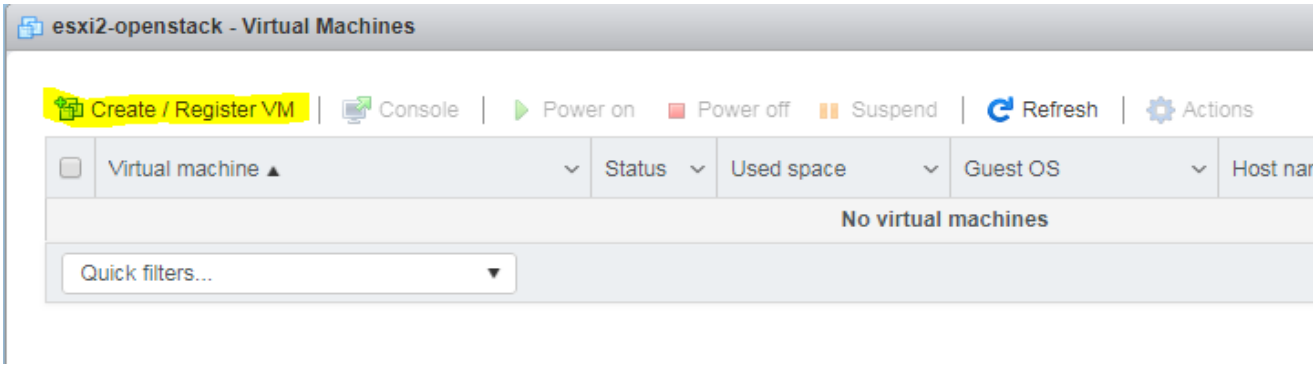
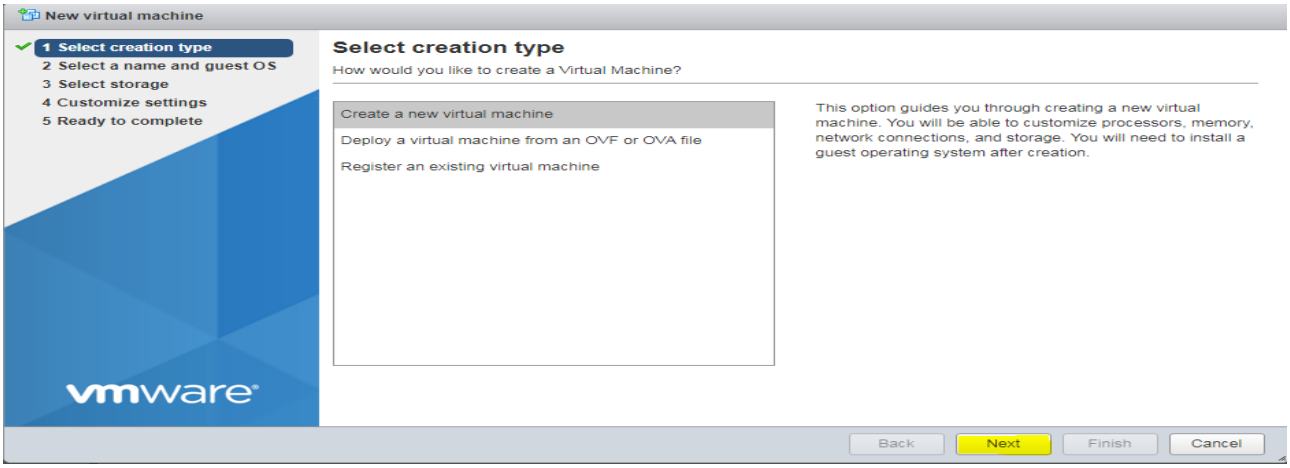
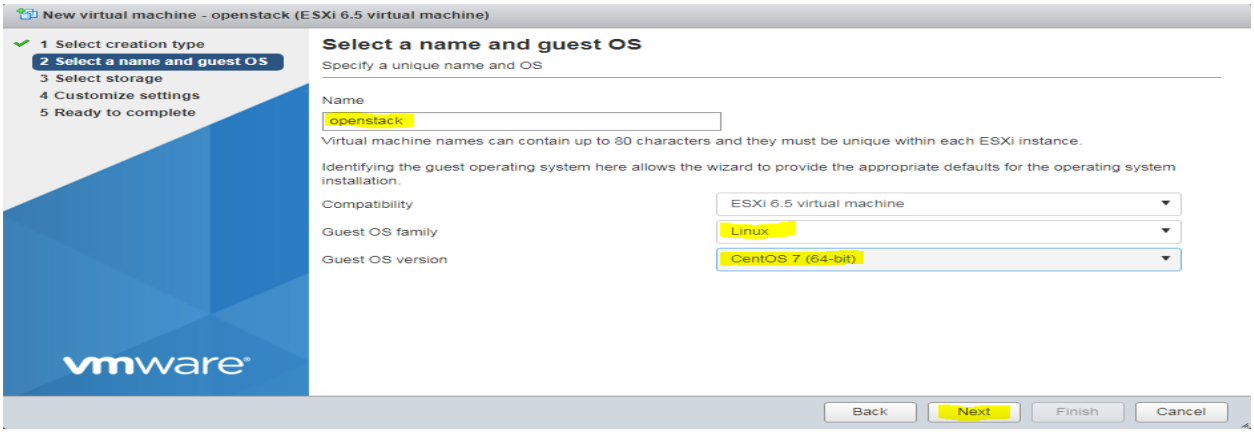
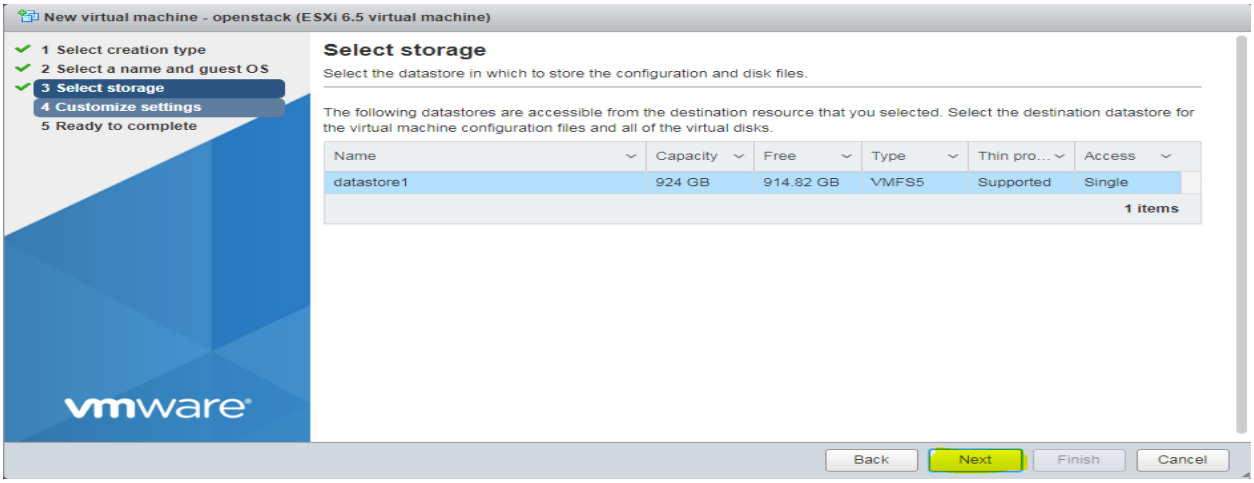
OpenStack Installation on CentOS 7 using VMware ESXI 6.5.0 hypervisor

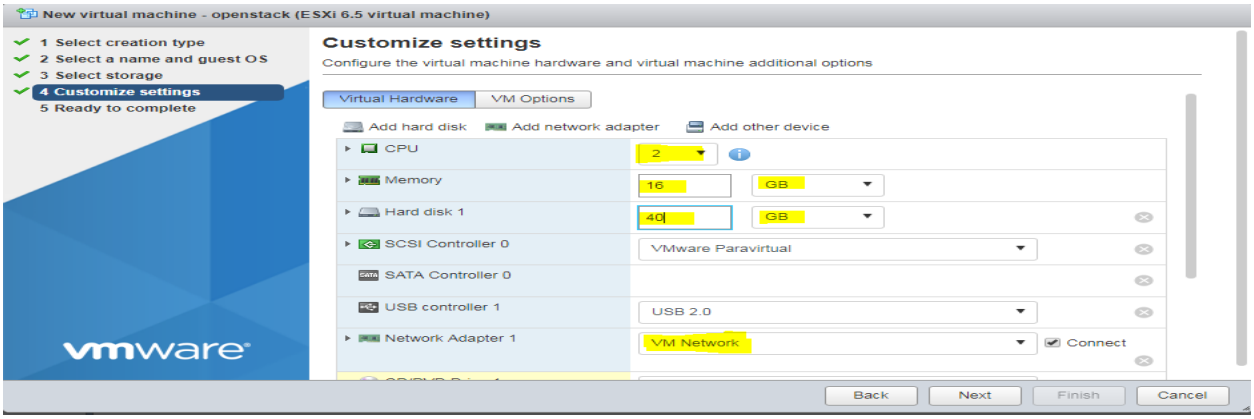
1. **Create a Virtual Machine with CENTOS 7 as a guest operating system on Vmware Hypervisor 1 (10.25.96.122)**



