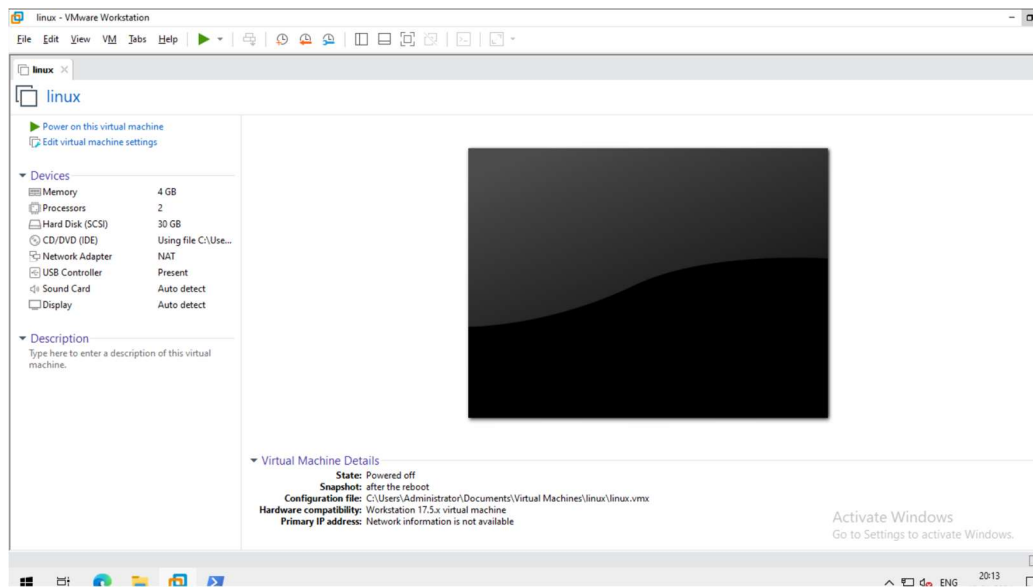


# CENTOS 7 INSTALLATION AND BASIC SETUP

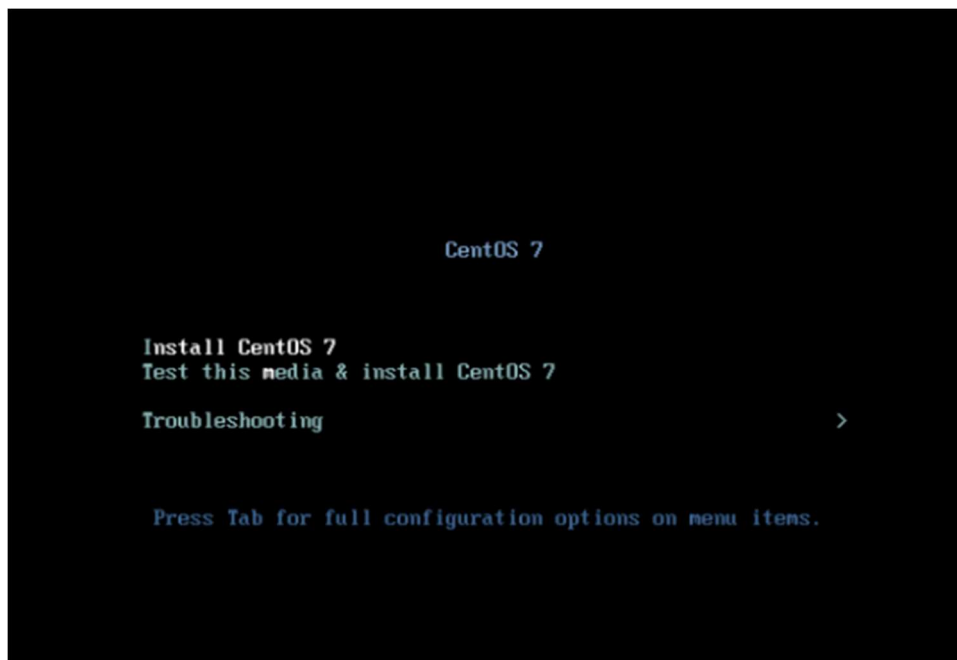
This guide provides step-by-step instructions for installing CentOS 7 on a virtual machine with specific hardware specifications, setting up essential configurations, accessing the system remotely, and performing basic administrative tasks.



