

**University Of Petroleum and Energy Studies,**  
**Dehradun**



**Cloud Application Development Lab**  
**(Lab -openstack installation)**

**Submitted by:**

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SAP: 500087705

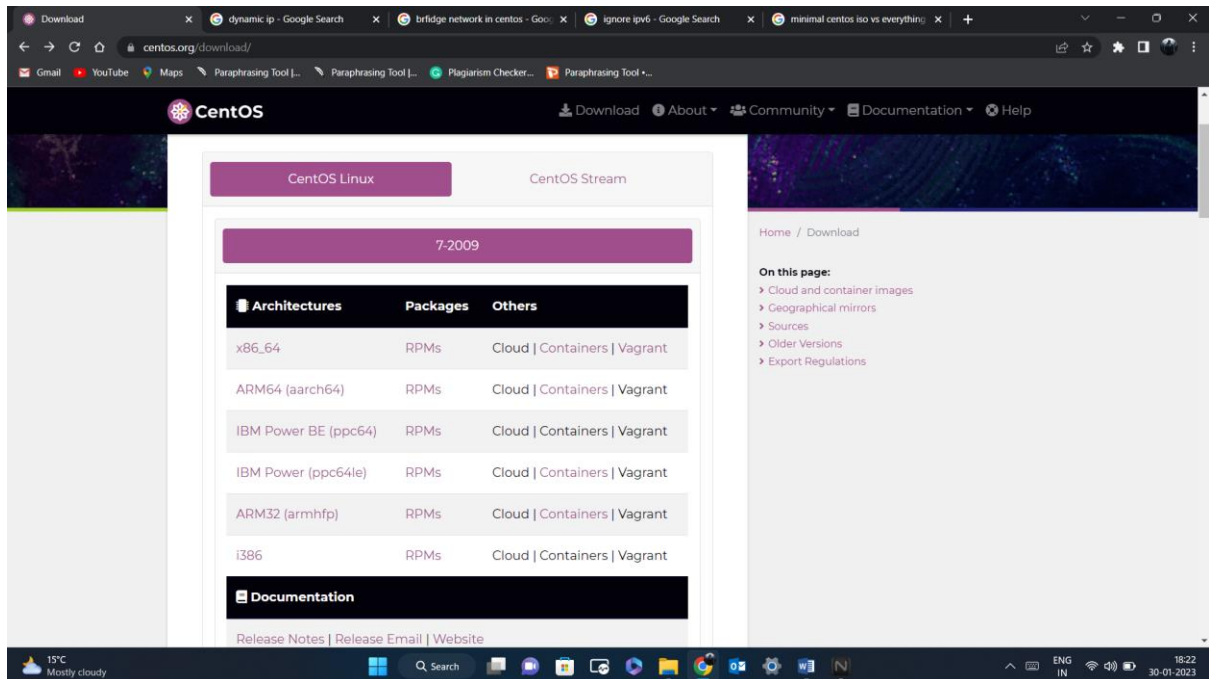
Enrolment No. : R2142201906

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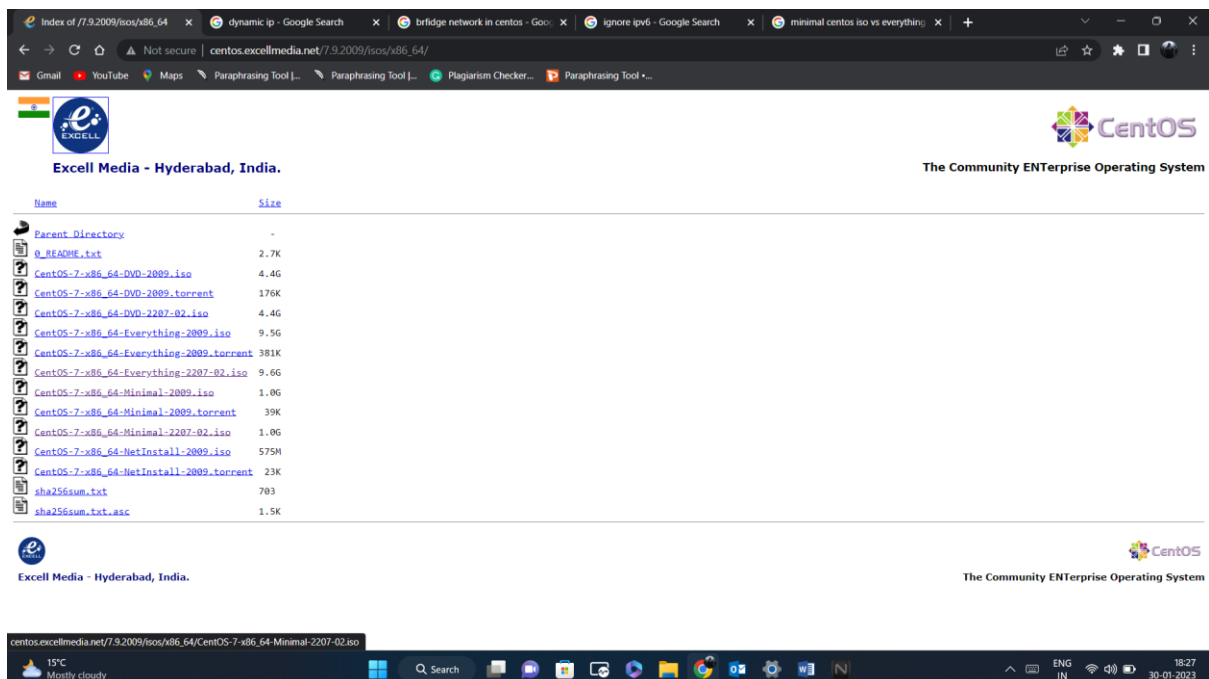
**Submitted To: Saurabh Shanu**

## Step 1:- Downloading an iso file.

- Step 1.1→In, order to build a centos virtual machine. we require an centos iso file.so, to download iso file ,go to <https://www.centos.org/download/> and select on x86\_64 .

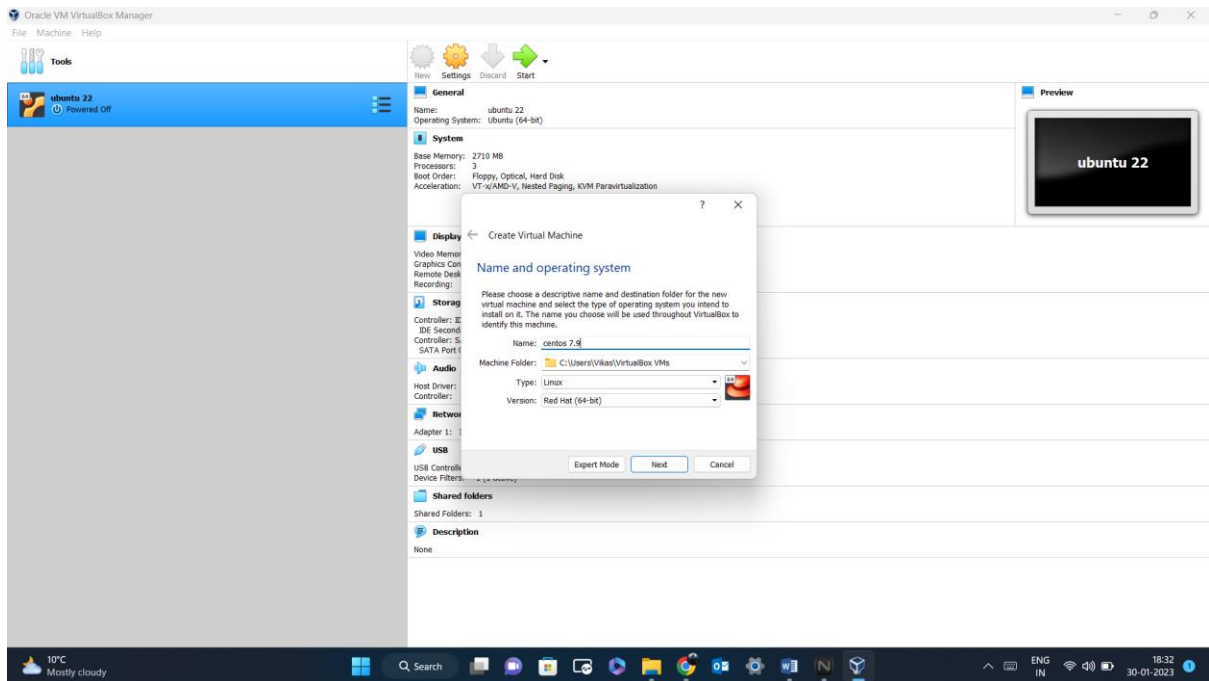


- Step 1.2→After that we select on any links or mirrors from our region. Then ,download CentOS-7-x86\_64-Minimal-2207-02.iso file from the link.