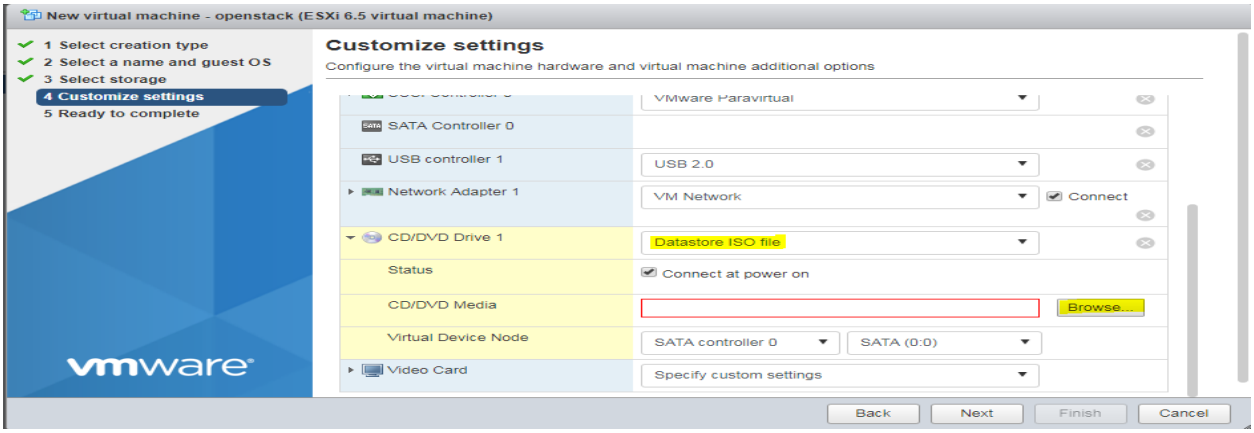


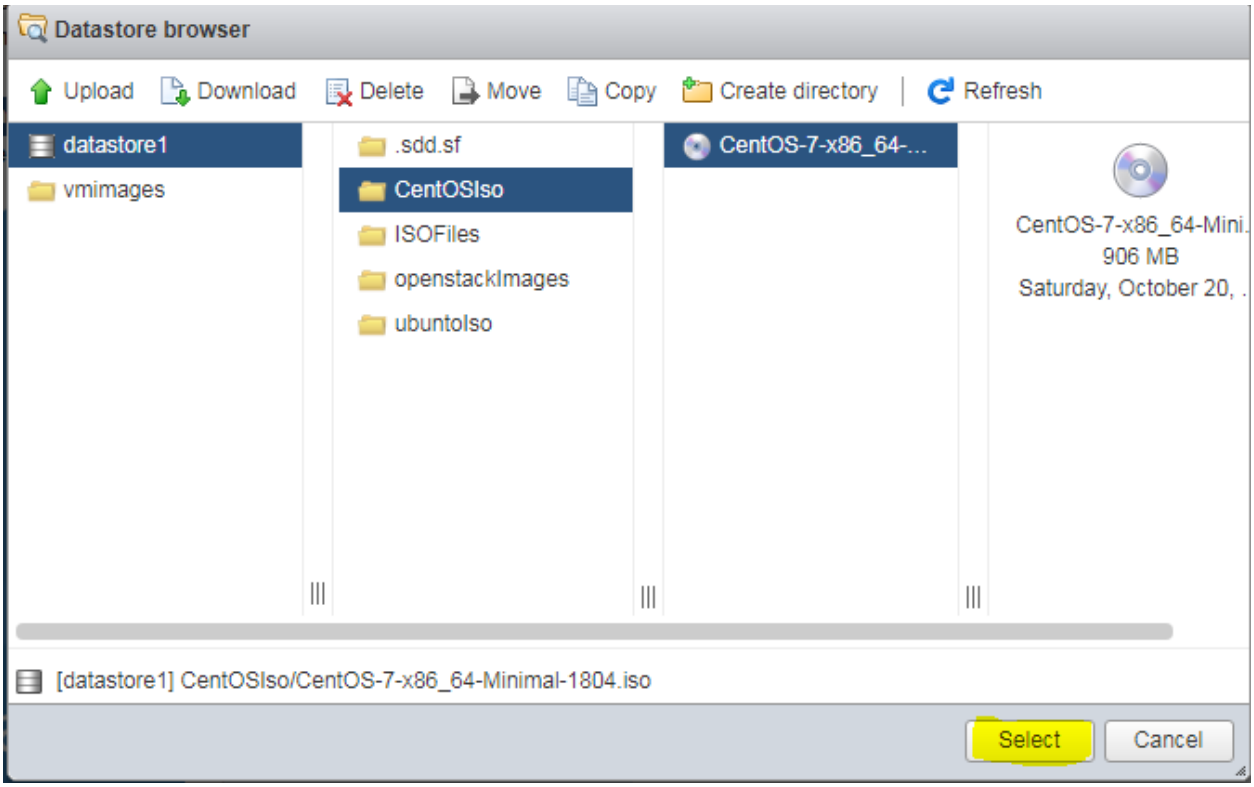


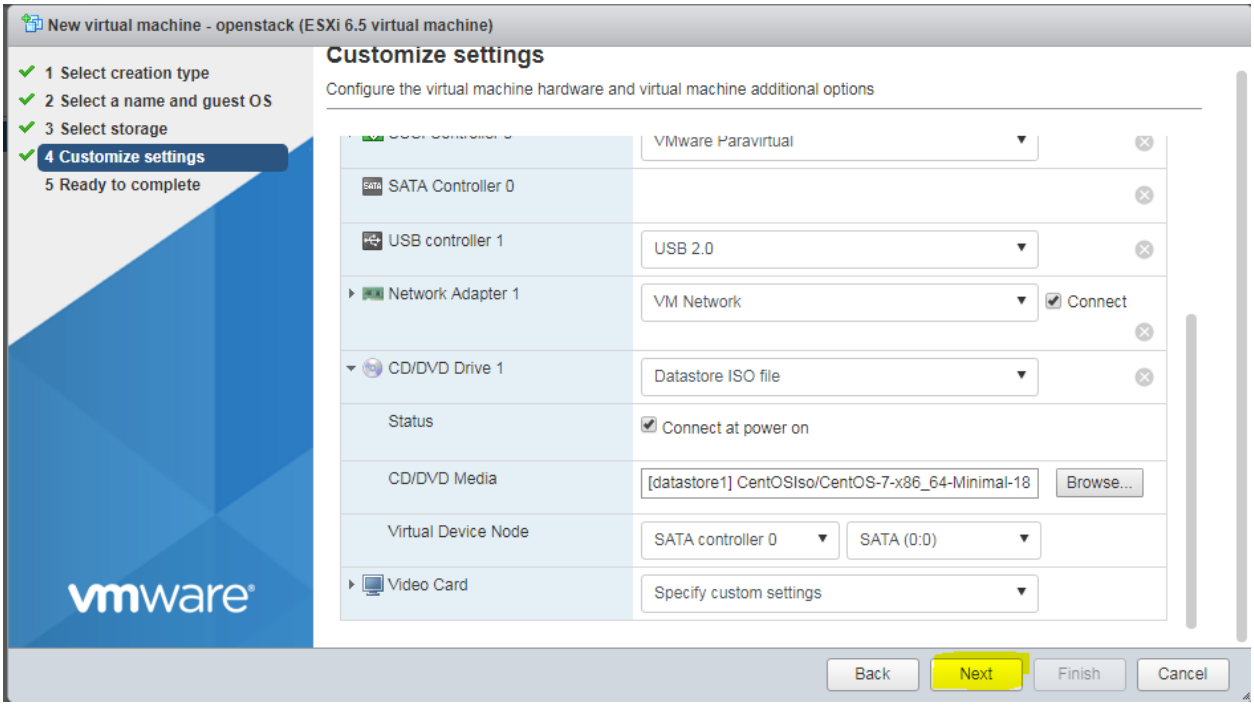


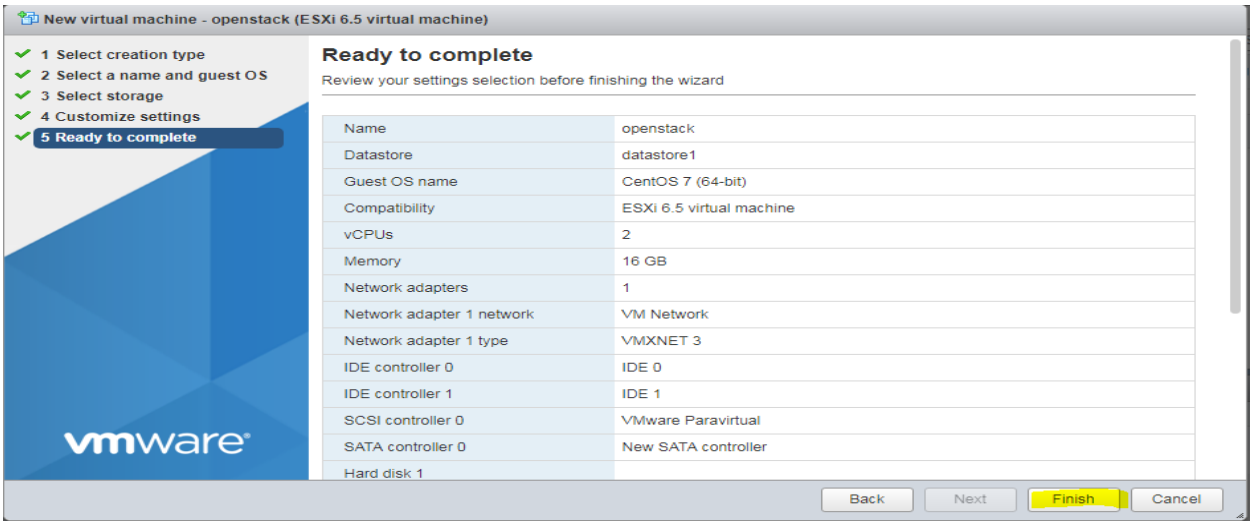


Attach centOS 7 iso file.