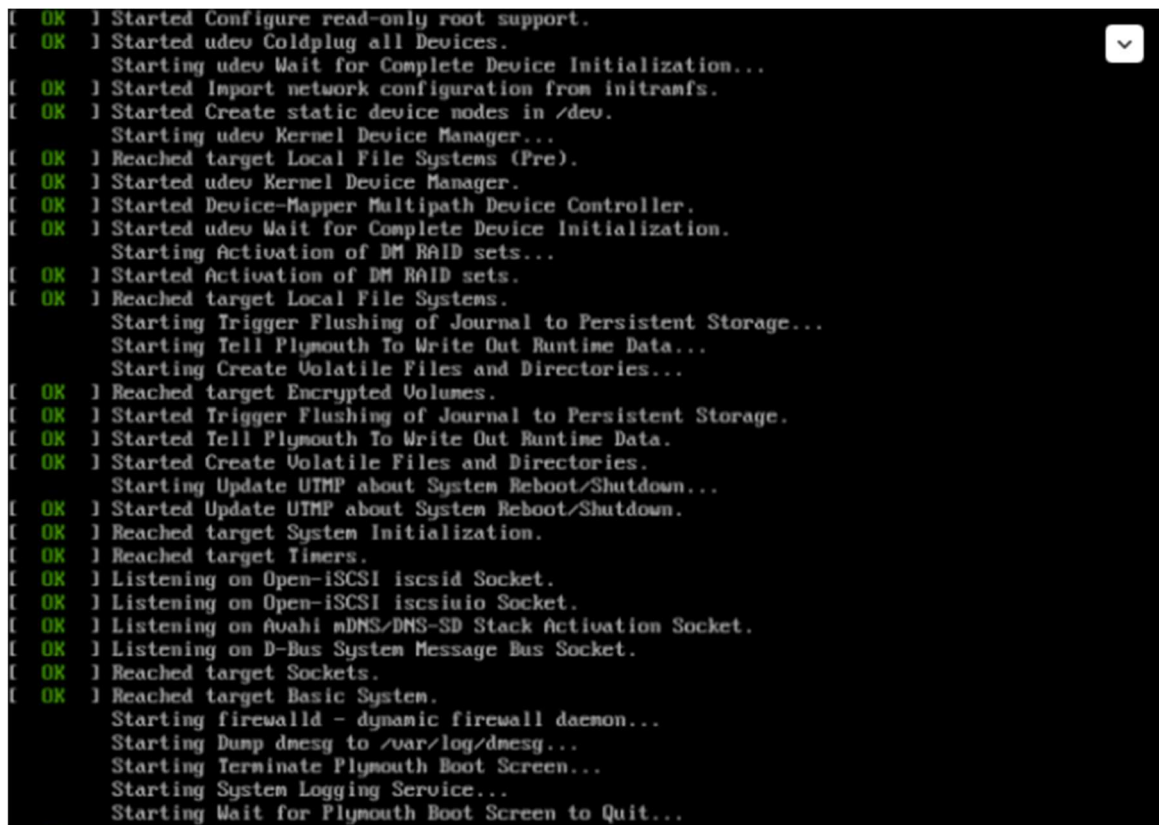
This is the step-by-step process for installing CentOS 7 on a virtual machine with specific hardware specifications: 4GB memory, 2 processors, and 30GB SCSI hard disk.