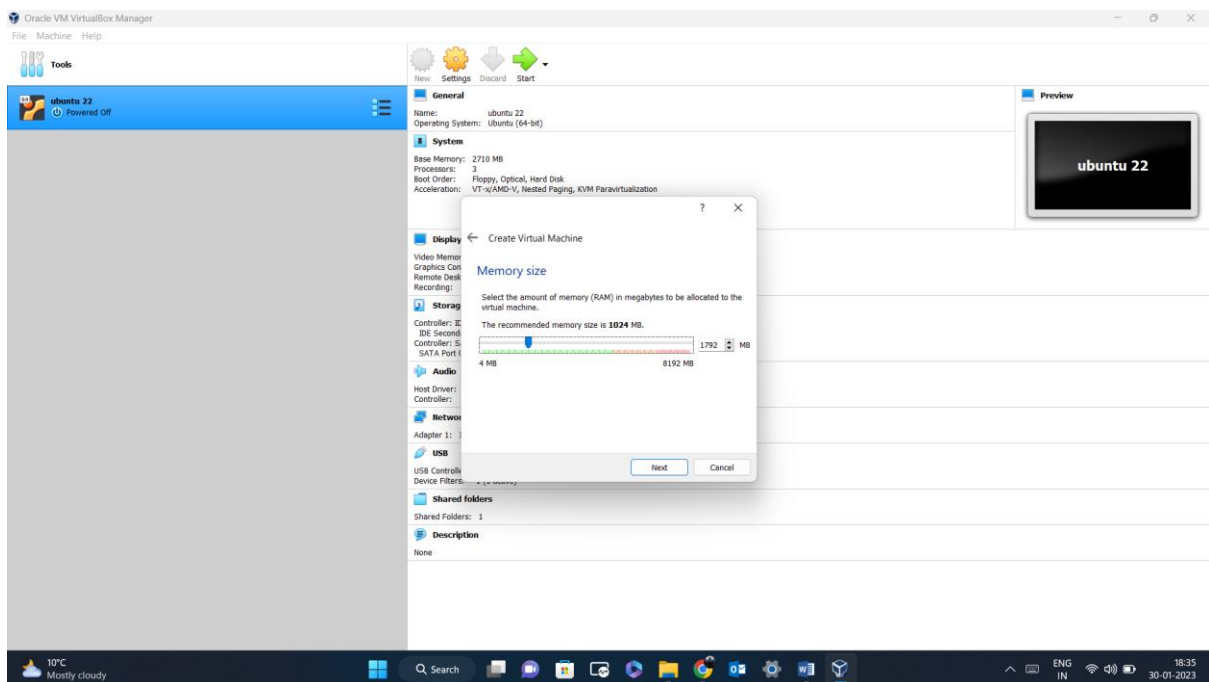


## Step 2:-building and configuring centos VM

- Step 2.1→once we download centos iso file. We are going to use VirtualBox to build our centos virtual machine. Now, to build a new VM select on new and enter the name of our VM. After that click on next.

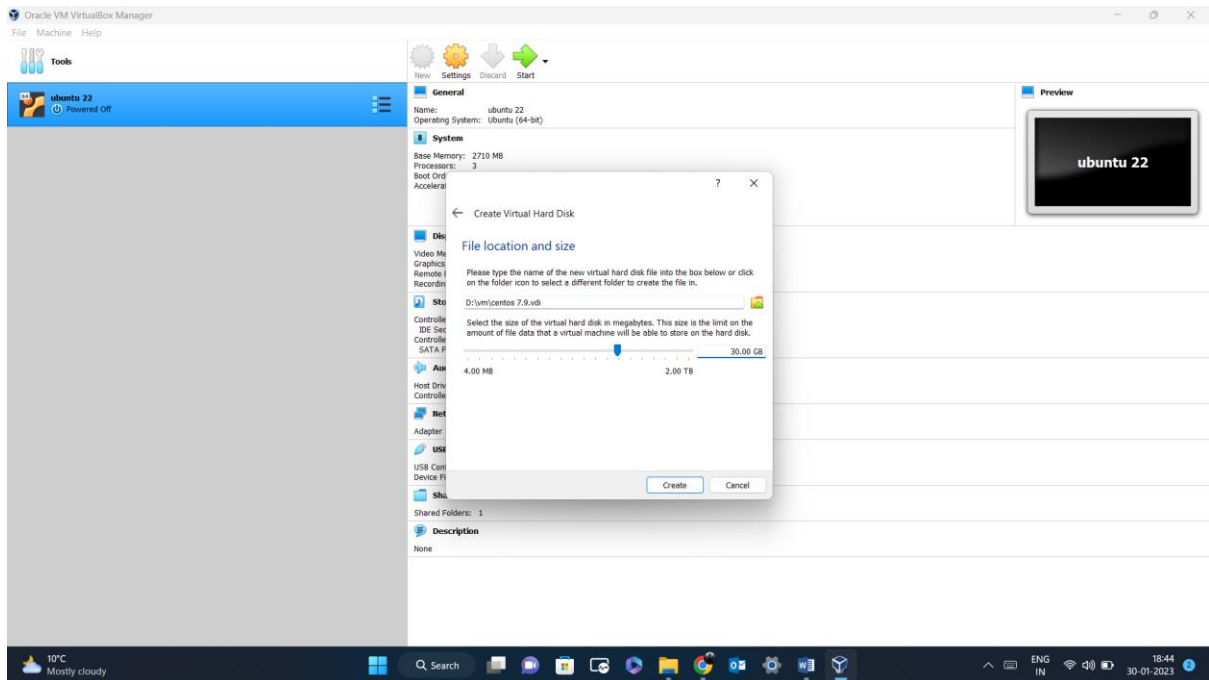


- Step 2.2→now, we are going to allocate base memory(RAM) to our VM(here we are allocating almost increased to 4000 MB of RAM) and click on next.

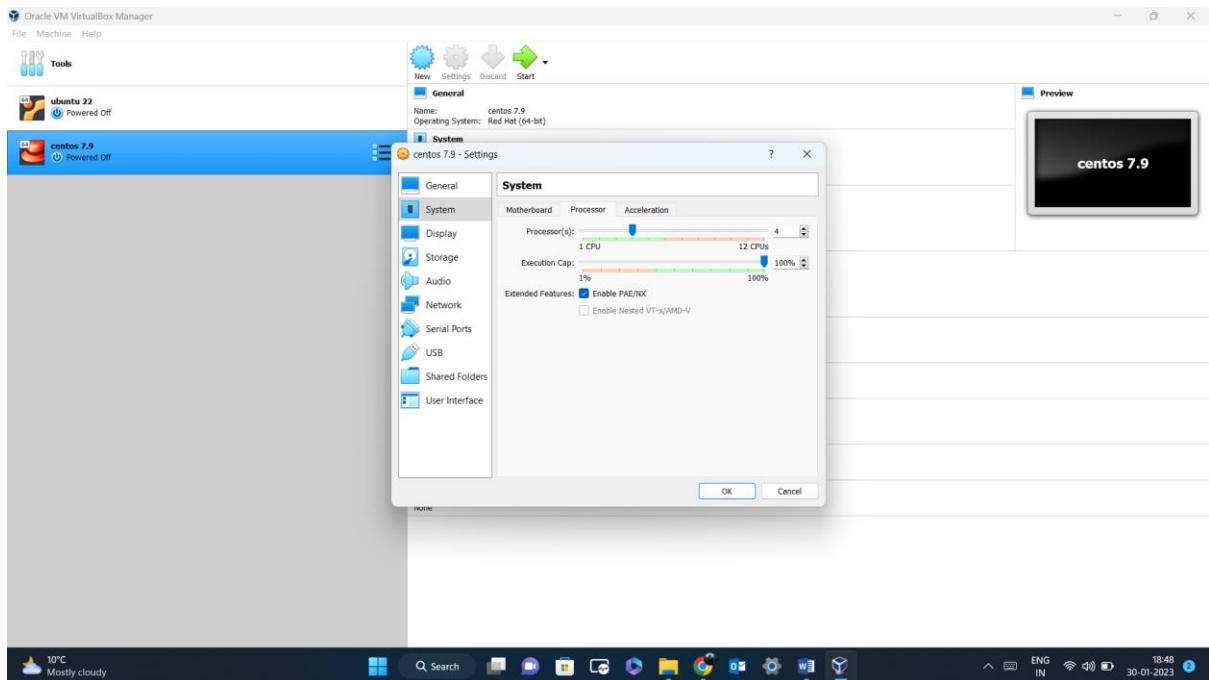


- Step 2.3→let, the hard disk option be remain same(create a virtual hard disk now),hard disk file type be (VDI(VirtualBox disk image)) and also let storage be (dynamically allocated).

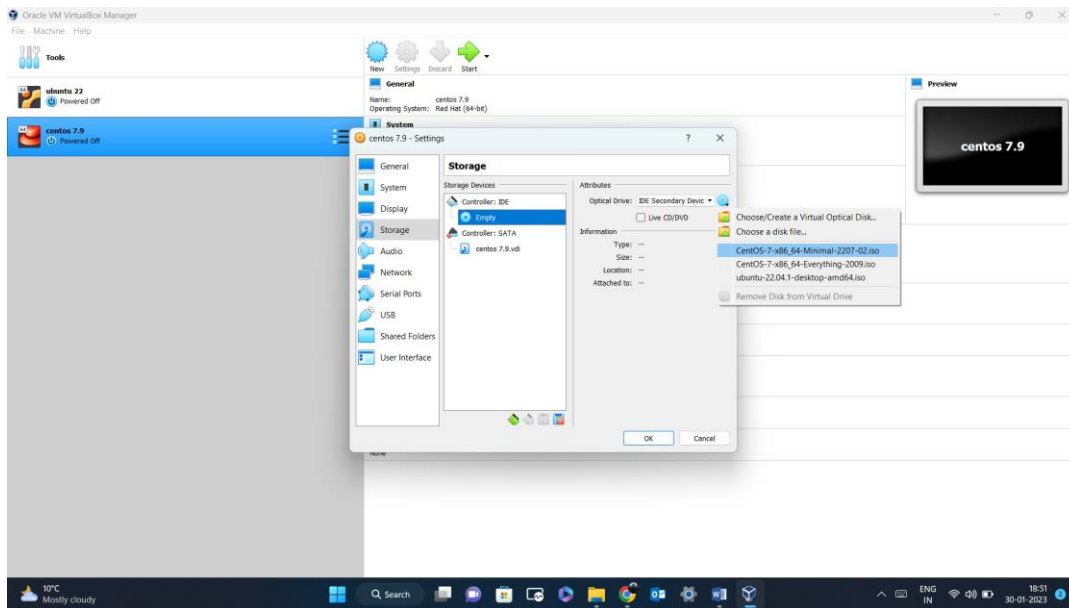
Now, here we are going to allocate storage to our VM and locate the folder where we want to keep our VM. Now, select on create.