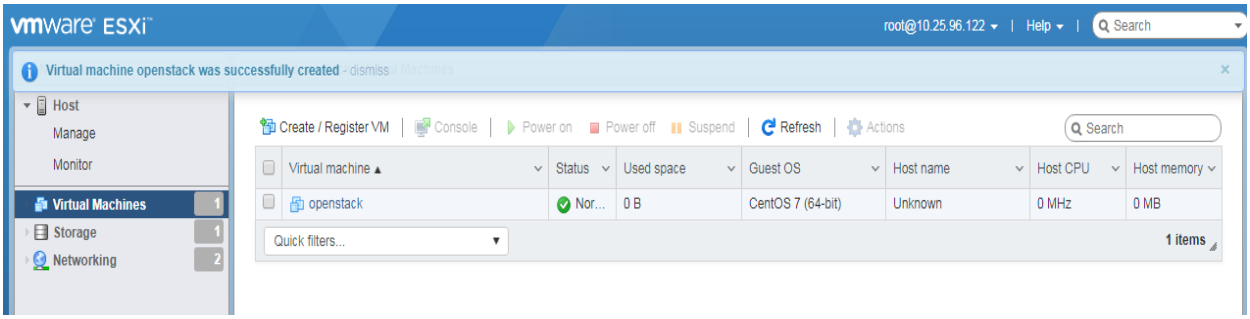



Datastore browser
Upload
Download
Delete
Move
Copy
Create directory
Refresh
datastore1
vmimages
.sdd.sf
CentOSIso
ISOFiles
openstackImages
ubuntoIso
CentOS-7-x86_64-...
CentOS-7-x86_64-Mini.
906 MB
Saturday, October 20, .
[datastore1] CentOSIso/CentOS-7-x86_64-Minimal-1804.iso
Select
Cancel

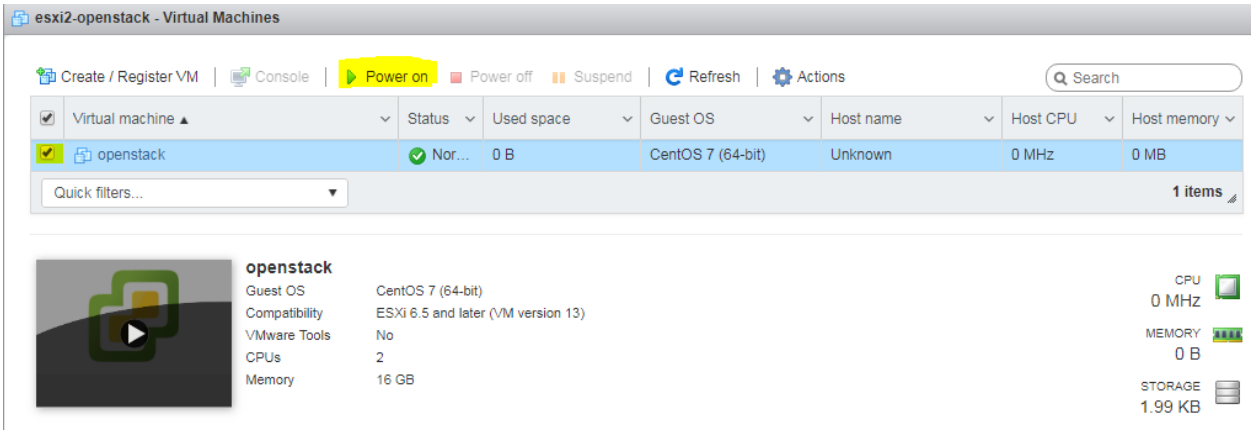

New virtual machine - openstack (ESXi 6.5 virtual machine)
1 Select creation type
2 Select a name and guest OS
3 Select storage
4 Customize settings
5 Ready to complete
Customize settings
Configure the virtual machine hardware and virtual machine additional options
VMware Paravirtual
SATA Controller 0
USB controller 1
USB 2.0
Network Adapter 1
VM Network
Connect
CD/DVD Drive 1
Datastore ISO file
Status
Connect at power on
CD/DVD Media
[datastore1] CentOSIso/CentOS-7-x86_64-Minimal-18
Browse...
Virtual Device Node
SATA controller 0
SATA (0:0)
Video Card
Specify custom settings
vmware
Back
Next
Finish
Cancel



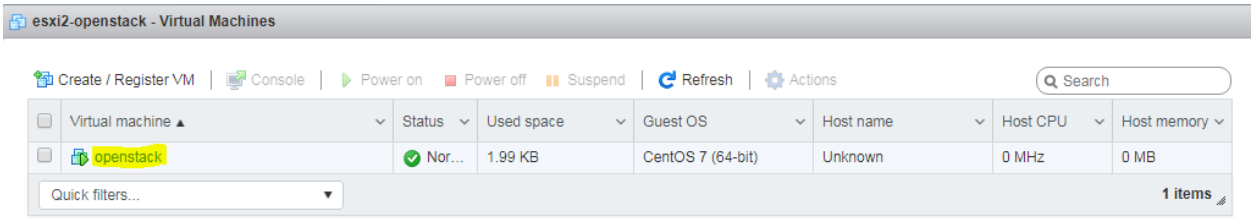
Virtual Machine (openstack is the name of VM)installed successfully.



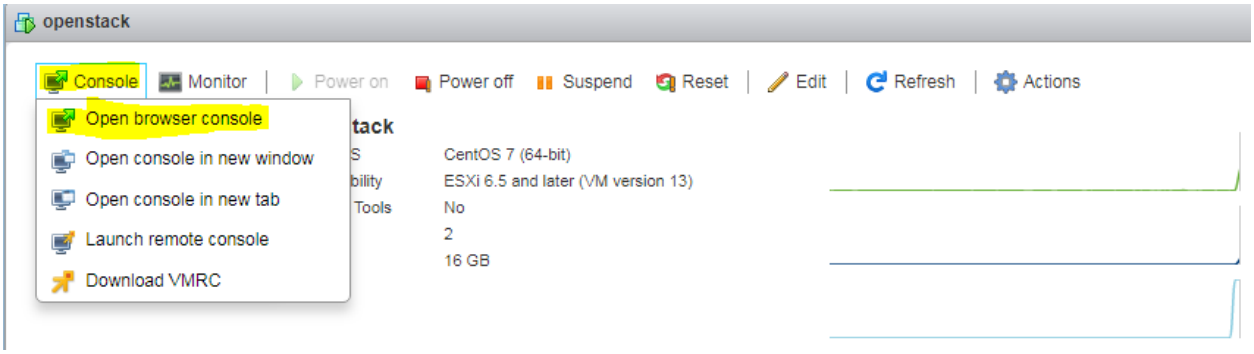
Select the VM and click on Power On (highlighted below)