## Installation

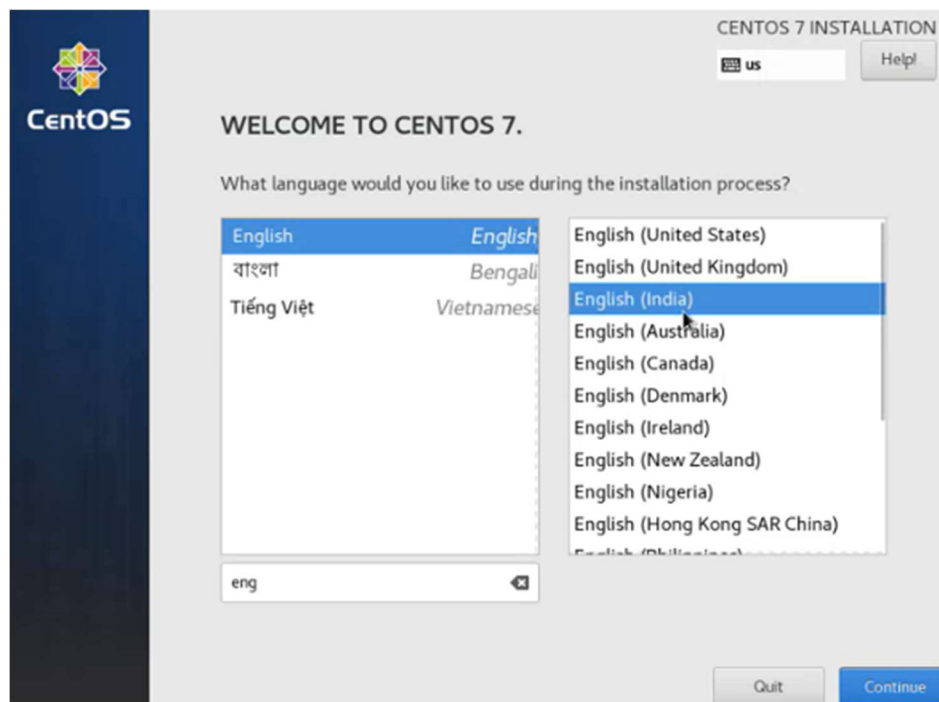
1. To begin, turn on the computer. Then, pick the bootable unit from the options. When the first CentOS 7 prompt appears, select "Install CentOS 7" by pressing the [Enter] key.



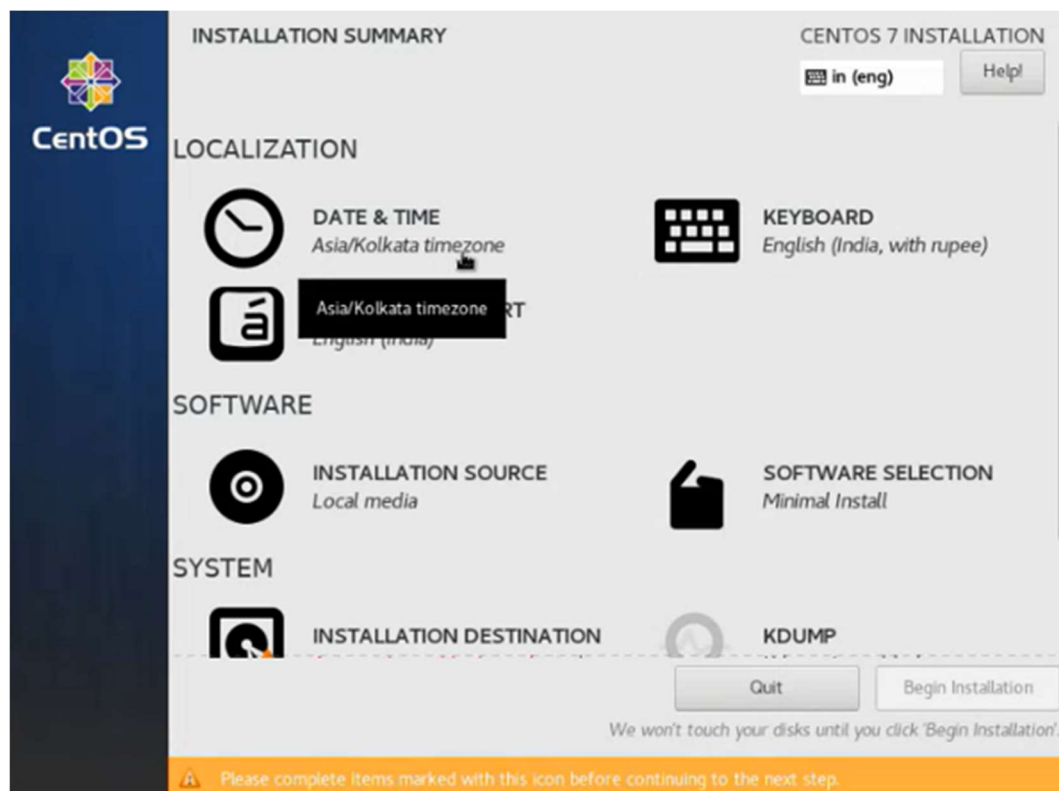
2. Once you've selected "Install CentOS 7," the system will start loading the installer from the media. After a moment, a Welcome screen will pop up.