- Step 2.4→after creation of our VM. Select on settings, go to system, select the processor and increase the processors count from one to four.

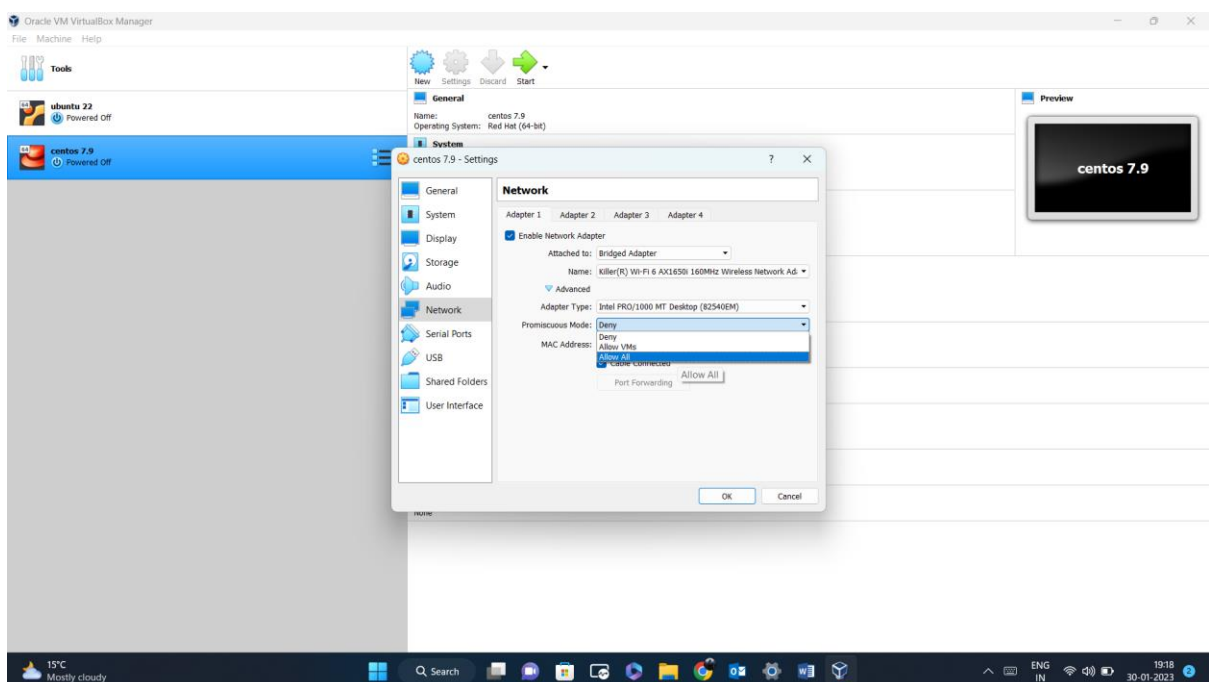


- Step 2.5→then select on storage, select on empty with a disc icon and again select on disk with drop down and select the iso file which we downloaded(we can also locate the iso file by clicking on choose a dick file, if your iso file is not shown here).

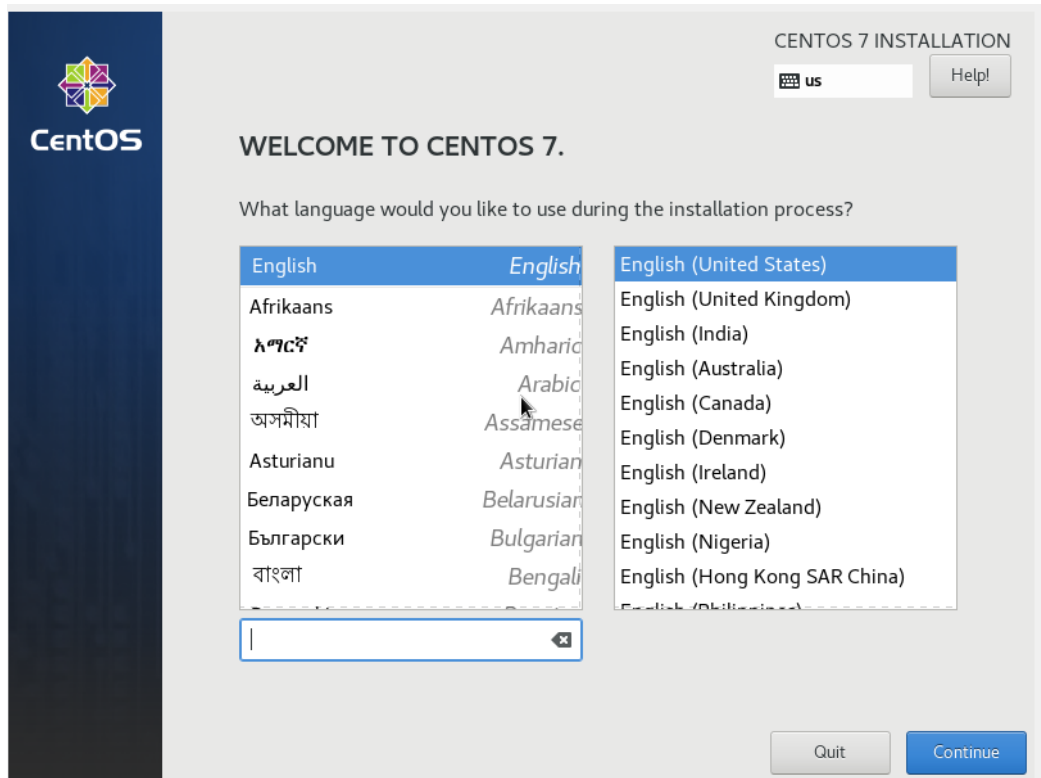


- Step 2.6→now go to network Network adapter attachment from (NAT to Bridged Adapter) and in promiscuous mode from (Deny to Allow All). Because OpenStack actually starts a Dynamic Host Configuration Protocol (DHCP) server (which assigns IP address to VM instances dynamically from the specified subnet), now in order to install openstack we need to make our network IP address dynamic for that we are using Bridged Adapter, the guest (VM) becomes a part of the same network the host (the one which is running the VirtualBox) is using. now, If the host received it's IP address from a DHCP server, the guest may also receive one this way(makes it visible directly to Internet).

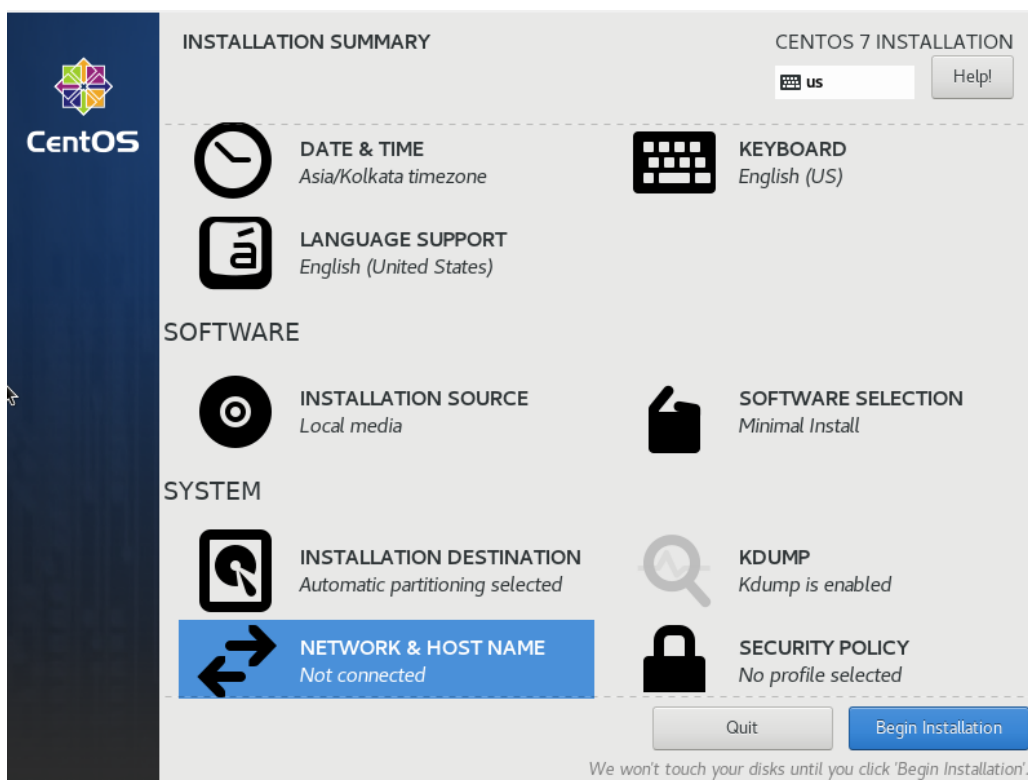
While using NAT guest was offered an IP address from different network space and not directly visible to Internet.