Click the VM link once it is on

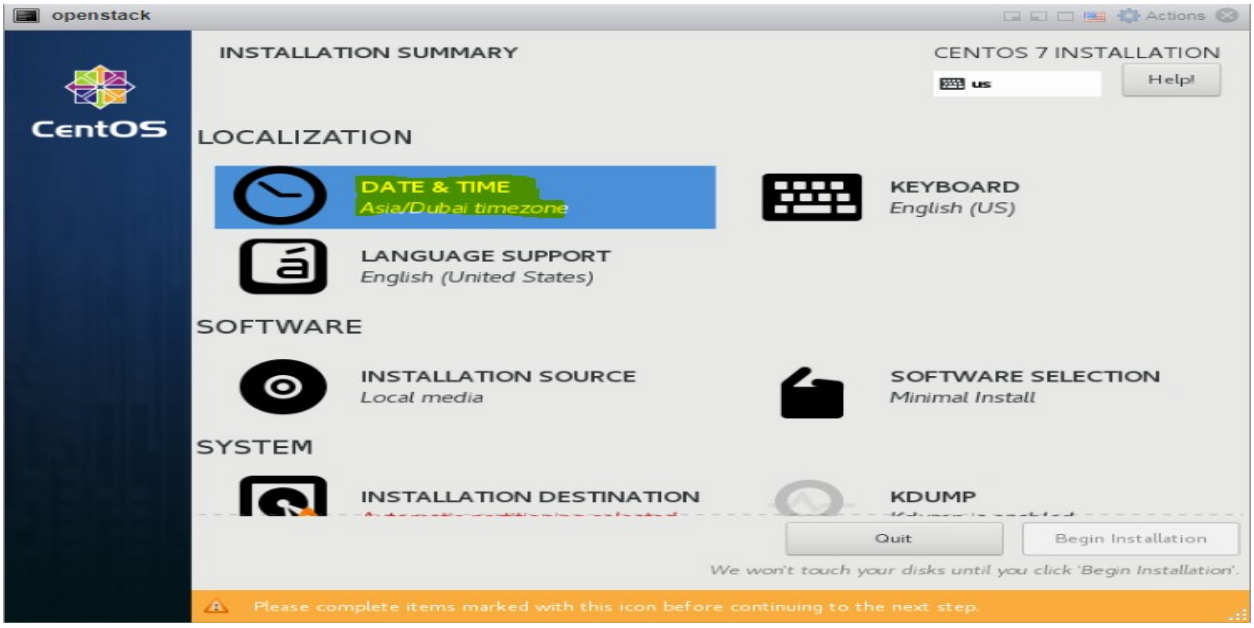


Open browser console of the VM

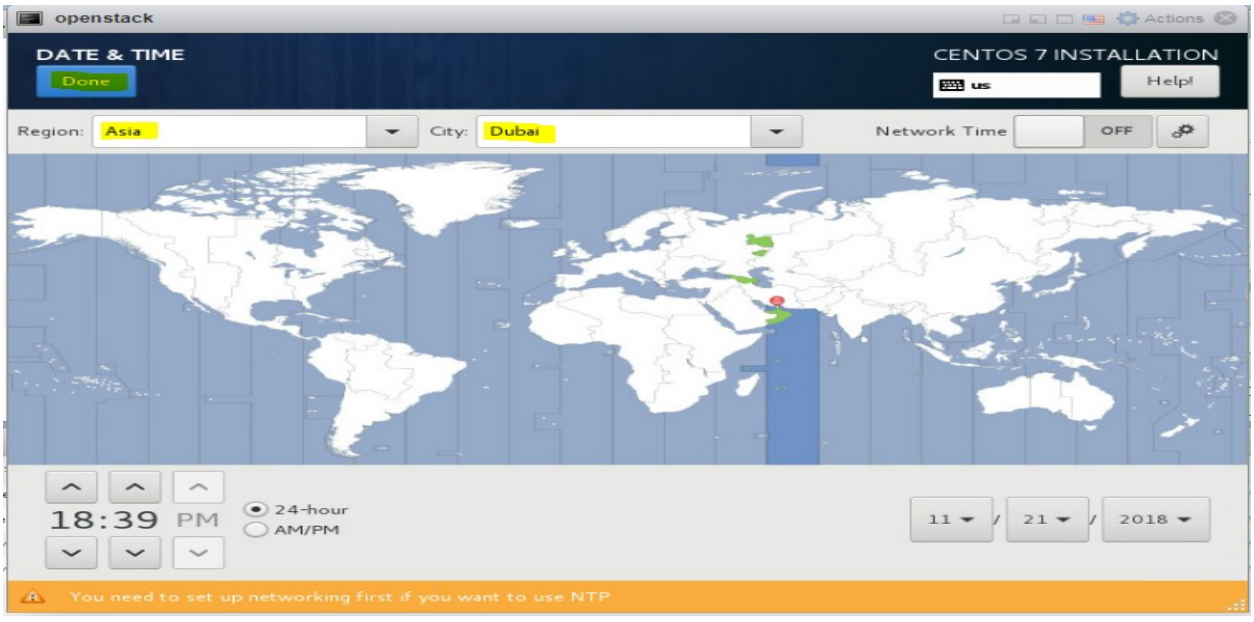


2. The following steps are to install CENTOS 7 as an operating system

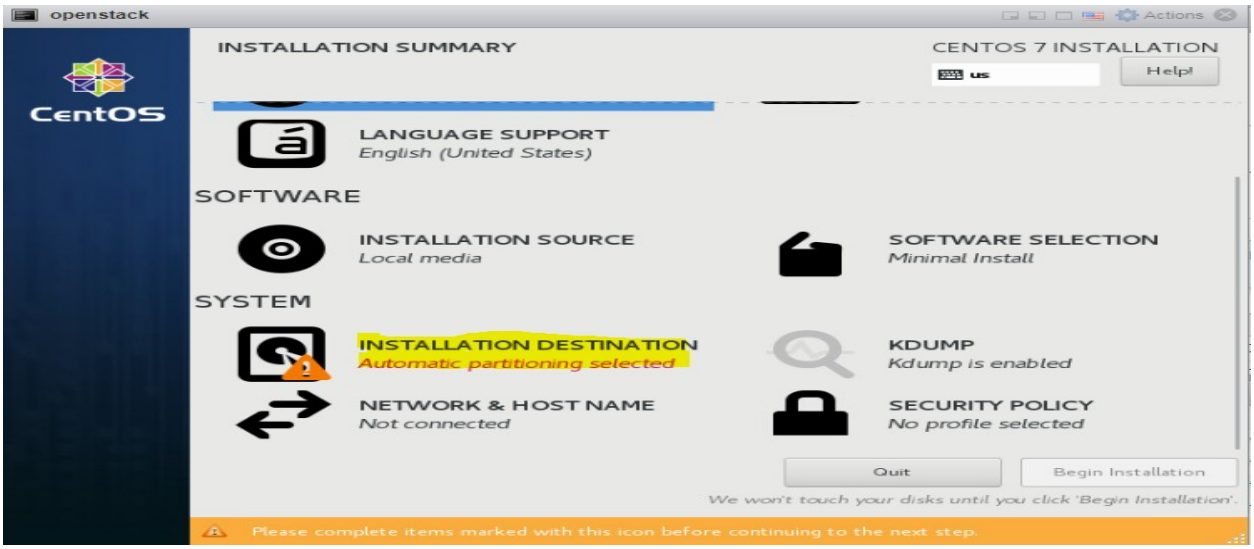
Choose the appropriate Date and Time Zone



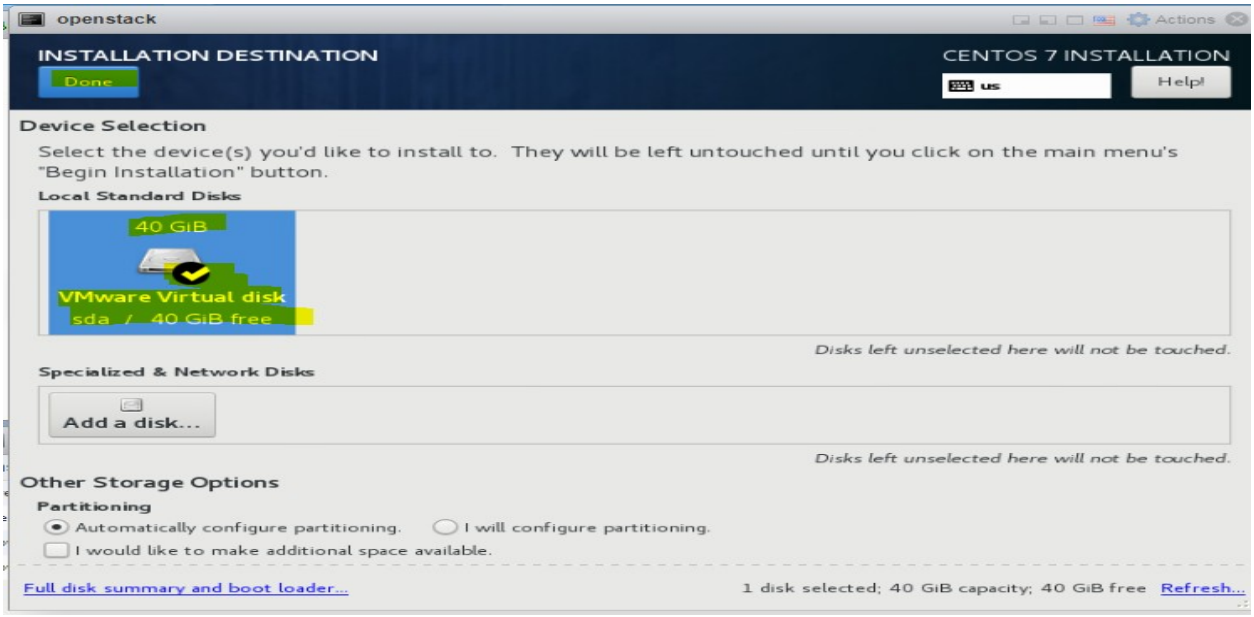
Set the zone and click on Done



Click on Installation Destination to attach storage disk.

