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Nova Software install

Base Node

```
mysql -uroot -proot

CREATE DATABASE nova_api;
CREATE DATABASE nova;
CREATE DATABASE nova_cell0;

GRANT ALL PRIVILEGES ON nova_api.*      TO 'nova'@'localhost' IDENTIFIED BY 'NOVA_DBPASS';
GRANT ALL PRIVILEGES ON nova_api.*      TO 'nova'@'%'          IDENTIFIED BY 'NOVA_DBPASS';
GRANT ALL PRIVILEGES ON nova.*         TO 'nova'@'localhost' IDENTIFIED BY 'NOVA_DBPASS';
GRANT ALL PRIVILEGES ON nova.*         TO 'nova'@'%'          IDENTIFIED BY 'NOVA_DBPASS';
GRANT ALL PRIVILEGES ON nova_cell0.*   TO 'nova'@'localhost' IDENTIFIED BY 'NOVA_DBPASS';
GRANT ALL PRIVILEGES ON nova_cell0.*   TO 'nova'@'%'          IDENTIFIED BY 'NOVA_DBPASS';

SELECT DISTINCT CONCAT('User: ''',user,'''@'',host,''';') AS query FROM mysql.user;
```

Ctrl Node

```
. admin-openrc
```

```
openstack user create --domain default --password NOVA_PASS nova
openstack role add --project service --user nova admin
openstack service create --name nova --description "OpenStack Compute" compute

openstack endpoint create --region RegionOne compute public    http://ctrl.blue.ed
u:8774/v2.1
openstack endpoint create --region RegionOne compute internal http://ctrl.blue.ed
u:8774/v2.1
openstack endpoint create --region RegionOne compute admin      http://ctrl.blue.ed
u:8774/v2.1

openstack user create --domain default --password PLACEMENT_PASS placement
openstack role add --project service --user placement admin
openstack service create --name placement --description "Placement API" placement

openstack endpoint create --region RegionOne placement public   http://ctrl.blue.e
du:8778
openstack endpoint create --region RegionOne placement internal http://ctrl.blue.e
du:8778
openstack endpoint create --region RegionOne placement admin    http://ctrl.blue.e
du:8778
```

```
yum install \
openstack-nova-api \
openstack-nova-conductor \
openstack-nova-console \
openstack-nova-novncproxy \
openstack-nova-scheduler \
openstack-nova-placement-api
```

```
/etc/nova/nova.conf

[DEFAULT]
enabled_apis = osapi_compute,metadata

[api_database]
connection = mysql+pymysql://nova:NOVA_DBPASS@base.blue.edu/nova_api
[database]
connection = mysql+pymysql://nova:NOVA_DBPASS@base.blue.edu/nova

[DEFAULT]
transport_url = rabbit://openstack:RABBIT_PASS@base.blue.edu

[api]
auth_strategy = keystone
[keystone_auth_token]
auth_uri = http://ctrl.blue.edu:5000
auth_url = http://ctrl.blue.edu:35357
memcached_servers = base.blue.edu:11211
auth_type = password
project_domain_name = default
user_domain_name = default
project_name = service
username = nova
password = NOVA_PASS

[DEFAULT]
my_ip = 192.168.1.91

[DEFAULT]
use_neutron = True
firewall_driver = nova.virt.firewall.NoopFirewallDriver

[vnc]
enabled = true
vncserver_listen = $my_ip
vncserver_proxyclient_address = $my_ip

[glance]
api_servers = http://ctrl.blue.edu:9292

[oslo_concurrency]
lock_path = /var/lib/nova/tmp

[placement]
os_region_name = RegionOne
project_domain_name = Default
project_name = service
auth_type = password
user_domain_name = Default
auth_url = http://ctrl.blue.edu:35357/v3
username = placement
password = PLACEMENT_PASS
```

```
cp /etc/nova/nova.conf /etc/nova/nova.conf.ds.bak
cat /etc/nova/nova.conf.ds.bak | grep -v ^# | uniq > /etc/nova.conf

sed -i '/^\[DEFAULT\]$/a\enabled_apis = osapi_compute,metadata\ntransport_url = ra
bbit://openstack:RABBIT_PASS@base.blue.edu\nmy_ip = 192.168.1.91\nuse_neutron = Tr
ue\nfirewall_driver = nova.virt.firewall.NoopFirewallDriver\n' /etc/nova.conf
sed -i '/\[api_database\]$/a\connection = mysql+pymysql://nova:NOVA_DBPASS@base.b
lue.edu/nova_api' /etc/nova/nova.conf
sed -i '/\[database\]$/a\connection = mysql+pymysql://nova:NOVA_DBPASS@base.blue.