- Step 2.7→now, click on ok and start the virtual machine and select on (install O.S) option from the starting menu. After that select the language and click on continue.



- Step 2.8→this is the installation summary dashboard. Here we are going to change some settings.

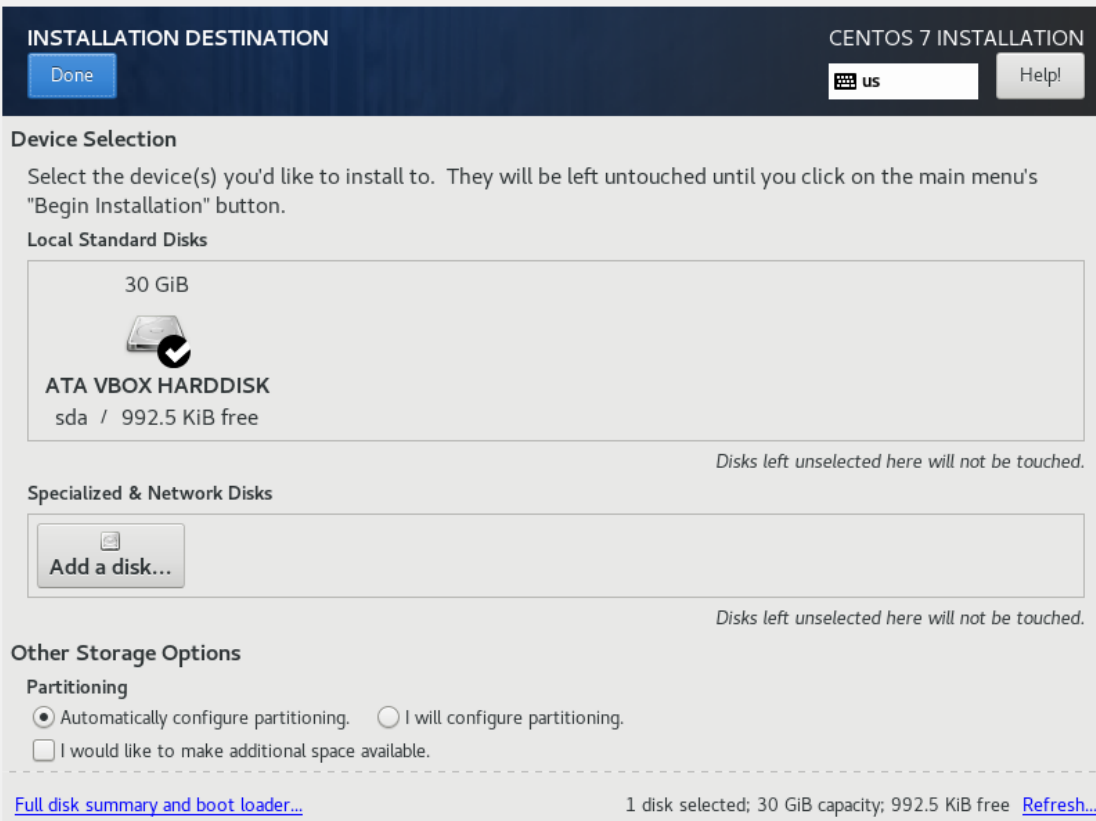


- Step 2.9→first, select on date and time option and Change the time zone to Asia/Kolkata.



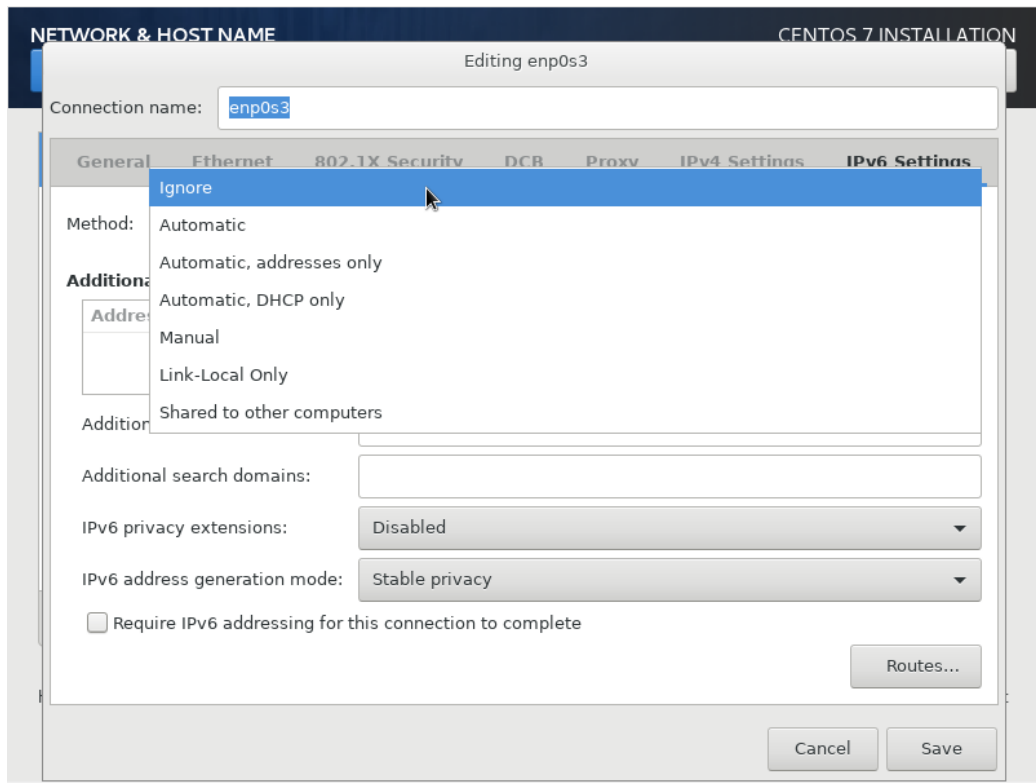
The screenshot shows the 'DATE & TIME' configuration window in the CentOS 7 installer. At the top, there's a 'Done' button and a 'Help!' button. Below the title bar, there are dropdown menus for 'Region' (set to 'Asia') and 'City' (set to 'Kolkata'). To the right, there's a 'Network Time' toggle set to 'OFF'. A world map is displayed in the center, with a red pin indicating the selected location in India. Below the map, there are controls for the time: a 24-hour clock showing '19:50 PM' and a date selector showing '01 / 30 / 2023'. An orange warning banner at the bottom states: 'You need to set up networking first if you want to use NTP'.

- Step 2.10→ In the installation destination. Let the option(automatically configure partitioning) be remain selected.

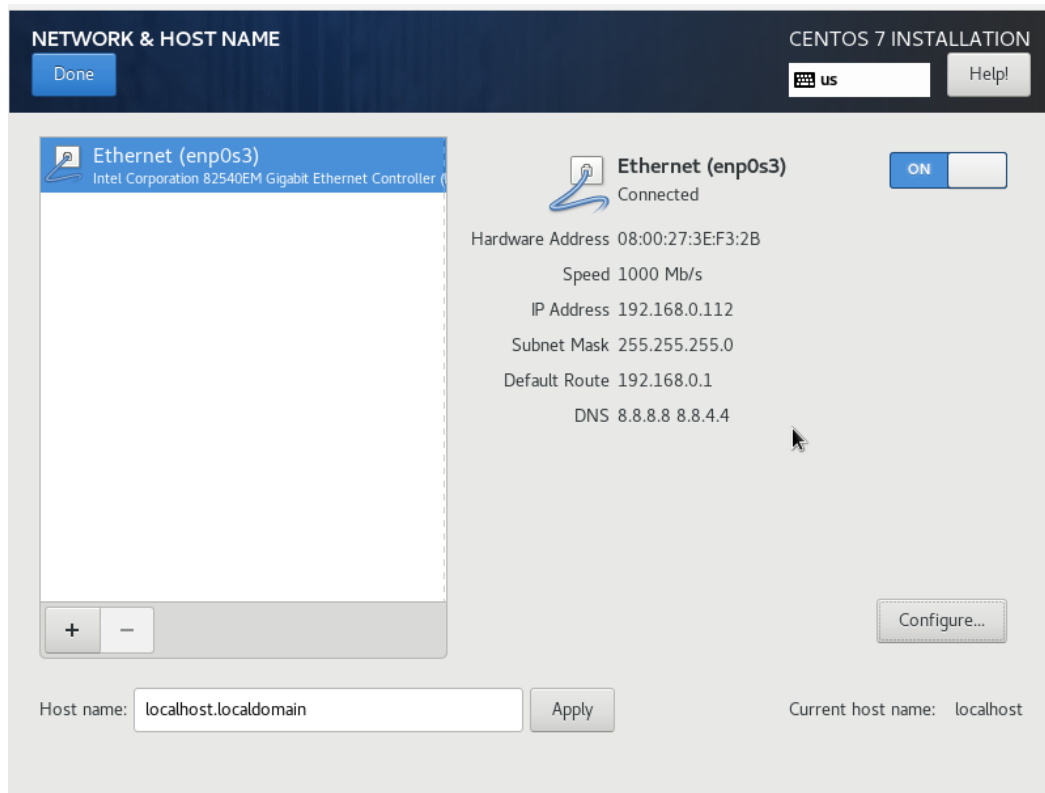


The screenshot shows the 'INSTALLATION DESTINATION' window in the CentOS 7 installer. At the top, there's a 'Done' button and a 'Help!' button. Below the title bar, there's a 'Device Selection' section with instructions: 'Select the device(s) you'd like to install to. They will be left untouched until you click on the main menu's "Begin Installation" button.' Under 'Local Standard Disks', a single disk is listed: 'ATA VBox Harddisk' with a capacity of '30 GiB' and '992.5 KiB free'. It is marked as selected with a checkmark. Below this, there's a section for 'Specialized & Network Disks' with an 'Add a disk...' button. At the bottom, there's a section for 'Other Storage Options' with three radio buttons: 'Automatically configure partitioning.' (selected), 'I will configure partitioning.', and 'I would like to make additional space available.' A blue link 'Full disk summary and boot loader...' is on the left. On the right, it says '1 disk selected; 30 GiB capacity; 992.5 KiB free' followed by a 'Refresh...' link.

