**Configuring Multiple Compute Nodes**

Goal is to split VM load across more than one server by connecting an additional nova-compute node to a cloud controller node. This configuring can be reproduced on multiple compute servers to start building a true multi-node Compute cluster.To build out and scale the Compute platform, it spread out services amongst many servers. While there are additional ways to accomplish the build-out, this section describes adding compute nodes, and the service we are scaling out is called 'nova-compute.'

For a multi-node install we have to only make changes to nova.conf and copy it to additional compute nodes. Ensure each nova.conf file points to the correct IP addresses for the respective services. Customize the nova.conf example below to match your environment.

Configuring your Compute installation involves many configuration files - the nova.conf file, the api-paste.ini file, and related Image and Identity management configuration files.When running in a high-availability mode for networking, the compute node is where you configure the compute network, the networking between your instances. Learn more about high-availability for networking in the Compute Administration manual.Because you may need to query the database from the compute node and learn more information about instances, the nova client and MySQL client or PostgresSQL client packages should be installed on any additional compute nodes.

Copy the nova.conf from your controller node to all additional compute nodes. Modify the following configuration options so that they match the IP address of the compute host:

* my\_ip
* vncserver\_listen
* vncserver\_proxyclient\_address

Restart networking:

/etc/init.d/networking restart

With nova.conf updated and networking set, configuration is nearly complete. First, bounce the relevant services to take the latest updates:

restart libvirt-bin; service nova-compute restart

To avoid issues with KVM and permissions with Nova, run the following commands to ensure we have VM's that are running optimally:

chgrp kvm /dev/kvm

chmod g+rwx /dev/kvm

If you want to use the 10.04 Ubuntu Enterprise Cloud images that are readily available at http://uec-images.ubuntu.com/releases/10.04/release/, you may run into delays with booting. Any server that does not have nova-api running on it needs this iptables entry so that UEC images can get metadata info. On compute nodes, configure the iptables with this next step:

# iptables -t nat -A PREROUTING -d 169.254.169.254/32 -p tcp -m tcp --dport 80 -j DNAT --to-destination $NOVA\_API\_IP:8773

Lastly, confirm that your compute node is talking to your cloud controller. From the cloud controller, run this database query:

mysql -u$MYSQL\_USER -p$MYSQL\_PASS nova -e 'select \* from services;'

In return, you should see something similar to this:

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| created\_at | updated\_at | deleted\_at | deleted | id | host | binary | topic | report\_count | disabled | availability\_zone |

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| 2013-01-28 22:52:46 | 2013-02-03 06:55:48 | NULL | 0 | 1 | osdemo02 | nova-network | network | 46064 | 0 | nova |

| 2013-01-28 22:52:48 | 2013-02-03 06:55:57 | NULL | 0 | 2 | osdemo02 | nova-compute | compute | 46056 | 0 | nova |

| 2013-01-28 22:52:52 | 2013-02-03 06:55:50 | NULL | 0 | 3 | osdemo02 | nova-scheduler | scheduler | 46065 | 0 | nova |

| 2013-01-29 23:49:29 | 2013-02-03 06:54:26 | NULL | 0 | 4 | osdemo01 | nova-compute | compute | 37050 | 0 | nova |

| 2013-01-30 23:42:24 | 2013-02-03 06:55:44 | NULL | 0 | 9 | osdemo04 | nova-compute | compute | 28484 | 0 | nova |

| 2013-01-30 21:27:28 | 2013-02-03 06:54:23 | NULL | 0 | 8 | osdemo05 | nova-compute | compute | 29284 | 0 | nova |

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