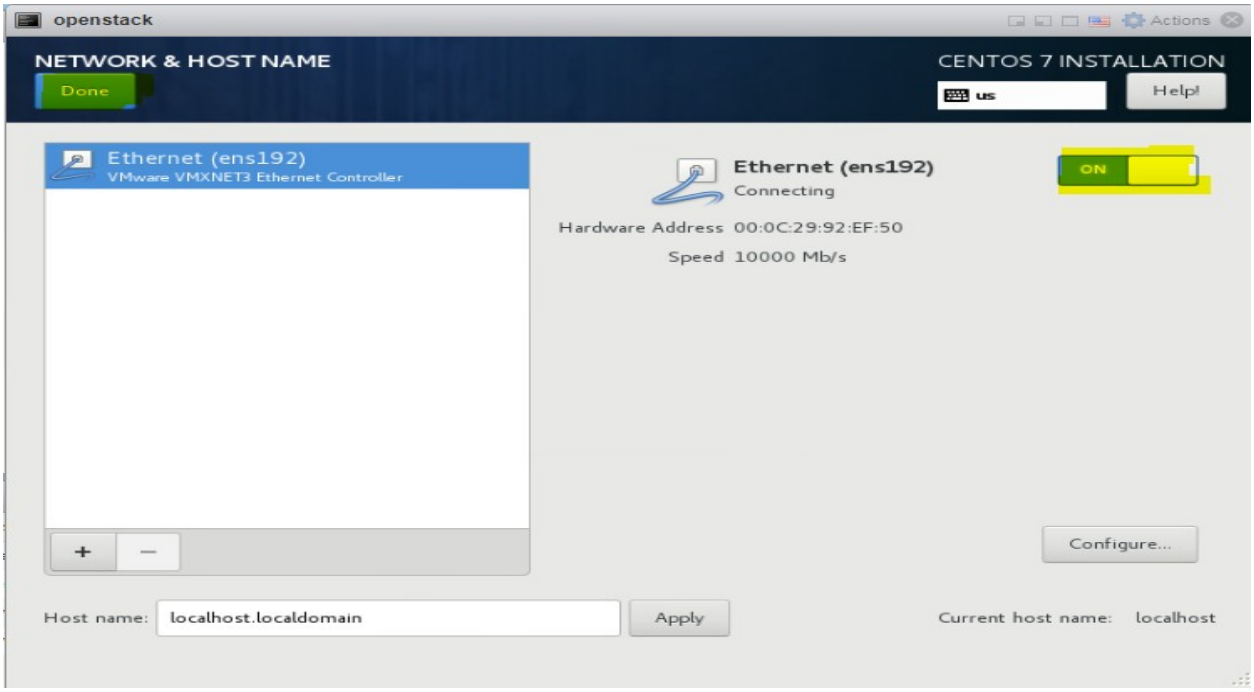


Select VMware Virtual disk (40 GiB) and click on Done

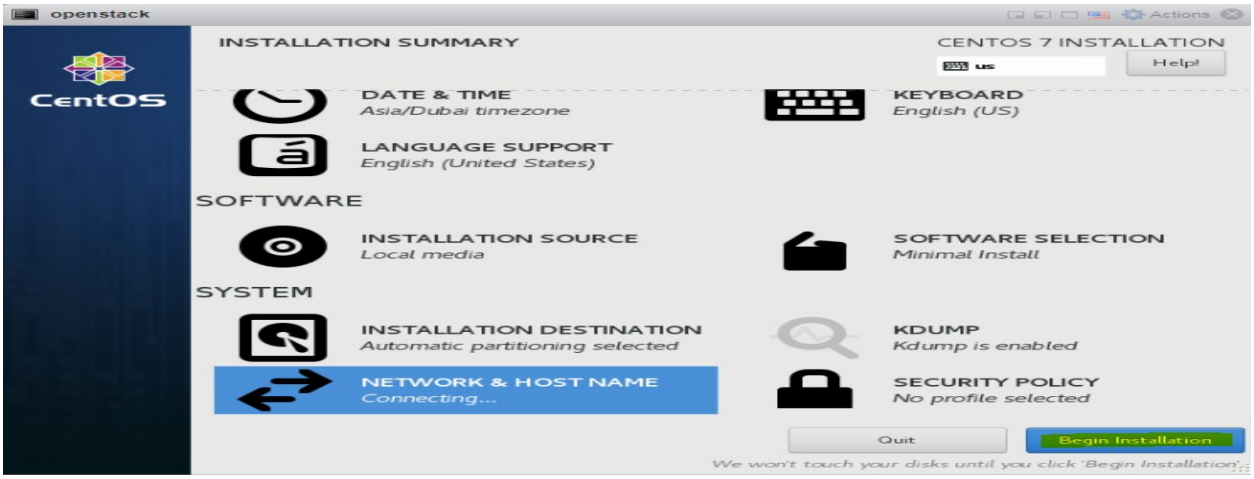


Select Network & Hostname tab for network configuration

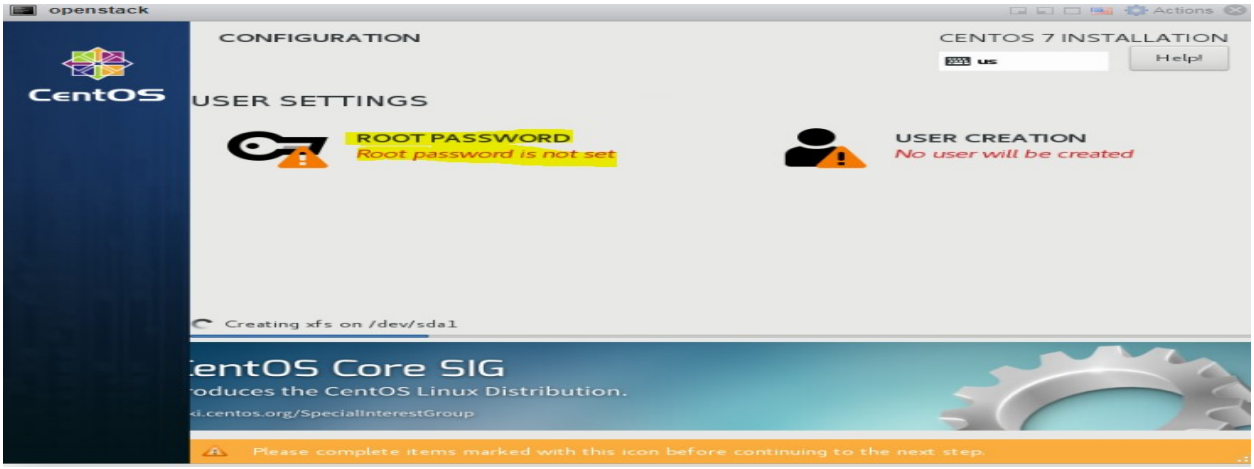
Switch on the Ethernet (ens192) port and click on Done



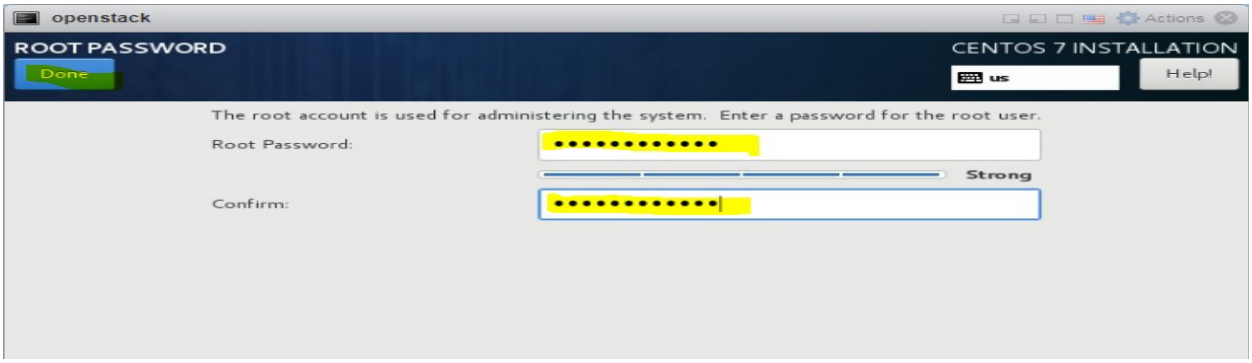
Begin Installation



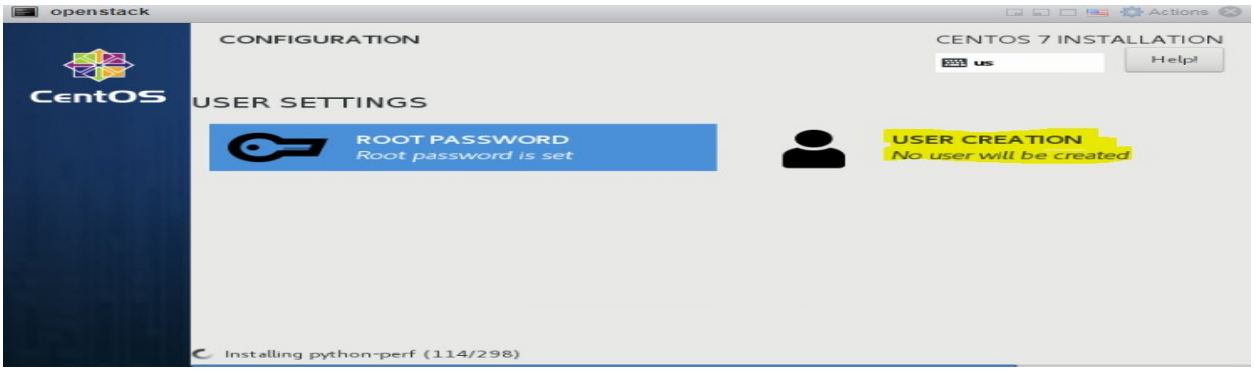
Click on the ROOT PASSWORD for accessing as root user