- Step 2.11→ After, that select on Network & Host Name, click on configure and select on IPv6 setting and change the method from automatic to ignore and click on save.

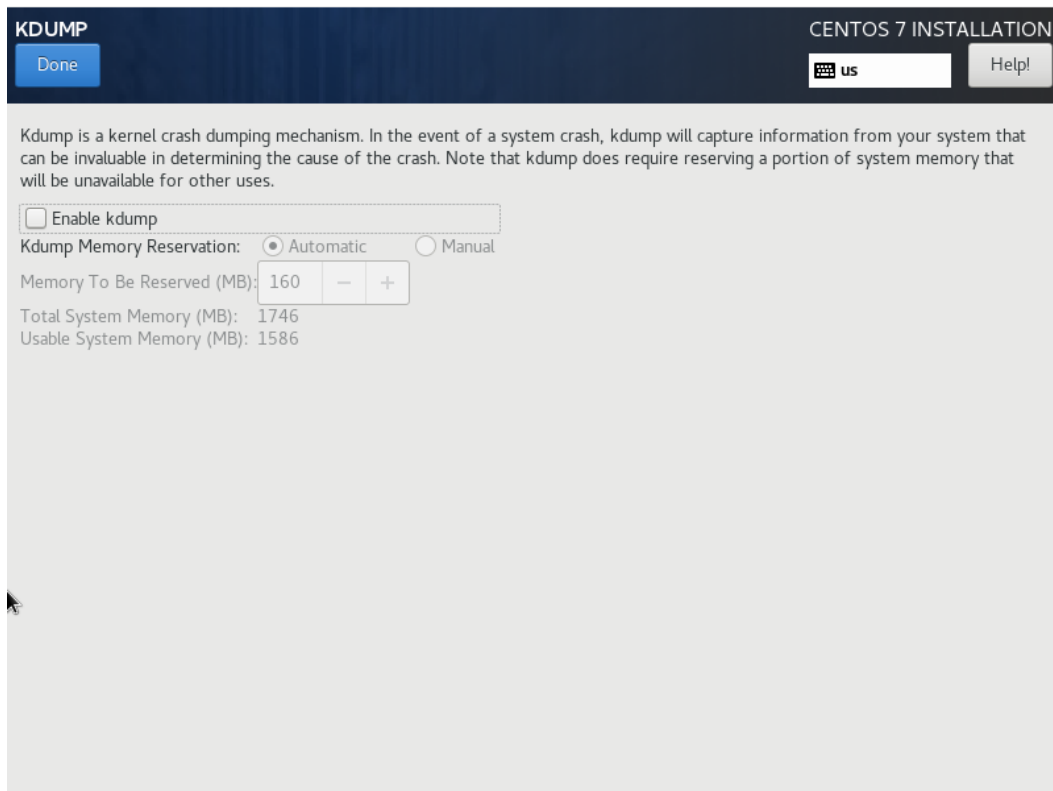


- Step 2.12→ Now ,select on button to turn it on. Now as we see its IP address we can tell it is using the IP address from the same network space which our host machine is connected.

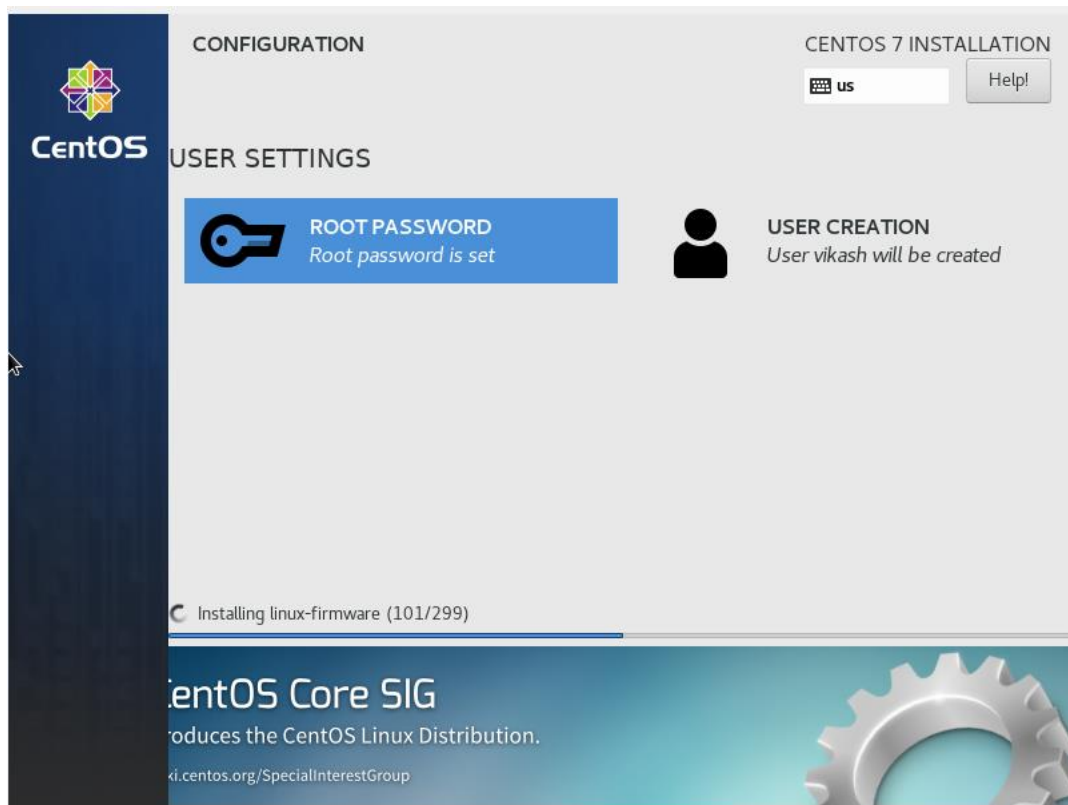




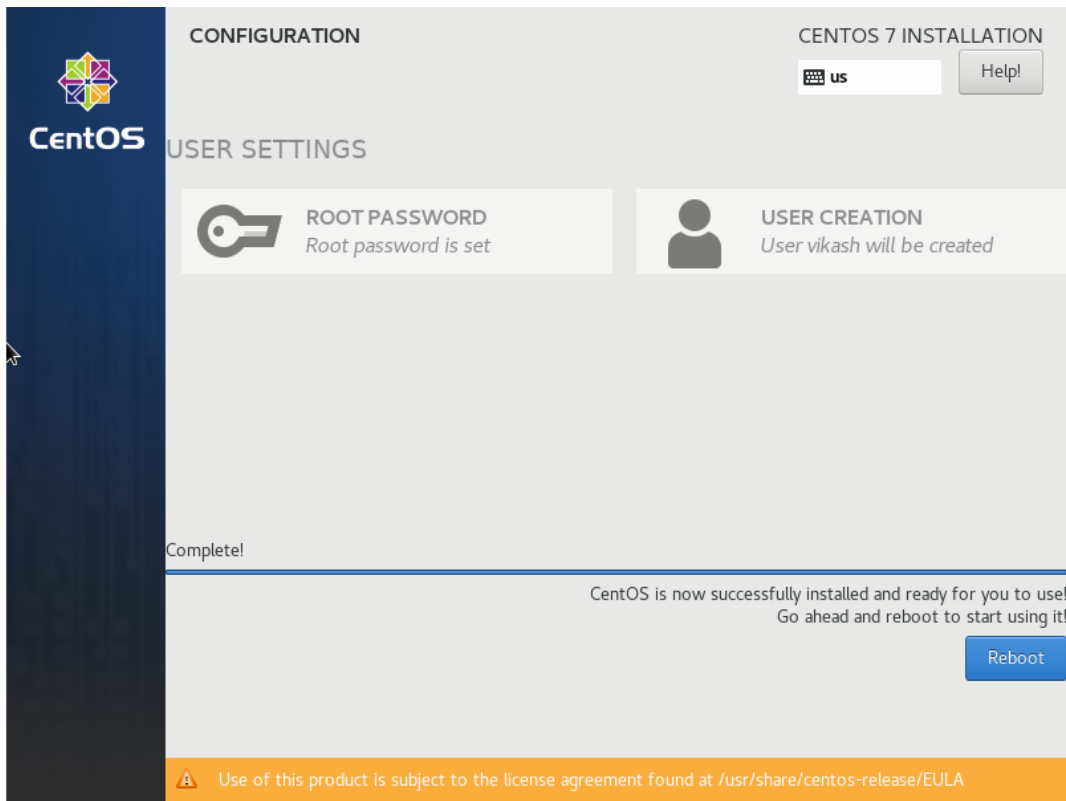
- Step 2.13→ Now select on KDUMP and uncheck the enable KDUMP option. after that select on begin installation.