edu/nova' /etc/nova/nova.conf
sed -i '/\[api\]$/a\auth_strategy = keystone\n' /etc/nova/nova.conf
sed -i '/\[keystone_auth_token\]$/a\auth_uri = http://ctrl.blue.edu:5000\nauth_ur
l = http://ctrl.blue.edu:35357\nmemcached_servers = base.blue.edu:11211\nauth_typ
e = password\nproject_domain_name = default\nuser_domain_name = default\nproject_n
ame = service\nusername = nova\npassword = NOVA_PASS\n' /etc/nova/nova.conf
sed -i '/\[vnc\]$/a\enabled = true\nvncserver_listen = $my_ip\nvncserver_proxyc
lient_address = $my_ip\n' /etc/nova/nova.conf
sed -i '/\[glance\]$/a\api_servers = http://ctrl.blue.edu:9292\n' /etc/nova/nova.
conf
sed -i '/\[oslo_concurrency\]$/a\lock_path = /var/lib/nova/tmp\n' /etc/nova/nova.
conf
sed -i '/\[placement\]$/a\os_region_name = RegionOne\nproject_domain_name = Defau
lt\nproject_name = service\nauth_type = password\nuser_domain_name = Default\nauth_
url = http://ctrl.blue.edu:35357/v3\nusername = placement\npassword = PLACEMENT_P
ASS\n' /etc/nova/nova.conf
```

```
/etc/httpd/conf.d/00-nova-placement-api.conf

<Directory /usr/bin>
  <IfVersion >= 2.4>
    Require all granted
  </IfVersion>
  <IfVersion < 2.4>
    Order allow,deny
    Allow from all
  </IfVersion>
</Directory>
```

```
cp /etc/httpd/conf.d/00-nova-placement-api.conf /etc/httpd/conf.d/00-nova-placemen
t-api.conf.ds.bak

echo -e "\n\n<Directory /usr/bin>\n  <IfVersion >= 2.4>\n    Require all granted
\n  </IfVersion>\n  <IfVersion < 2.4>\n    Order allow,deny\n    Allow from all
\n  </IfVersion>\n</Directory>\n" >> /etc/httpd/conf.d/00-nova-placement-api.conf
```

```
su -s /bin/sh -c "nova-manage api_db sync" nova
su -s /bin/sh -c "nova-manage cell_v2 map_cell0" nova
su -s /bin/sh -c "nova-manage cell_v2 create_cell --name=cell1 --verbose" nova
su -s /bin/sh -c "nova-manage db sync" nova
```

```
nova-manage cell_v2 list_cells
```

```
systemctl enable \
openstack-nova-api.service \
openstack-nova-consoleauth.service \
openstack-nova-scheduler.service \
openstack-nova-conductor.service \
openstack-nova-novncproxy.service
```

```
systemctl restart \
openstack-nova-api.service \
openstack-nova-consoleauth.service \
openstack-nova-scheduler.service \
openstack-nova-conductor.service \
openstack-nova-novncproxy.service
```

computer Node

```
nmcli general hostname com1.blue.edu

nmcli connection modify eth0 ipv4.addresses 192.168.1.92/24 ipv4.gateway 192.168.1.1 ipv4.dns "192.168.1.90 119.29.29.29" autoconnect yes ipv4.method manual ipv6.method ignore

nmcli connection modify eth1 autoconnect no ipv6.method ignore
```

```
yum install qemu-kvm* virt-* libvirt*
lsmod | grep kvm
systemctl enable libvirtd
systemctl restart libvirtd
```

```
vim /etc/sysconfig/network-scripts/ifcfg-eth1

TYPE=Ethernet
BOOTPROTO=none
NAME=eth1
UUID=b29bc655-ddcb-402a-bdec-ab4711cda640
DEVICE=eth1
ONBOOT=yes
```

```
yum install openstack-nova-compute
```

```
/etc/nova/nova.conf
```

```
[DEFAULT]
enabled_apis = osapi_compute,metadata

[DEFAULT]
transport_url = rabbit://openstack:RABBIT_PASS@base.blue.edu

[api]
auth_strategy = keystone

[keystone_authhtoken]