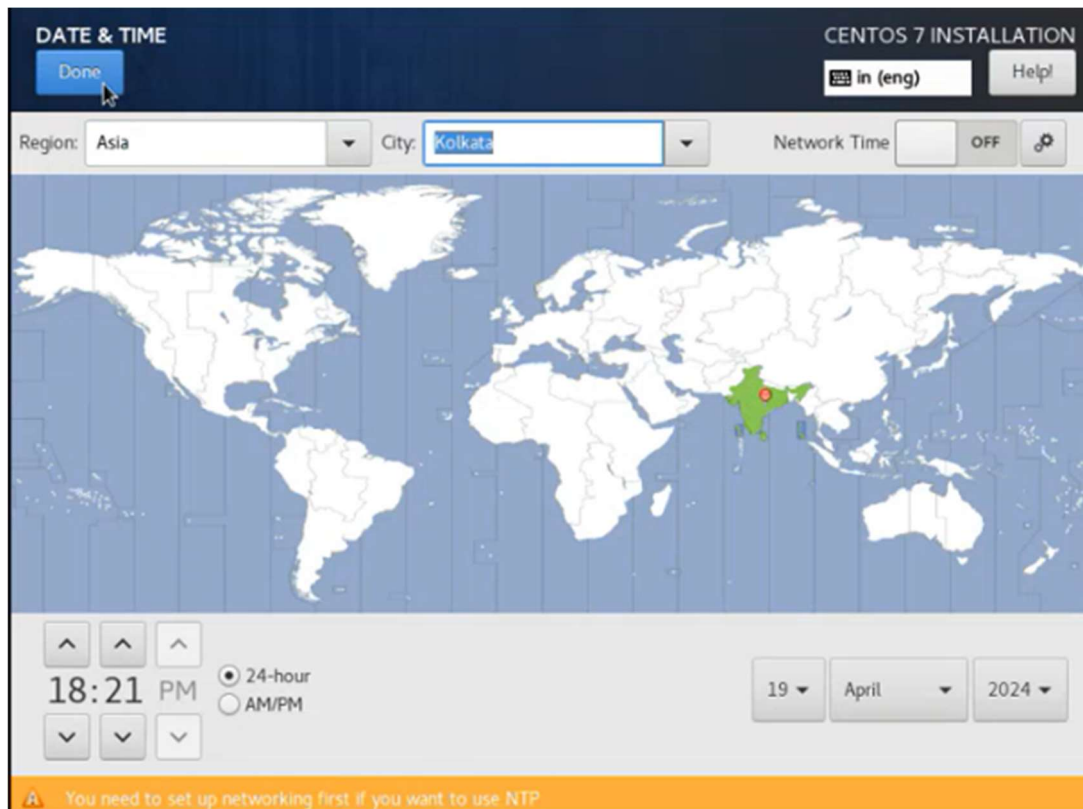


3. Next, choose your preferred installation process language. Once selected, click on "Continue" to proceed with the installation.