- Step 2.14→ Now, here we create a user and set our root password.



- Step 2.15→ After complete installation there will be a reboot option to select. So, after rebooting and entering our login username and password on CLI. We are set and ready to install openstack.



```
CentOS Linux 7 (Core)
Kernel 3.10.0-1160.71.1.el7.x86_64 on an x86_64

localhost login: vikash
Password:
[vikash@localhost ~]$
```

## Step 3:-openstack installation

- Step 3.1→now, to install openstack we are going to first Login as a root user.  
→command→su

```
[vikash@localhost ~]$ su
Password:
[root@localhost vikash]# _
```

- Step 3.2→to, check Centos version.  
→command→cat /etc/redhat-release

```
[root@localhost vikash]# cat /etc/redhat-release
CentOS Linux release 7.9.2009 (Core)
```

- Step 3.3→populate your /etc/environment file with below locale settings(makes the language variable output in English)  
→command→vi /etc/environment  
( LANG=en\_US.utf-8  
LC\_ALL=en\_US.utf-8)

```
[root@localhost vikash]# vi /etc/environment
```

```
LANG=en_US.utf-8
LC_ALL=en_us.utf-8
```

```
:wq
```

- Step 3.4→now, we are going to check the status of Network Manager ,if active stop and disable it.

→Command →systemctl status NetworkManager(check the status of Network Manager)

```
[root@localhost vikash]# systemctl status NetworkManager
■ NetworkManager.service - Network Manager
   Loaded: loaded (/usr/lib/systemd/system/NetworkManager.service; enabled; vendor preset: enabled)
   Active: active (running) since Mon 2023-01-30 20:47:11 IST; 13min ago
     Docs: man:NetworkManager(8)
   Main PID: 683 (NetworkManager)
    CGroup: /system.slice/NetworkManager.service
            └─683 /usr/sbin/NetworkManager --no-daemon
              └─808 /sbin/dhclient -d -q -sf /usr/libexec/nm-dhcp-helper -pf /var/run/dhclient-enp0s...

Jan 30 20:47:13 localhost.localdomain NetworkManager[683]: <info> [1675091833.3612] device (en...')
Jan 30 20:47:13 localhost.localdomain NetworkManager[683]: <info> [1675091833.3620] device (en...')
Jan 30 20:47:13 localhost.localdomain NetworkManager[683]: <info> [1675091833.3633] device (en...')
Jan 30 20:47:13 localhost.localdomain dhclient[808]: bound to 192.168.0.102 -- renewal in 32521...s.
Jan 30 20:47:13 localhost.localdomain NetworkManager[683]: <info> [1675091833.3693] manager: N...AL
Jan 30 20:47:13 localhost.localdomain NetworkManager[683]: <info> [1675091833.3797] manager: N...TE
Jan 30 20:47:13 localhost.localdomain NetworkManager[683]: <info> [1675091833.3802] policy: se...NS
Jan 30 20:47:13 localhost.localdomain NetworkManager[683]: <info> [1675091833.4031] device (en...d.
Jan 30 20:47:13 localhost.localdomain NetworkManager[683]: <info> [1675091833.4076] manager: N...AL
Jan 30 20:47:13 localhost.localdomain NetworkManager[683]: <info> [1675091833.4174] manager: s...te
Hint: Some lines were ellipsized, use -l to show in full.
```

→Command→systemctl stop NetworkManager(used to stop Network Manager)

```
[root@localhost vikash]# systemctl stop NetworkManager
```

→Command→ systemctl disable NetworkManager(used to disable the Network Manager)

```
[root@localhost vikash]# systemctl disable NetworkManager
Removed symlink /etc/systemd/system/multi-user.target.wants/NetworkManager.service.
Removed symlink /etc/systemd/system/dbus-org.freedesktop.nm-dispatcher.service.
Removed symlink /etc/systemd/system/network-online.target.wants/NetworkManager-wait-online.service.
```

- Step 3.5→now, we are going to check the status of firewall ,if active stop and disable it.

→Command→systemctl status firewalld (check the status of firewall)

```
[root@localhost vikash]# systemctl status firewalld
■ firewalld.service - firewalld - dynamic firewall daemon
   Loaded: loaded (/usr/lib/systemd/system/firewalld.service; enabled; vendor preset: enabled)
   Active: active (running) since Mon 2023-01-30 20:47:10 IST; 15min ago
     Docs: man:firewalld(1)
   Main PID: 682 (firewalld)
    CGroup: /system.slice/firewalld.service
            └─682 /usr/bin/python2 -Es /usr/sbin/firewalld --nofork --nopid

Jan 30 20:47:09 localhost.localdomain systemd[1]: Starting firewalld - dynamic firewall daemon...
Jan 30 20:47:10 localhost.localdomain systemd[1]: Started firewalld - dynamic firewall daemon.
Jan 30 20:47:11 localhost.localdomain firewalld[682]: WARNING: AllowZoneDrifting is enabled. Th...w.
Hint: Some lines were ellipsized, use -l to show in full.
```

→Command→systemctl stop firewalld (stop the firewall)

```
[root@localhost vikash]# systemctl stop firewalld
```

→Command→systemctl disable firewalld (disable the firewall)

```
[root@localhost vikash]# systemctl disable firewalld
Removed symlink /etc/systemd/system/multi-user.target.wants/firewalld.service.
Removed symlink /etc/systemd/system/dbus-org.fedoraproject.FirewallD1.service.
```

- Step 3.6 → now, we are going to enable and start the network service  
→ `systemctl enable network` (enable the network)

```
[root@localhost vikash]# systemctl enable network
network.service is not a native service, redirecting to /sbin/chkconfig.
Executing /sbin/chkconfig network on
```

→systemctl start network (start the network)

```
[root@localhost vikash]# systemctl start network
```

- Step 3.7→check interface current settings
  - command→cat /etc/sysconfig/network-scripts/ifcfg-enp0s3

```

root@localhost vikashl# cat /etc/sysconfig/network-scripts/ifcfg-ens3
TYPE="Ethernet"
PROXY_METHOD="none"
BROWSER_ONLY="no"
BOOTPROTO="dhcp"
DEFROUTE="yes"
IPV4_FAILURE_FATAL="no"
IPV6INIT="no"
IPV6_AUTOCONF="yes"
IPV6_DEFROUTE="yes"
IPV6_FAILURE_FATAL="no"
IPV6_ADDR_GEN_MODE="stable-privacy"
NAME="ens3"
UUID="9dfb907b-b4bf-4821-a922-283fdb6c0b2b"
DEVICE="ens3"
ONBOOT="yes"

```

- Step 3.8 → now, disable selinux from its config file /etc/selinux/config  
→ vi /etc/selinux/config (SELINUX=disabled)

```
[root@localhost vikash]# vi /etc/selinux/config_
```

```
## This file controls the state of SELinux on the system.
## SELINUX= can take one of these three values:
##     enforcing - SELinux security policy is enforced.
##     permissive - SELinux prints warnings instead of enforcing.
##     disabled - No SELinux policy is loaded.
SELINUX=disabled
## SELINUXTYPE= can take one of three values:
##     targeted - Targeted processes are protected,
##     minimum - Modification of targeted policy. Only selected processes are protected.
##     mls - Multi Level Security protection.
SELINUXTYPE=targeted
```

- Step 3.9→after disabling selinux reboot your system  
→command→reboot

```
[root@localhost vikash]# reboot_
```

- Step 3.10→ after the reboot check the status of selinux, it should be disabled  
→command→getenforce

```
[vikash@localhost ~]$ getenforce  
Disabled
```

- Step 3.11→ now, we are going to install the latest release of openstack train package.  
→command→sudo yum install -y centos-release-openstack-train

```
[root@localhost vikash]# sudo yum install -y centos-release-openstack-train
```

```
-----
Total                                                                    63 kB/s | 35 kB  00:00:00
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Importing GPG key 0xF4A80EB5:
  Userid      : "CentOS-7 Key (CentOS 7 Official Signing Key) <security@centos.org>"
  Fingerprint: 6341 ab27 53d7 8a78 a7c2 7bb1 24c6 a8a7 f4a8 0eb5
  Package     : centos-release-7-9.2009.1.el7.centos.x86_64 (@anaconda)
  From        : /etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : centos-release-storage-common-2-2.el7.centos.noarch           1/6
  Installing : centos-release-nfs-ganesha28-1.0-3.el7.centos.noarch          2/6
  Installing : centos-release-ceph-nautilus-1.2-2.el7.centos.noarch          3/6
  Installing : centos-release-virt-common-1-1.el7.centos.noarch              4/6
  Installing : centos-release-gemu-ev-1.0-4.el7.centos.noarch                5/6
  Installing : centos-release-openstack-train-1-1.el7.centos.noarch           6/6
  Verifying  : centos-release-openstack-train-1-1.el7.centos.noarch          1/6
  Verifying  : centos-release-virt-common-1-1.el7.centos.noarch              2/6
  Verifying  : centos-release-ceph-nautilus-1.2-2.el7.centos.noarch          3/6
  Verifying  : centos-release-nfs-ganesha28-1.0-3.el7.centos.noarch          4/6
  Verifying  : centos-release-storage-common-2-2.el7.centos.noarch           5/6
  Verifying  : centos-release-gemu-ev-1.0-4.el7.centos.noarch                6/6

Installed:
  centos-release-openstack-train.noarch 0:1-1.el7.centos

Dependency Installed:
  centos-release-ceph-nautilus.noarch 0:1.2-2.el7.centos
  centos-release-nfs-ganesha28.noarch 0:1.0-3.el7.centos
  centos-release-gemu-ev.noarch 0:1.0-4.el7.centos
  centos-release-storage-common.noarch 0:2-2.el7.centos
  centos-release-virt-common.noarch 0:1-1.el7.centos

Complete!
[root@localhost vikash]# _
```

