## OpenStack Components On Multi Nodes

We install openstack on multimode with an architecture which has a single controller node and multiple compute nodes.

|  |  |
| --- | --- |
| Control Node | Compute Node |
| Keystone  Glance  Cinder  Horizon  Neutron   * Neutron Server   Nova   * Nova novncproxy * Novnc * Nova api * Nova scheduler * Nova conductor | Nova   * Nova Compute   Neutron   * Neutron Openvswitch Agent |



**Configure multiple Compute nodes**

To distribute your VM load across more than one server, you can connect an additional nova-compute node to a cloud controller node. You can reproduce this cd ../configuration on multiple compute servers to build a true multi-node OpenStack Compute cluster.

To build and scale the Compute platform, you distribute services across many servers. For a multi-node installation, you make changes to only the nova.conf file and copy it to additional compute nodes. Ensure that each nova.conf file points to the correct IP addresses for the respective services.

# Control Node

**Network Configuration**

The control node has two Network Interfaces: One with network connectivity (eth0), and another internal network for Management use.

# vi /etc/network/interfaces

#External Network

auto eth0

iface eth0 inet static

address 192.168.47.200

netmask 255.255.255.0

gateway 192.168. 47.2

#Management Network

auto eth1

iface eth1 inet static

address 10.0.0.10

netmask 255.255.255.0

gateway 10.0.0.2

For VM in VMPlayer we use

$ **sudo** **vim** **/**etc**/**network**/**interfaces

*# This file describes the network interfaces available on your system*

*# and how to activate them. For more information, see interfaces(5)*

*# The loopback network interface*

auto lo

iface lo inet loopback

*# The primary network interface*

auto eth0

iface eth0 inet static

address 192.168.47.200

netmask 255.255.255.0

broadcast 192.168.47.255

gateway 192.168.47.2

dns-nameservers 192.168.47.2

**Configure Cluster Controller**

The cluster controller runs all OpenStack services. Configure the cluster controller’s DevStack in local.conf:

[[local|localrc]]

HOST\_IP=192.168.47.200

FLAT\_INTERFACE=eth0

FIXED\_RANGE=10.4.128.0/20

FIXED\_NETWORK\_SIZE=4096

FLOATING\_RANGE=192.168.47.128/25

MULTI\_HOST=1

LOGFILE=/opt/stack/logs/stack.sh.log

ADMIN\_PASSWORD=labstack

MYSQL\_PASSWORD=supersecret

RABBIT\_PASSWORD=supersecrete

SERVICE\_PASSWORD=supersecrete

SERVICE\_TOKEN=xyzpdqlazydog

**Install MySQL server**

OpenStack services require a database to store information. We will use MySQL as database back-end.

# apt-get install python-mysqldb mysql-server

When we need to add additional nodes, such as compute nodes or storage nodes, MySQL should start on all the interfaces, as the default is only for localhost.

**Install Messaging server**

OpenStack requires a messaging/broker service to communicate between its services. We will use RabbitMQ.

# apt-get install rabbitmq-server

# Control Node

**Network Configuration**

# vi /etc/network/interfaces

#Management Network

auto eth0

iface eth0 inet static

address 10.0.0.20

netmask 255.255.255.0

gateway 10.0.0.1

#Data Network

auto eth1

iface eth1 inet static

address 11.0.0.20

netmask 255.255.255.0

gateway 11.0.0.1

**Configure Compute Nodes**

The compute nodes only run the OpenStack worker services. For additional machines, create a local.conf with:

[[local|localrc]]

HOST\_IP=192.168.47.201 # change this per compute node

FLAT\_INTERFACE=eth0

FIXED\_RANGE=10.4.128.0/20

FIXED\_NETWORK\_SIZE=4096

FLOATING\_RANGE=192.168.47.128/25

MULTI\_HOST=1

LOGFILE=/opt/stack/logs/stack.sh.log

ADMIN\_PASSWORD=labstack

MYSQL\_PASSWORD=supersecret

RABBIT\_PASSWORD=supersecrete

SERVICE\_PASSWORD=supersecrete

SERVICE\_TOKEN=xyzpdqlazydog

DATABASE\_TYPE=mysql

SERVICE\_HOST=192.168.47.201

MYSQL\_HOST=192.168.47.201

RABBIT\_HOST=192.168.47.201

GLANCE\_HOSTPORT=192.168.47.201:9292

ENABLED\_SERVICES=n-cpu,n-net,n-api,c-sch,c-api,c-vol

NOVA\_VNC\_ENABLED=True

NOVNCPROXY\_URL="http://192.168.47.201:6080/vnc\_auto.html"

VNCSERVER\_LISTEN=$HOST\_IP

VNCSERVER\_PROXYCLIENT\_ADDRESS=$VNCSERVER\_LISTEN

**Install MySQL python library**

On compute nodes we only need to install MySQL client and MySQL Python library.

# apt-get install python-mysqldb