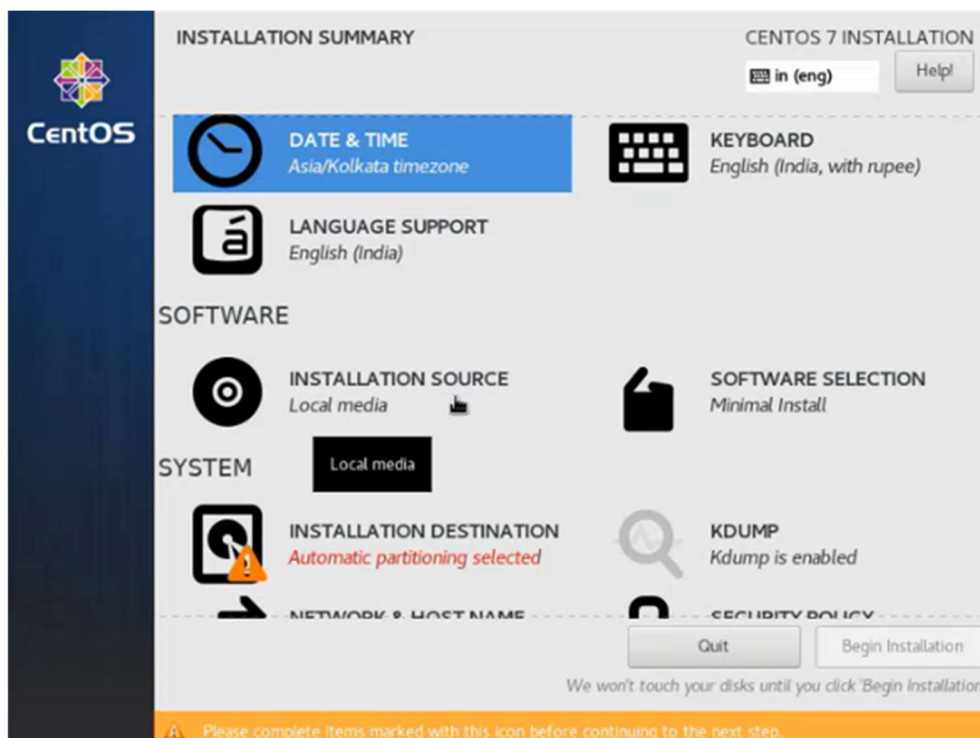


4. The next step is to click on Date & Time then select the server's physical location from the provided map (Here I selected Asia/Kolkata timezone )and hit on the upper Done button to apply configuration.





5. the next step is to choose the installation source. Stick with the default option of "Auto-detected installation media" and then select "Done" to move on to the next step.



INSTALLATION SOURCE

CENTOS 7 INSTALLATION

Done

in (eng)

Help!

Which installation source would you like to use?

☒ Auto-detected installation media:

Device: sr0  
Label: CentOS\_7\_x86\_64 

Verify

☐ On the network:

http//

Proxy setup...

☐ This URL refers to a mirror list.

**Additional repositories**

Enabled	Name

+

-

Name:

http//

☐ This URL refers to a mirror list.

Proxy URL:

User name:

Password:

⚠

 You need to configure the network to use a network installation source.

6. Next is to choose the system installation software. Here, select "Server with GUI" to ensure a complete server installation in graphical mode, which is helpful for easier navigation and management. Additionally, choose to select all add-ons environments to ensure you have access to a wide range of software tools and features and and click on "Done".

**CentOS**

# INSTALLATION SUMMARY

**DATE & TIME**  
Asia/Kolkata timezone

**KEYBOARD**  
English (India, with rupee)

**LANGUAGE SUPPORT**  
English (India)

## SOFTWARE

**INSTALLATION SOURCE**  
Local media

**SOFTWARE SELECTION**  
Minimal Install

## SYSTEM

**INSTALLATION DESTINATION**  
Automatic partitioning selected

**KDUMP**  
Kdump is enabled

**NETWORK & HOST NAME**

**SECURITY POLICY**

Quit

Begin Installation

We won't touch your disks until you click 'Begin Installation'.

Please complete items marked with this icon before continuing to the next step.