→command→ sudo yum install yum-utils(installing Yum-utils provides additional functionality to the standard YUM package manager)

```
[root@localhost vikash]# sudo yum install yum-utils_
```

```
(3/4): python-kitchen-1.1.1-5.el7.noarch.rpm                               | 267 kB  00:00:00
warning: /var/cache/yum/x86_64/7/centos-openstack-train/packages/python2-charDET-3.0.4-7.el7.noarch.
rpm: Header V4 RSA-SHA1 Signature, key ID 764429e6: NOKEY
Public key for python2-charDET-3.0.4-7.el7.noarch.rpm is not installed
(4/4): python2-charDET-3.0.4-7.el7.noarch.rpm                               | 186 kB  00:00:00
-----
Total                                                                    1.9 MB/s | 822 kB  00:00:00
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-SIG-Cloud
Importing GPG key 0x764429E6:
  Userid      : "CentOS Cloud SIG (http://wiki.centos.org/SpecialInterestGroup/Cloud) <security@centos
  .org>"
  Fingerprint: 736a f511 6d9c 40e2 af6b 074b f9b9 fee7 7644 29e6
  Package     : centos-release-openstack-train-1-1.el7.centos.noarch (@extras)
  From        : /etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-SIG-Cloud
Is this ok [y/N]: y
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : libxml2-python-2.9.1-6.el7_9.6.x86_64                         1/4
  Installing : python2-charDET-3.0.4-7.el7.noarch                           2/4
  Installing : python-kitchen-1.1.1-5.el7.noarch                            3/4
  Installing : yum-utils-1.1.31-54.el7_8.noarch                             4/4
  Verifying  : python2-charDET-3.0.4-7.el7.noarch                           1/4
  Verifying  : python-kitchen-1.1.1-5.el7.noarch                            2/4
  Verifying  : yum-utils-1.1.31-54.el7_8.noarch                             3/4
  Verifying  : libxml2-python-2.9.1-6.el7_9.6.x86_64                       4/4

Installed:
  yum-utils.noarch 0:1.1.31-54.el7_8

Dependency Installed:
  libxml2-python.x86_64 0:2.9.1-6.el7_9.6          python-kitchen.noarch 0:1.1.1-5.el7
  python2-charDET.noarch 0:3.0.4-7.el7

Complete!
[root@localhost vikash]# _
```

→command→ sudo yum-config-manager --enable openstack-train(here, yum-config-manager is used to enable openstack train)

```
[root@localhost vikash]# sudo yum-config-manager --enable openstack-train
Loaded plugins: fastestmirror
```

- Step 3.12→ now, we are going to updates our current packages .

→command→yum update -y

```
[root@localhost vikash]# yum update -y
```

```
Updated:
bind-export-libs.x86_64 32:9.11.4-26.P2.el7_9.13
ca-certificates.noarch 0:2022.2.54-74.el7_9
expat.x86_64 0:2.1.0-15.el7_9
grub2.x86_64 1:2.02-0.87.0.2.el7.centos.11
grub2-common.noarch 1:2.02-0.87.0.2.el7.centos.11
grub2-pc.x86_64 1:2.02-0.87.0.2.el7.centos.11
grub2-pc-modules.noarch 1:2.02-0.87.0.2.el7.centos.11
grub2-tools.x86_64 1:2.02-0.87.0.2.el7.centos.11
grub2-tools-extra.x86_64 1:2.02-0.87.0.2.el7.centos.11
grub2-tools-minimal.x86_64 1:2.02-0.87.0.2.el7.centos.11
kernel-tools.x86_64 0:3.10.0-1160.83.1.el7
kernel-tools-libs.x86_64 0:3.10.0-1160.83.1.el7
kpartx.x86_64 0:0.4.9-136.el7_9
krb5-libs.x86_64 0:1.15.1-55.el7_9
mariadb-libs.x86_64 3:10.3.20-3.el7.0.0.rdo1
microcode_ctl.x86_64 2:2.1-73.15.el7_9
nspr.x86_64 0:4.34.0-3.1.el7_9
nss.x86_64 0:3.79.0-4.el7_9
nss-softokn.x86_64 0:3.79.0-4.el7_9
nss-softokn-freebl.x86_64 0:3.79.0-4.el7_9
nss-sysinit.x86_64 0:3.79.0-4.el7_9
nss-tools.x86_64 0:3.79.0-4.el7_9
nss-util.x86_64 0:3.79.0-1.el7_9
python-perf.x86_64 0:3.10.0-1160.83.1.el7
sudo.x86_64 0:1.8.23-10.el7_9.3
systemd.x86_64 0:219-78.el7_9.7
systemd-libs.x86_64 0:219-78.el7_9.7
systemd-sysv.x86_64 0:219-78.el7_9.7
tuned.noarch 0:2.11.0-12.el7_9
tzdata.noarch 0:2022g-1.el7

Replaced:
python-pyudev.noarch 0:0.15-9.el7

Complete!
[root@localhost vikash]# _
```

- Step 3.13→ now, we are going to install openstack-packstack installer

→command→sudo yum install -y openstack-packstack

```
[root@localhost vikash]# sudo yum install -y openstack-packstack_
```

```
puppet-vswitch.noarch 0:11.5.0-1.el7
puppet-xinetd.noarch 0:3.3.0-1.d768da2git.el7
python-docutils.noarch 0:0.11.0-3.20130715svn7687.el7
python-enum34.noarch 0:1.0.4-1.el7
python-netifaces.x86_64 0:0.10.4-3.el7
python-ply.noarch 0:3.4-11.el7
python-pycparser.noarch 0:2.14-1.el7
python2-asn1crypto.noarch 0:0.23.0-2.el7
python2-cffi.x86_64 0:1.11.2-1.el7
python2-cryptography.x86_64 0:2.5-1.el7
python2-idna.noarch 0:2.5-1.el7
python2-ipaddress.noarch 0:1.0.18-5.el7
python2-netaddr.noarch 0:0.7.19-5.el7
python2-olefile.noarch 0:0.44-1.el7
python2-pbr.noarch 0:5.1.2-2.el7
python2-pillow.x86_64 0:5.4.1-3.el7
python2-pyOpenSSL.noarch 0:19.0.0-1.el7
python2-setuputils.noarch 0:40.8.0-1.el7
rsync.x86_64 0:3.1.2-12.el7_9
ruby.x86_64 0:2.0.0.648-39.el7_9
ruby-augeas.x86_64 0:0.5.0-1.el7
ruby-facter.x86_64 1:3.9.3-7.el7
ruby-irb.noarch 0:2.0.0.648-39.el7_9
ruby-libs.x86_64 0:2.0.0.648-39.el7_9
ruby-shadow.x86_64 0:1.4.1-23.el7
rubygem-bigdecimal.x86_64 0:1.2.0-39.el7_9
rubygem-io-console.x86_64 0:0.4.2-39.el7_9
rubygem-json.x86_64 0:1.7.7-39.el7_9
rubygem-pathspec.noarch 0:0.2.1-3.el7
rubygem-psych.x86_64 0:2.0.0-39.el7_9
rubygem-rdoc.noarch 0:4.0.0-39.el7_9
rubygem-rgen.noarch 0:0.6.6-2.el7
rubygems.noarch 0:2.0.14.1-39.el7_9
yaml-cpp.x86_64 0:0.5.1-6.el7

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

- Step 3.14→ before installing check the IP addresses on your machine  
→command→ ip address show

```
[root@localhost vikash]# ip address show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 08:00:27:3e:f3:2b brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.112/24 brd 192.168.0.255 scope global dynamic enp0s3
        valid_lft 86112sec preferred_lft 86112sec
    inet6 fe80::a00:27ff:fe3e:f32b/64 scope link
        valid_lft forever preferred_lft forever
```

- Step 3.15→now, run the packstack installer with below parameters

→Command→packstack --allinone --provision-demo=n --os-neutron-ovs-bridge-mappings=extnet:br-ex --os-neutron-ml2-mechanism-drivers=openvswitch --os-neutron-l2-agent=openvswitch --os-neutron-ovs-bridge-interfaces=br-ex:enp0s3 --os-neutron-ml2-type-drivers=vxlan,flat --os-neutron-ml2-tenant-network-types=vxlan

```
[root@localhost vikash]# packstack --allinone --provision-demo=n --os-neutron-ovs-bridge-mappings=extnet:br-ex --os-neutron-ml2-mechanism-drivers=openvswitch --os-neutron-l2-agent=openvswitch --os-neutron-ovs-bridge-interfaces=br-ex:enp0s3 --os-neutron-ml2-type-drivers=vxlan,flat --os-neutron-ml2-tenant-network-types=vxlan_
```