auth_uri = http://ctrl.blue.edu:5000
auth_url = http://ctrl.blue.edu:35357
memcached_servers = base.blue.edu:11211
auth_type = password
project_domain_name = default
user_domain_name = default
project_name = service
username = nova
password = NOVA_PASS

[DEFAULT]
my_ip = 192.168.1.92

[DEFAULT]
use_neutron = True
firewall_driver = nova.virt.firewall.NoopFirewallDriver

[vnc]
enabled = True
vncserver_listen = 0.0.0.0
vncserver_proxyclient_address = $my_ip
novncproxy_base_url = http://ctrl.blue.edu:6080/vnc_auto.html

[glance]
api_servers = http://ctrl.blue.edu:9292

[oslo_concurrency]
lock_path = /var/lib/nova/tmp

[placement]
os_region_name = RegionOne
project_domain_name = Default
project_name = service
auth_type = password
user_domain_name = Default
auth_url = http://ctrl.blue.edu:35357/v3
username = placement
password = PLACEMENT_PASS
```

```
cp /etc/nova/nova.conf /etc/nova/nova.conf.ds.bak
cat /etc/nova/nova.conf.ds.bak | grep -v ^# | uniq > /etc/nova/nova.conf

sed -i '/^\[DEFAULT\]$/a\enabled_apis = osapi_compute,metadata\ntransport_url = ra
bbit://openstack:RABBIT_PASS@base.blue.edu\nmy_ip = 192.168.1.92\nuse_neutron = Tr
ue\nfirewall_driver = nova.virt.firewall.NoopFirewallDriver\n' /etc/nova/nova.conf
sed -i '/^\[database\]$/a\connection = mysql+pymysql://nova:NOVA_DBPASS@base.blue.
edu/nova' /etc/nova/nova.conf
sed -i '/^\[api\]$/a\auth_strategy = keystone\n' /etc/nova/nova.conf
sed -i '/^\[keystone_authtoken\]$/a\auth_uri = http://ctrl.blue.edu:5000\nauth_ur
l = http://ctrl.blue.edu:35357\nmemcached_servers = base.blue.edu:11211\nauth_typ
e = password\nproject_domain_name = default\nuser_domain_name = default\nproject_n
ame = service\nusername = nova\npassword = NOVA_PASS\n' /etc/nova/nova.conf
sed -i '/^\[vnc\]$/a\enabled = true\nvncserver_listen = 0.0.0.0\nvncserver_proxycl
ient_address = $my_ip\nnovncproxy_base_url = http://ctrl.blue.edu:6080/vnc_auto.ht
ml\n' /etc/nova/nova.conf
sed -i '/^\[glance\]$/a\api_servers = http://ctrl.blue.edu:9292\n' /etc/nova/nova.
conf
sed -i '/^\[oslo_concurrency\]$/a\lock_path = /var/lib/nova/tmp\n' /etc/nova/nova.
conf
sed -i '/^\[placement\]$/a\os_region_name = RegionOne\nproject_domain_name = Defau
lt\nproject_name = service\nauth_type = password\nuser_domain_name = Default\nauth_
url = http://ctrl.blue.edu:35357/v3\nusername = placement\npassword = PLACEMENT_P
ASS\n' /etc/nova/nova.conf
```

和控制节点差别

```
[DEFAULT]
my_ip = 192.168.1.92

[vnc]
vncserver_listen = 0.0.0.0
novncproxy_base_url = http://ctrl.blue.edu:6080/vnc_auto.html

[api_database]
connection = mysql+pymysql://nova:NOVA_DBPASS@base.blue.edu/nova_api

[database]
connection = mysql+pymysql://nova:NOVA_DBPASS@base.blue.edu/nova
```

```
egrep -c '(vmx|svm)' /proc/cpuinfo
```

```
[libvirt]
virt_type = qemu
```

```
systemctl enable libvirtd.service openstack-nova-compute.service
systemctl restart libvirtd.service openstack-nova-compute.service
```

```
. admin-openrc
openstack hypervisor list
su -s /bin/sh -c "nova-manage cell_v2 discover_hosts --verbose" nova
openstack compute service list
openstack catalog list
openstack image list
```