# SOFTWARE SELECTION

Done

## CENTOS 7 INSTALLATION

in (eng)

Help! (F1)

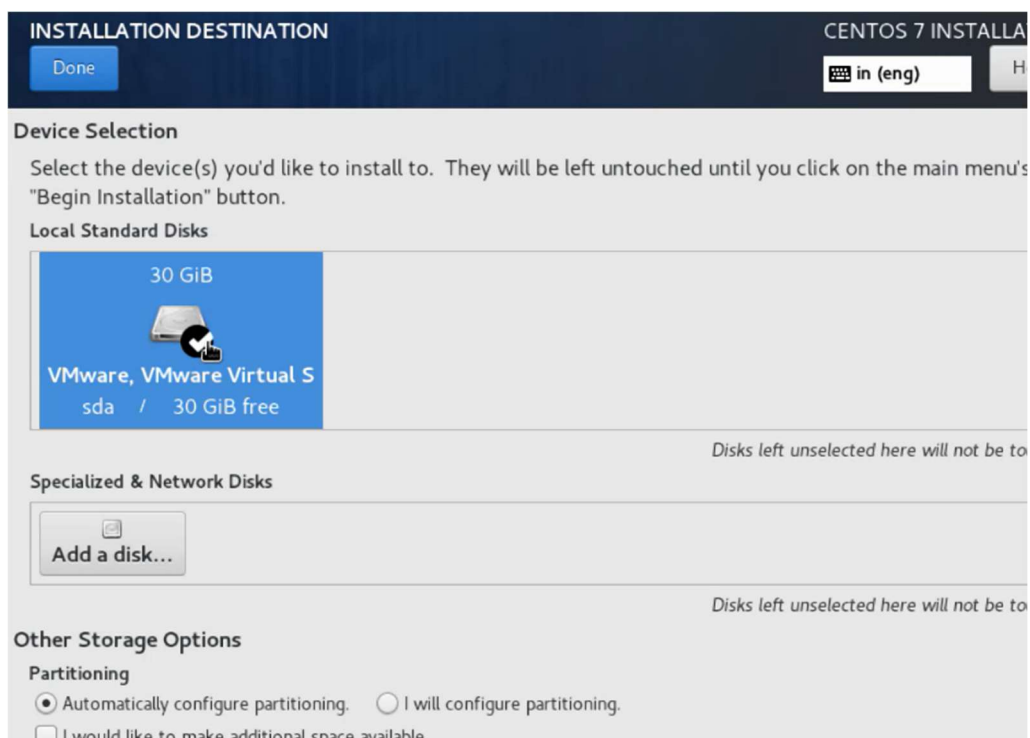
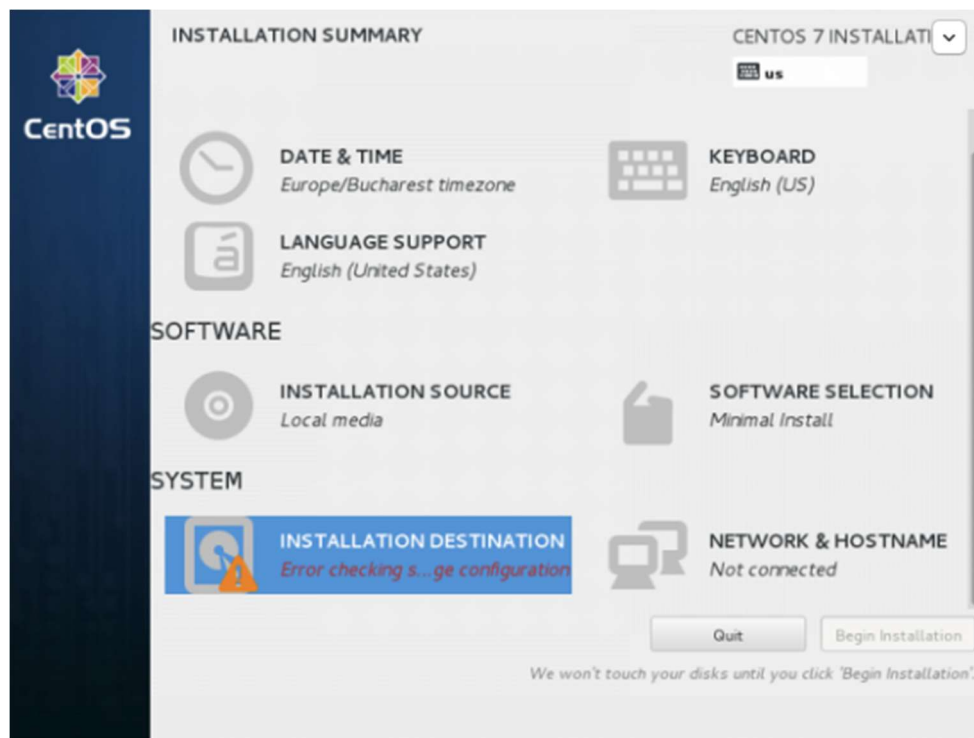
### Base Environment