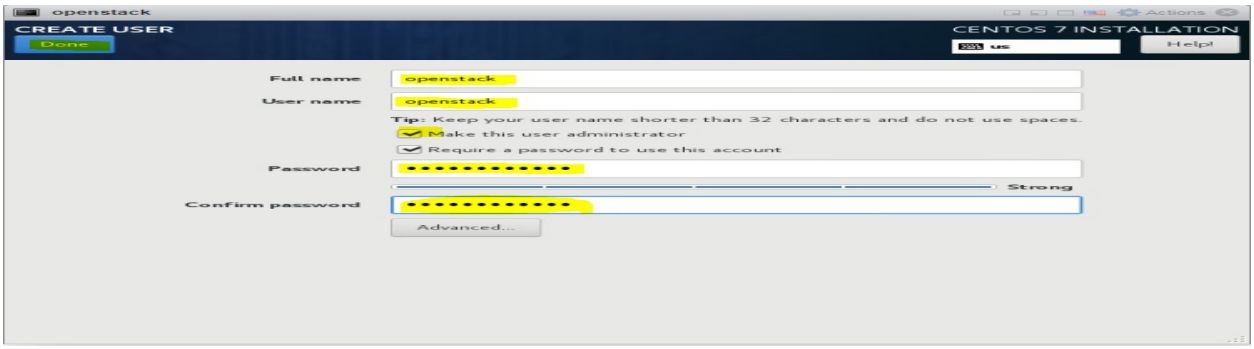
Set a password on click on Done



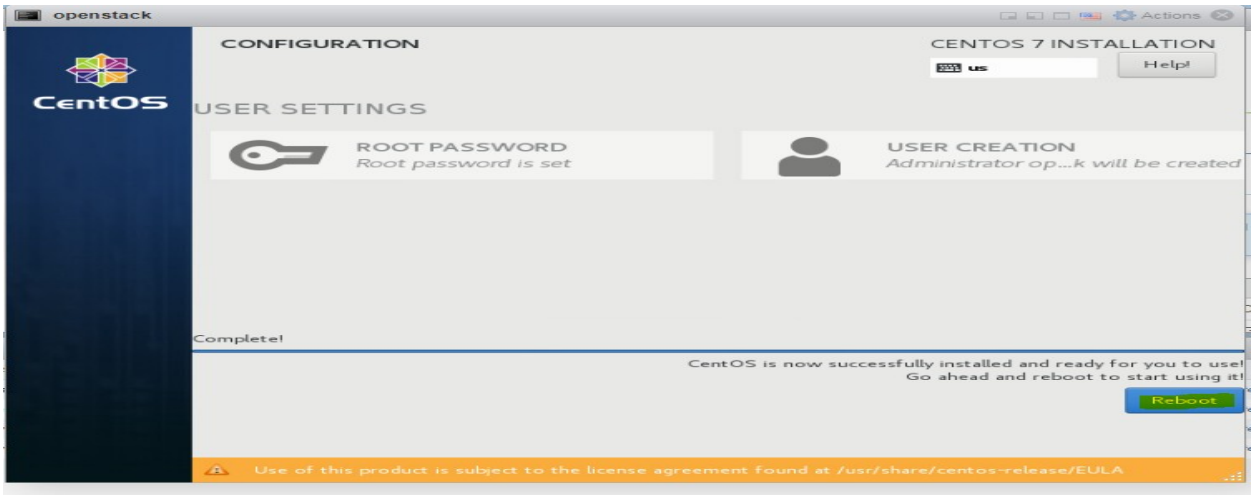
Select USER CREATION



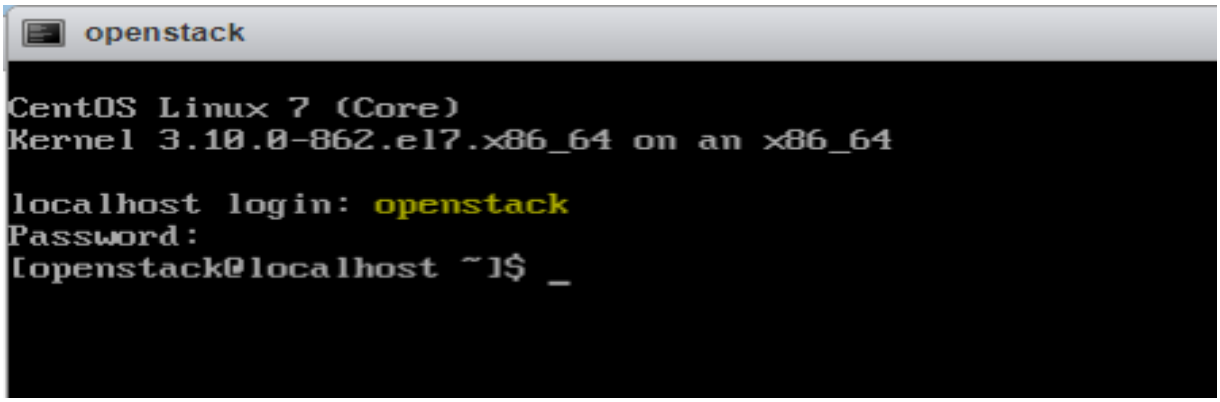
Name a user (local user) and set the password and click on Done



Installation will take 10-15 mins approximately and click on Reboot once completed .



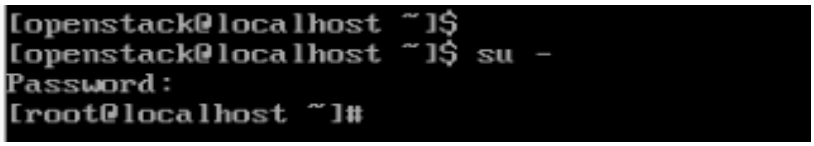
Login as the user (openstack) that was configured during installation



3. Setup the Static IP for VM

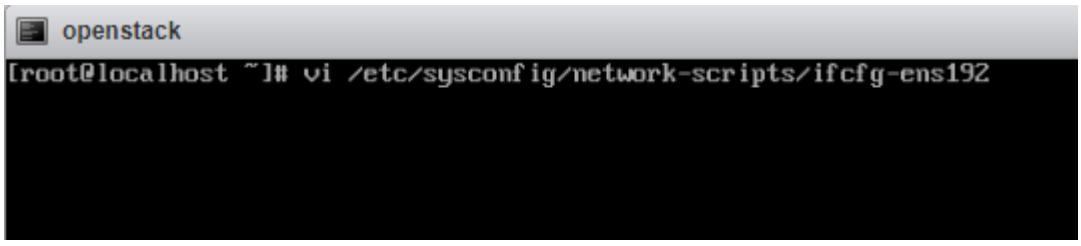
All the tasks shall be performed as a root user.

>> su –



Edit the Ethernet port configuration file of the VM and make the following changes

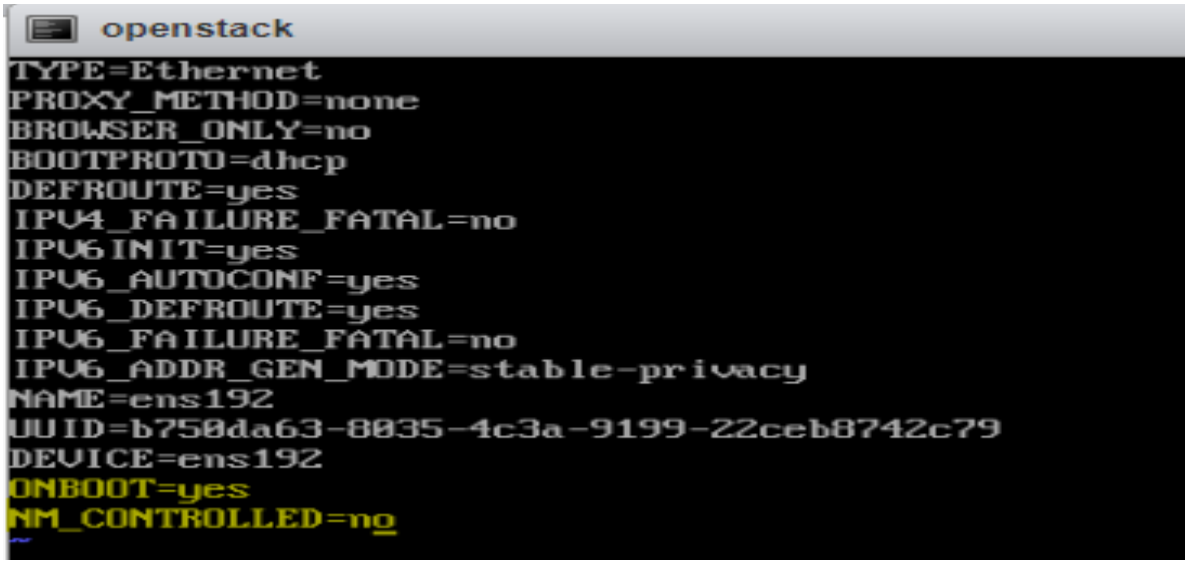
>> vi /etc/sysconfig/network-scripts/ifcfg-ens192



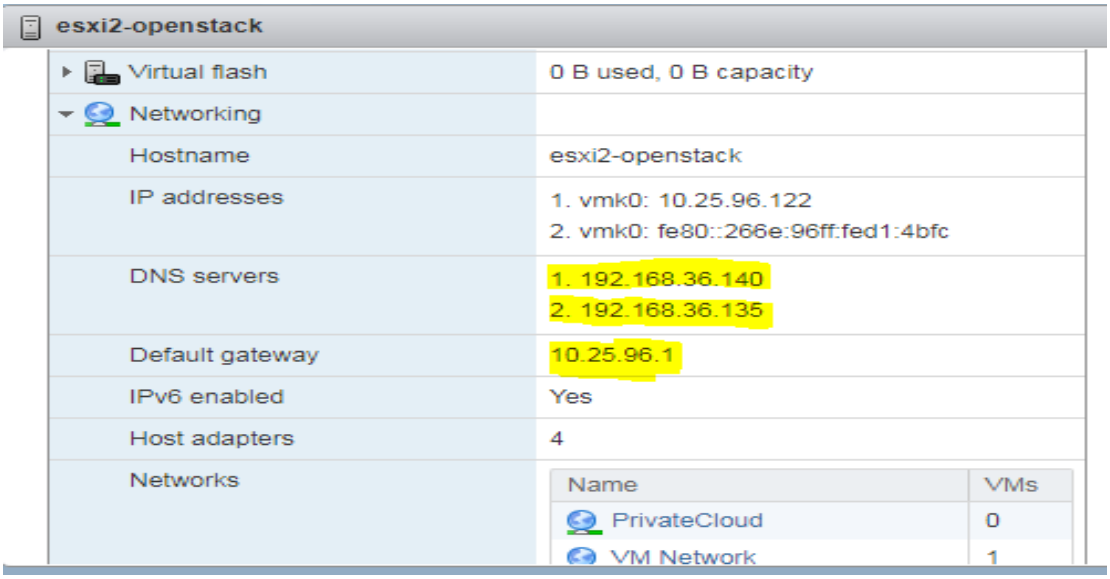
(i) Change the ONBOOT config to yes

(ii) Add a line in the script
NM_CONTROLLED=no
(iii) Save and exit the script
:wq! (to save and exit)

ifcfg-ens192 config file should like this after changes



Check the gateway and dns servers on esxi console homepage:

