN_PASSWORD
SERVICE_TOKEN=$ADMIN_PASSWORD

HOST_IP=172.31.128.7

# Create 3 virtual machines to pose as Ironic's baremetal nodes.
IRONIC_VM_COUNT=3
IRONIC_VM_SSH_PORT=22
IRONIC_BAREMETAL_BASIC_OPS=True

# The parameters below represent the minimum possible values to create
# functional nodes.
IRONIC_VM_SPECS_RAM=1024
IRONIC_VM_SPECS_DISK=10

# Size of the ephemeral partition in GB. Use 0 for no ephemeral partition.
IRONIC_VM_EPHEMERAL_DISK=0
VIRT_DRIVER=ironic

# By default, DevStack creates a 10.0.0.0/24 network for instances.
# If this overlaps with the hosts network, you may adjust with the
# following.
NETWORK_GATEWAY=10.1.0.1
FIXED_RANGE=10.1.0.0/24
FIXED_NETWORK_SIZE=256

# Neutron OVS (flat)
Q_PLUGIN=ml2
Q_AGENT_EXTRA_OVS_OPTS=(network_vlan_ranges=physnet1)
OVS_VLAN_RANGE=physnet1
PHYSICAL_NETWORK=physnet1
OVS_PHYSICAL_BRIDGE=br-eth2

# Log all output to files
LOGFILE=$HOME/devstack.log
SCREEN_LOGDIR=$HOME/logs
IRONIC_VM_LOG_DIR=$HOME/ironic-bm-logs
```
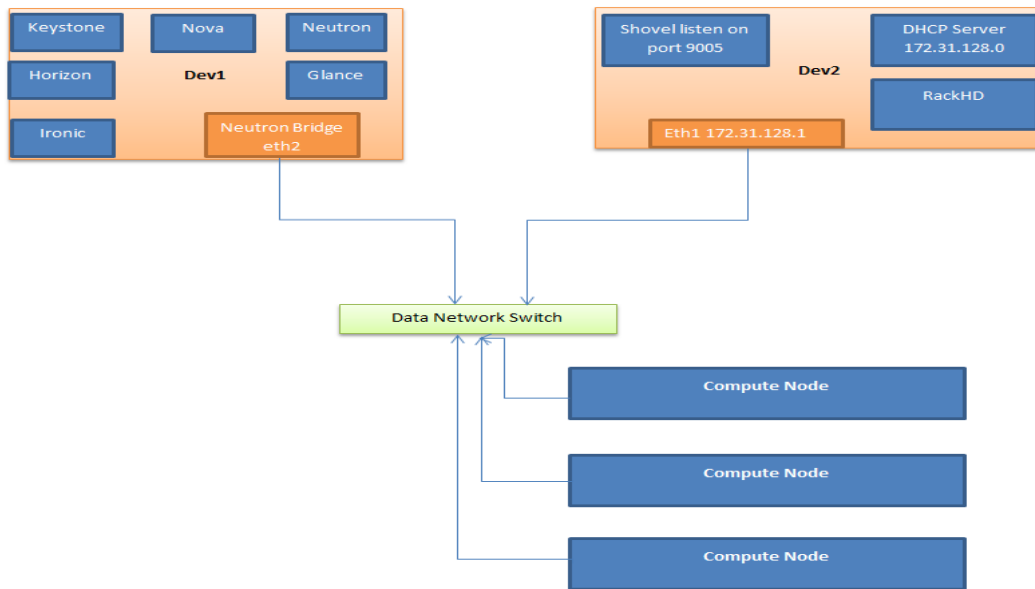
**8. Configure network Interface (assuming we used port eth2 to connect openstack to rackHD)**



Cat>>/etc/network/interfaces

```
auto eth2
iface eth2 inet static
address 172.31.128.7
netmask 255.255.255.0
```

**9. Restart network service**
sudo ifdown eth2
sudo ifup eth2

**10. Run ./stack.sh**

## Configure Neutron

Once the installation is completed, we can setup an external bridge for Neutron physical network

**1. Bind eth2 to the external bridge:**

ovs-vsctl add-port br-eth2 eth2

**2. *Enable external network access under nested Open vSwitch***

**ifconfig** br-eth2 promisc up

**3. Update external bridge configuration**(for this example, replace put_eth2_ip_here with 172.31.128.7)

```
vim /etc/network/interfaces

auto eth2
iface eth2 inet manual

auto br-eth2
iface br-eth2 inet static
    address 172.31.128.7
    netmask 255.255.255.0
```

**4. Restart network service**

```
sudo ifdown br-eth2
sudo ifup br-eth2
```

5. **Create Flat netwok**:
    a. Source ~/devstack/openrc  admin admin

    b. neutron net-create flat-provider-network --shared  --provider:network_type flat --provider:physical_network physnet1

    c. neutron subnet-create --name flat-provider-subnet --gateway <mark>172.31.128.7</mark> --dns-nameserver 172.31.128.254  --allocation-pool start=172.31.128.100,end=172.31.128.150  flat-provider-network 172.31.128.0/24

# Spawn an instance using nova service

1. **Login the horizon interface** (user:admin,password:root)
2. **Use horizon to create new instances**