```
Preparing Neutron DHCP Agent entries [ DONE ]
Preparing Neutron Metering Agent entries [ DONE ]
Checking if NetworkManager is enabled and running [ DONE ]
Preparing OpenStack Client entries [ DONE ]
Preparing Horizon entries [ DONE ]
Preparing Swift builder entries [ DONE ]
Preparing Swift proxy entries [ DONE ]
Preparing Swift storage entries [ DONE ]
Preparing Gnocchi entries [ DONE ]
Preparing Redis entries [ DONE ]
Preparing Ceilometer entries [ DONE ]
Preparing Aodh entries [ DONE ]
Preparing Puppet manifests [ DONE ]
Copying Puppet modules and manifests [ DONE ]
Applying 192.168.0.112_controller.pp [ DONE ]
192.168.0.112_controller.pp: [ DONE ]
Applying 192.168.0.112_network.pp [ DONE ]
192.168.0.112_network.pp: [ DONE ]
Applying 192.168.0.112_compute.pp [ DONE ]
192.168.0.112_compute.pp: [ DONE ]
Applying Puppet manifests [ DONE ]
Finalizing [ DONE ]

**** Installation completed successfully ****

Additional information:
* A new answerfile was created in: /root/packstack-answers-20230131-103734.txt
* 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 192.168.0.112. To use the command line tools you need to source the file.
* To access the OpenStack Dashboard browse to http://192.168.0.112/dashboard .
Please, find your login credentials stored in the keystonerc_admin in your home directory.
* The installation log file is available at: /var/tmp/packstack/20230131-103734-4xYAcZ/openstack-setup.log
* The generated manifests are available at: /var/tmp/packstack/20230131-103734-4xYAcZ/manifests
[root@localhost vikash]# _
```



- Step 3.16→now, again check the IP addresses on your machine  
→command→ ip address show

```
[root@localhost vikash]# ip address show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast master ovs-system state UP group default qlen 1000
    link/ether 08:00:27:3e:f3:2b brd ff:ff:ff:ff:ff:ff
    inet6 fe80::a00:27ff:fe3e:f32b/64 scope link
        valid_lft forever preferred_lft forever
3: ovs-system: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default qlen 1000
    link/ether 1e:07:66:0e:0c:bf brd ff:ff:ff:ff:ff:ff
4: br-tun: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default qlen 1000
    link/ether ee:d0:1e:20:86:49 brd ff:ff:ff:ff:ff:ff
5: br-ex: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UNKNOWN group default qlen 1000
    link/ether 08:00:27:3e:f3:2b brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.112/24 brd 192.168.0.255 scope global dynamic br-ex
        valid_lft 85628sec preferred_lft 85628sec
    inet6 fe80::a00:27ff:fe3e:f32b/64 scope link
        valid_lft forever preferred_lft forever
6: br-int: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default qlen 1000
    link/ether 06:cf:af:18:56:43 brd ff:ff:ff:ff:ff:ff
[root@localhost vikash]#
```

- Step 3.17→now, make sure your ethernet interface settings look like this. If IP address exists you should remove it from the interface.  
→command→vi /etc/sysconfig/network-scripts/ifcfg-enp0s3  
TYPE=OVSPort  
NAME=enp0s3  
DEVICE=enp0s3  
DEVICETYPE=ovs  
OVS\_BRIDGE=br-ex  
ONBOOT=yes  
BOOTPROTO=none

```
[root@localhost vikash]# vi /etc/sysconfig/network-scripts/ifcfg-enp0s3_

DEVICE=enp0s3
NAME=enp0s3
DEVICETYPE=ovs
TYPE=OVSPort
OVS_BRIDGE=br-ex
ONBOOT=yes
BOOTPROTO=none

"etc/sysconfig/network-scripts/ifcfg-enp0s3" 7L, 97C
```

- Step 3.18→now, make sure your external bridge settings look like below(not same)\*  
 →command→vi /etc/sysconfig/network-scripts/ifcfg-br-ex  
 NAME=br-ex  
 DEVICETYPE=ovs  
 TYPE=OVSBridge  
 OVSBOOTPROTO="none"  
 IPADDR=  
 PREFIX=  
 GATEWAY=  
 IPV4\_FAILURE\_FATAL=no  
 IPV6INIT=no  
 DNS1= ONBOOT=yes

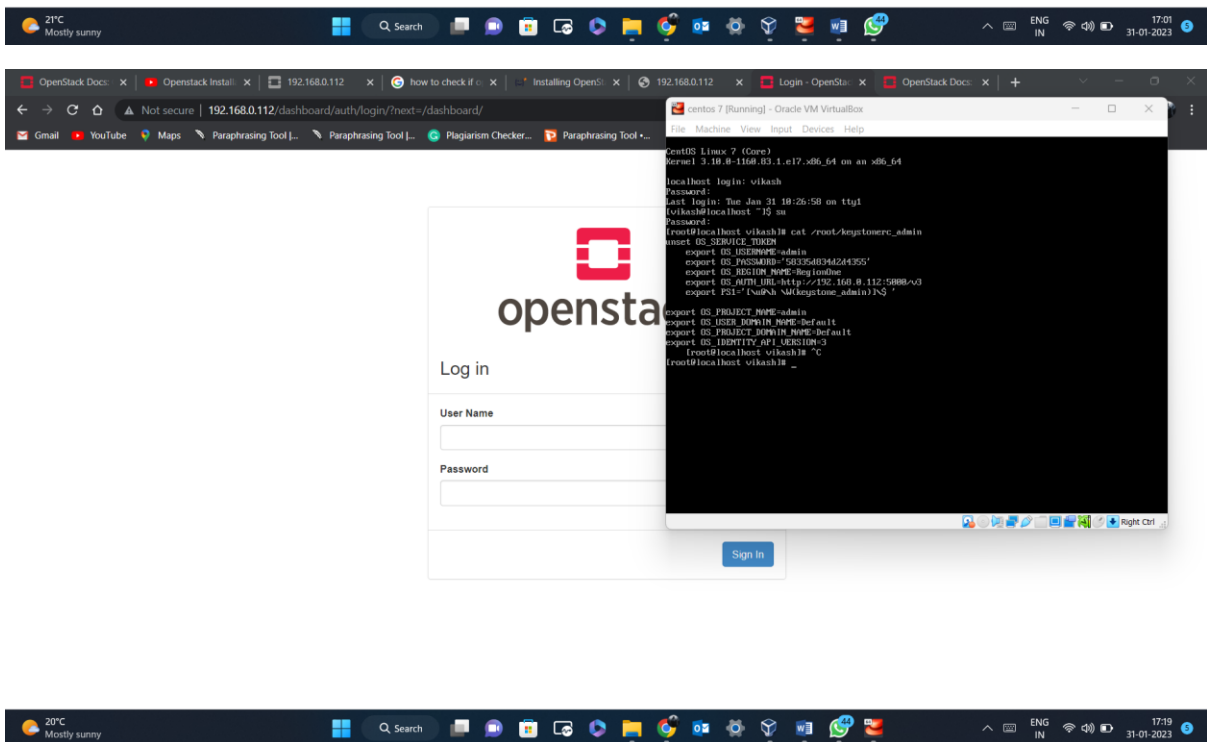
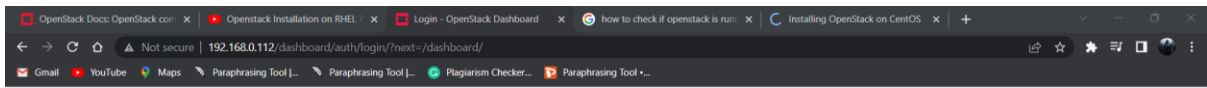
```
[root@localhost vikash]# vi /etc/sysconfig/network-scripts/ifcfg-br-ex_
PROXY_METHOD="none"
BROWSER_ONLY="no"
DEFROUTE="yes"
UUID="a4fe3f8b-c2dd-46bb-ae09-3df31b120eb0"
ONBOOT="yes"
DEVICE=br-ex
NAME=br-ex
DEVICETYPE=ovs
OVSBOOTPROTO="dhcp"
TYPE=OVSBridge
OVSdhcpINTERFACES=emp0s3
OVS_EXTRA="set bridge br-ex other-config:hwaddr=88:00:27:3e:f3:2b fail_mode=standalone"
...
"/etc/sysconfig/network-scripts/ifcfg-br-ex" 12L, 297C
```

- Step 3.19→now, to see admin username and password.  
 →command→cat /root/keystonerc\_admin

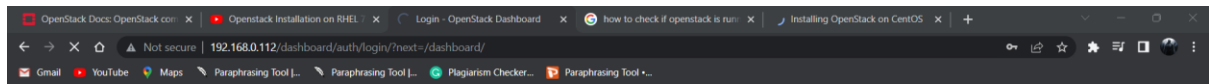
```
[root@localhost vikash]# cat /root/keystonerc_admin
unset OS_SERVICE_TOKEN
export OS_USERNAME=admin
export OS_PASSWORD='58335d834d2d4355'
export OS_REGION_NAME=RegionOne
export OS_AUTH_URL=http://192.168.0.112:5000/v3
export PS1='[\u@\h \W(keystone_admin)]\>'

export OS_PROJECT_NAME=admin
export OS_USER_DOMAIN_NAME=Default
export OS_PROJECT_DOMAIN_NAME=Default
export OS_IDENTITY_API_VERSION=3
[root@localhost vikash]#
```

- Step 3.20 → now, go to the provided openstack dashboard address during openstack - allinone installation( <http://192.168.0.112/dashboard>) on your browser.



- Step 3.21→now, we have to enter admin username and password.



openstack.

Log in

User Name

Password



- Step 3.22→login successful.