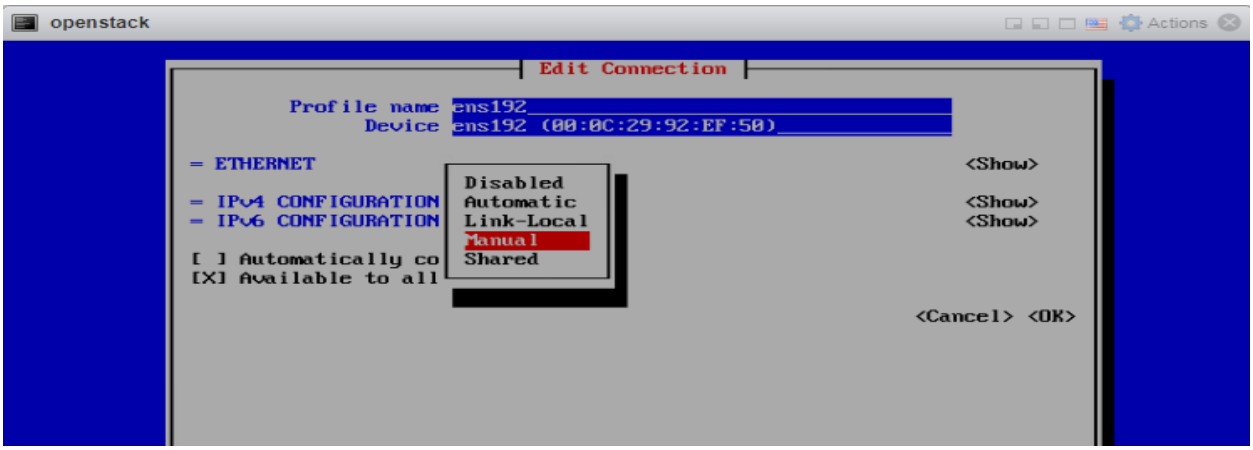


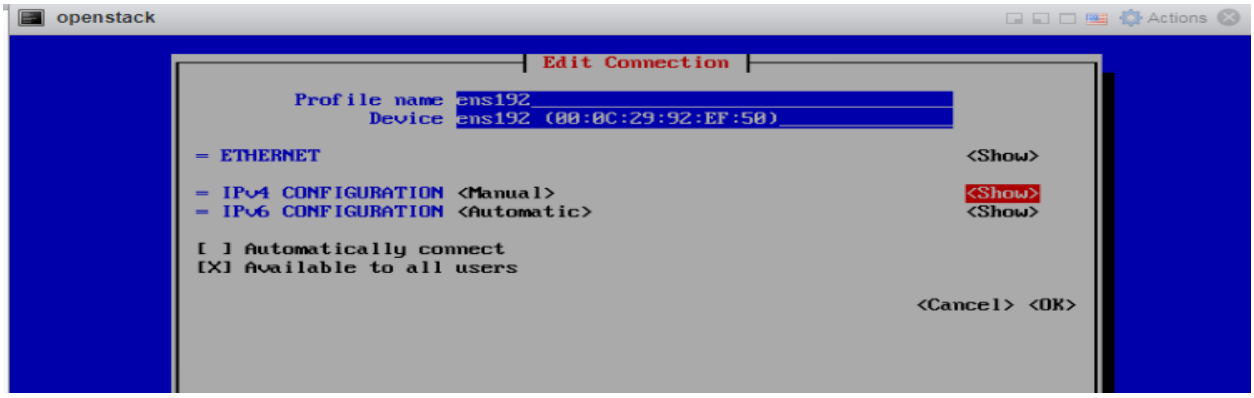
IP address (to be set for VM)	Gateway	DNS

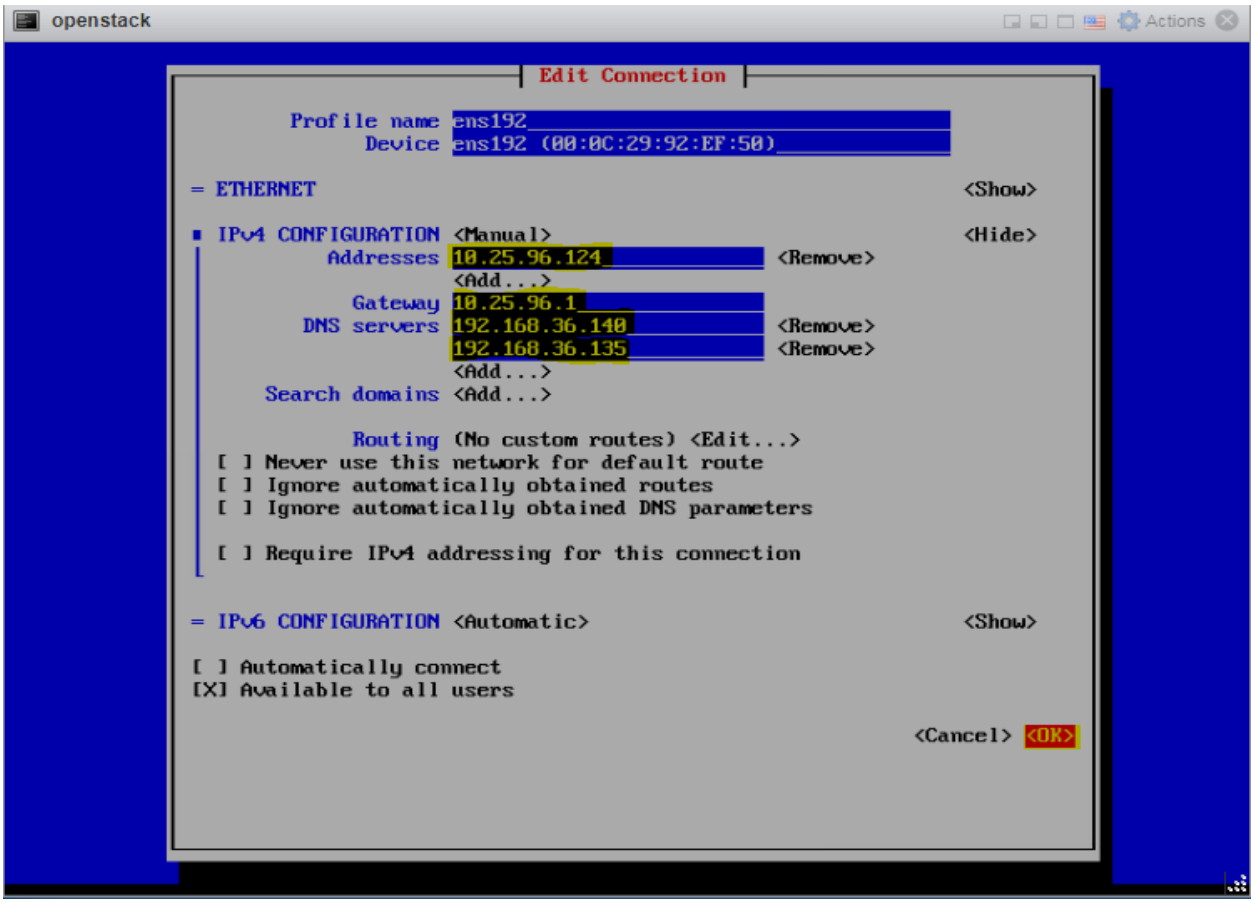
10.25.96.124	**10.25.96.1**	**192.168.36.140** **192.168.36.135**

Edit the connection for Ethernet port ens192

>> nmtui edit ens192







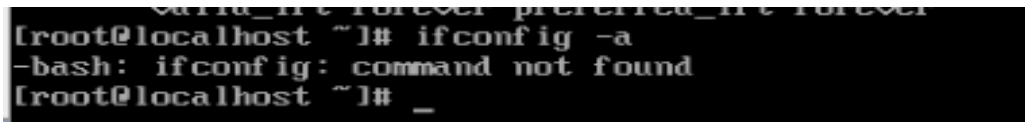
Reboot and restart the network

>>reboot

>> service network restart

Verify :

>> ifconfig –a



Install net-tools and yum-utils

>> yum install net-tools

>> yum install yum-utils

```
Is this ok [y/N]: y
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : net-tools-2.0-0.22.20131004git.el7.x86_64
  Verifying  : net-tools-2.0-0.22.20131004git.el7.x86_64

Installed:
  net-tools.x86_64 0:2.0-0.22.20131004git.el7

Complete!
[root@localhost ~]#
```

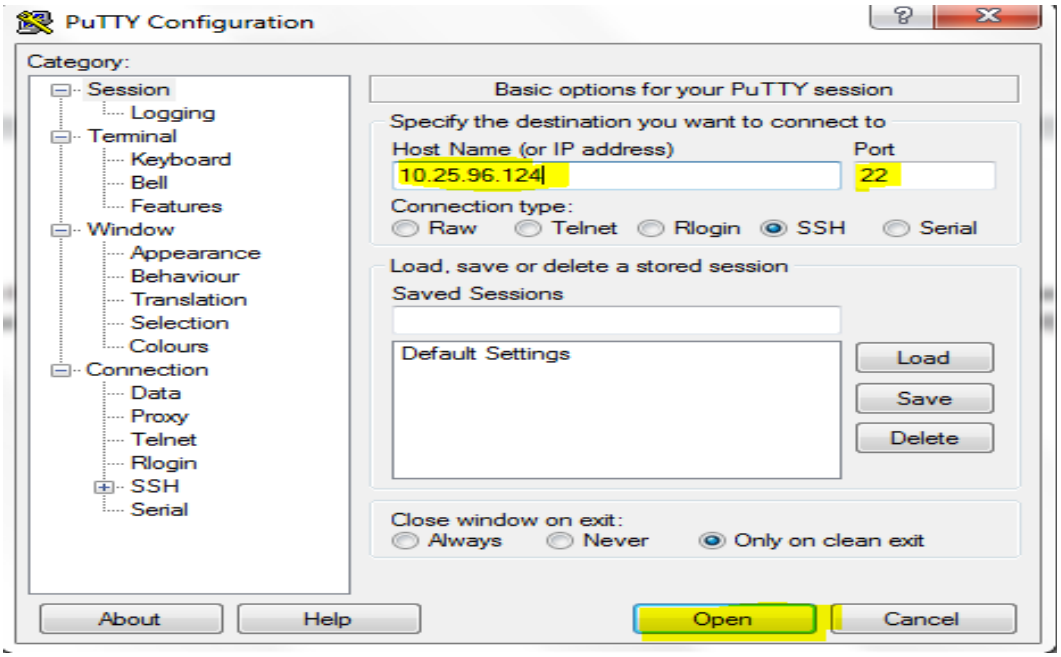
>> ifconfig –a

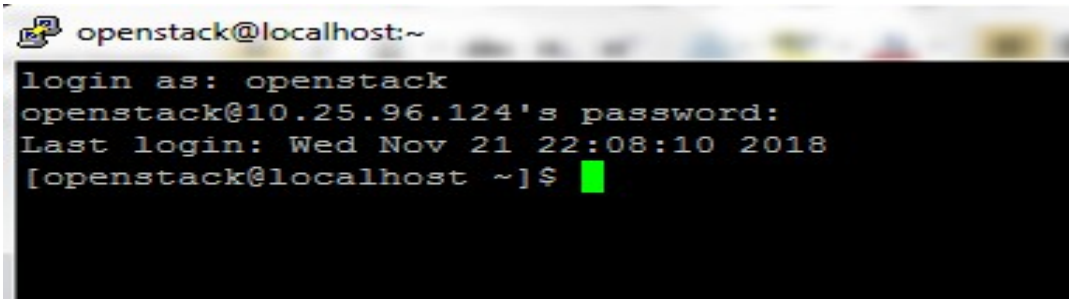
```
[root@localhost ~]# ifconfig -a
ens192: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.25.96.124  netmask 255.0.0.0  broadcast 10.255.255.255
        inet6 fe80::20c:29ff:fe92:ef50  prefixlen 64  scopeid 0x20<link>
        ether 00:0c:29:92:ef:50  txqueuelen 1000  (Ethernet)
        RX packets 7486  bytes 13683143 (13.0 MiB)
        RX errors 0  dropped 22  overruns 0  frame 0
        TX packets 4370  bytes 290885 (284.0 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

$ ping google.com

```
[root@localhost ~]# ping google.com
PING google.com (216.58.207.14) 56(84) bytes of data.
64 bytes from fjr02s03-in-f14.1e100.net (216.58.207.14): icmp_seq=1 ttl=51 time=4.94 ms
64 bytes from fjr02s03-in-f14.1e100.net (216.58.207.14): icmp_seq=2 ttl=51 time=4.14 ms
64 bytes from fjr02s03-in-f14.1e100.net (216.58.207.14): icmp_seq=3 ttl=51 time=4.11 ms
64 bytes from fjr02s03-in-f14.1e100.net (216.58.207.14): icmp_seq=4 ttl=51 time=4.18 ms
64 bytes from fjr02s03-in-f14.1e100.net (216.58.207.14): icmp_seq=5 ttl=51 time=4.17 ms
64 bytes from fjr02s03-in-f14.1e100.net (216.58.207.14): icmp_seq=6 ttl=51 time=4.11 ms
64 bytes from fjr02s03-in-f14.1e100.net (216.58.207.14): icmp_seq=7 ttl=51 time=7.98 ms
^C
--- google.com ping statistics ---
7 packets transmitted, 7 received, 0% packet loss, time 6010ms
rtt min/avg/max/mdev = 4.113/4.806/7.980/1.327 ms
[root@localhost ~]# _
```

So by now the IP has been statically set for the VM and is working as expected and now we should be able to login using Putty. Successful login with Putty indicates that ssh (secure shell) is working fine.





4. Configure your network settings

>> systemctl disable firewalld

>> systemctl stop firewalld

>> systemctl disable NetworkManager

>> systemctl stop NetworkManager

>> systemctl enable network

>> systemctl start network

5. **Install Sofware Repository (openstack-rocky)from centos release and make sure repository is enabled.**
   >> yum install -y centos-release-openstack-rocky

```
[root@localhost ~]# yum install -y centos-release-openstack-rocky
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
 * base: centos.kw.zain.com
 * extras: centos.kw.zain.com
 * updates: centos.kw.zain.com
Resolving Dependencies
--> Running transaction check
---> Package centos-release-openstack-rocky.noarch 0:1-1.el7.centos will be inst
alled
--> Processing Dependency: centos-release-qemu-ev for package: centos-release-op
enstack-rocky-1-1.el7.centos.noarch
--> Processing Dependency: centos-release-ceph-luminous for package: centos-rele
ase-openstack-rocky-1-1.el7.centos.noarch
--> Running transaction check
---> Package centos-release-ceph-luminous.noarch 0:1.1-2.el7.centos will be inst
alled
--> Processing Dependency: centos-release >= 7-5.1804.el7.centos.2 for package:
```

```
Installed:
  centos-release-openstack-rocky.noarch 0:1-1.el7.centos

Dependency Installed:
  centos-release-ceph-luminous.noarch 0:1.1-2.el7.centos
  centos-release-qemu-ev.noarch 0:1.0-3.el7.centos
  centos-release-storage-common.noarch 0:2-2.el7.centos
  centos-release-virt-common.noarch 0:1-1.el7.centos

Dependency Updated:
  centos-release.x86_64 0:7-5.1804.5.el7.centos

Complete!
[root@localhost ~]#
```

Enable openstack-rocky repository

>> yum-config-manager --enable openstack-rocky

```
[root@localhost ~]# yum-config-manager --enable openstack-rocky
Loaded plugins: fastestmirror
[root@localhost ~]#
```

Update your current packages

>> yum update -y

```
[root@localhost ~]# yum update -y
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
 * base: centos.kw.zain.com
 * extras: centos.kw.zain.com
 * updates: centos.kw.zain.com
Resolving Dependencies
--> Running transaction check
---> Package NetworkManager.x86_64 1:1.10.2-13.el7 will be updated
---> Package NetworkManager.x86_64 1:1.10.2-16.el7_5 will be an update
```

Install packstack installer

>> yum install -y openstack-packstack

```
[root@localhost ~]# yum install -y openstack-packstack
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
 * base: centos.kw.zain.com
 * extras: centos.kw.zain.com
 * updates: centos.kw.zain.com
```

Saving the openstack configuration file (answer-file) at path : /root

>> packstack --gen-answer-file=/root/openstackconfigfile.txt

```
[root@localhost ~]# packstack --gen-answer-file=/root/openstackconfigfile.txt
Packstack changed given value  to required value /root/.ssh/id_rsa.pub
[root@localhost ~]#
```

Edit the openstack config file to set the openstack dashboard password

>> vi /root/openstackconfigfile.txt

```
# Password to use for the Identity service 'demo' user.
CONFIG_KEYSTONE_DEMO_PW=ae6af2c685664d06

# Identity service API version string. ['v2.0', 'v3']
CONFIG_KEYSTONE_API_VERSION=v3
```

Run the packstacl installer pointing to openstackconfigfile.txt config file as shown.

This step takes 20 - 30 mins

>> packstack --answer-file=/root/openstackconfigfile.txt

```
[root@localhost ~]# packstack --answer-file=/root/openstackconfigfile.txt
Welcome to the Packstack setup utility

The installation log file is available at: /var/tmp/packstack/20181122-002552-1HuEzG/openstack-setup.log

Installing:
Clean Up                                             [ DONE ]
Discovering ip protocol version                      [ DONE ]
Setting up ssh keys                                  [ DONE ]
Preparing servers                                    [ DONE ]
```

```
10.25.96.124_compute.pp:                             [ DONE ]
Applying Puppet manifests                            [ DONE ]
Finalizing                                           [ DONE ]

 **** Installation completed successfully ******

Additional information:
 * Time synchronization installation was skipped. Please note that unsynchronized time on server instances might be problem for some OpenStack components.
 * File /root/keystonerc_admin has been created on OpenStack client host 10.25.96.124. To use the command line tools you need to source the file.
 * To access the OpenStack Dashboard browse to http://10.25.96.124/dashboard .
Please, find your login credentials stored in the keystonerc_admin in your home directory.
 * Because of the kernel update the host 10.25.96.124 requires reboot.
 * The installation log file is available at: /var/tmp/packstack/20181122-002552-1HuEzG/openstack-setup.log
 * The generated manifests are available at: /var/tmp/packstack/20181122-002552-1HuEzG/manifests
[root@localhost ~]#
```

http://10.25.96.124/dashboard

[username -> admin]

Password can be checked from keystonerc_admin file present at /root location