- ☐ Minimal Install  
Basic functionality.
- ☐ Compute Node  
Installation for performing computation and processing.
- ☐ Infrastructure Server  
Server for operating network infrastructure services.
- ☐ File and Print Server  
File, print, and storage server for enterprises.
- ☐ Basic Web Server  
Server for serving static and dynamic internet content.
- ☐ Virtualization Host  
Minimal virtualization host.
- ☒ **Server with GUI**  
Server for operating network infrastructure services, with a GUI.
- ☐ GNOME Desktop  
GNOME is a highly intuitive and user friendly desktop environment.
- ☐ KDE Plasma Workspaces  
The KDE Plasma Workspaces, a highly-configurable graphical user interface which includes a panel, desktop, system icons and desktop widgets, and many powerful KDE applications.

### Add-Ons for Selected Environment

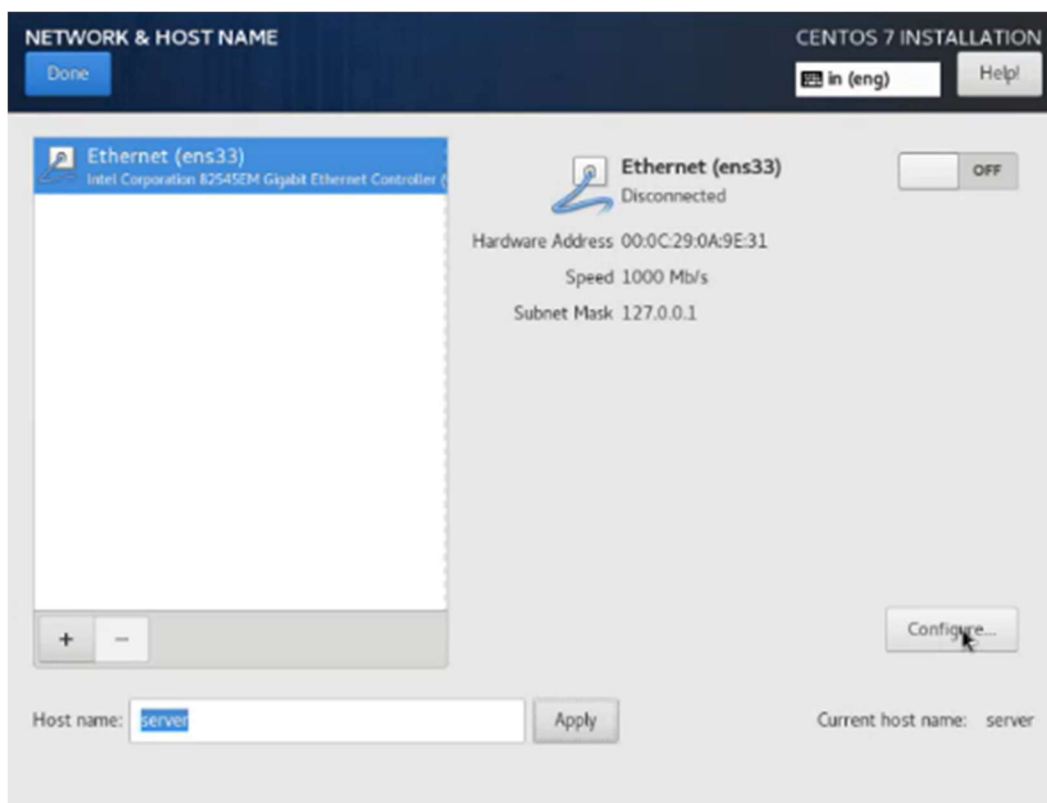
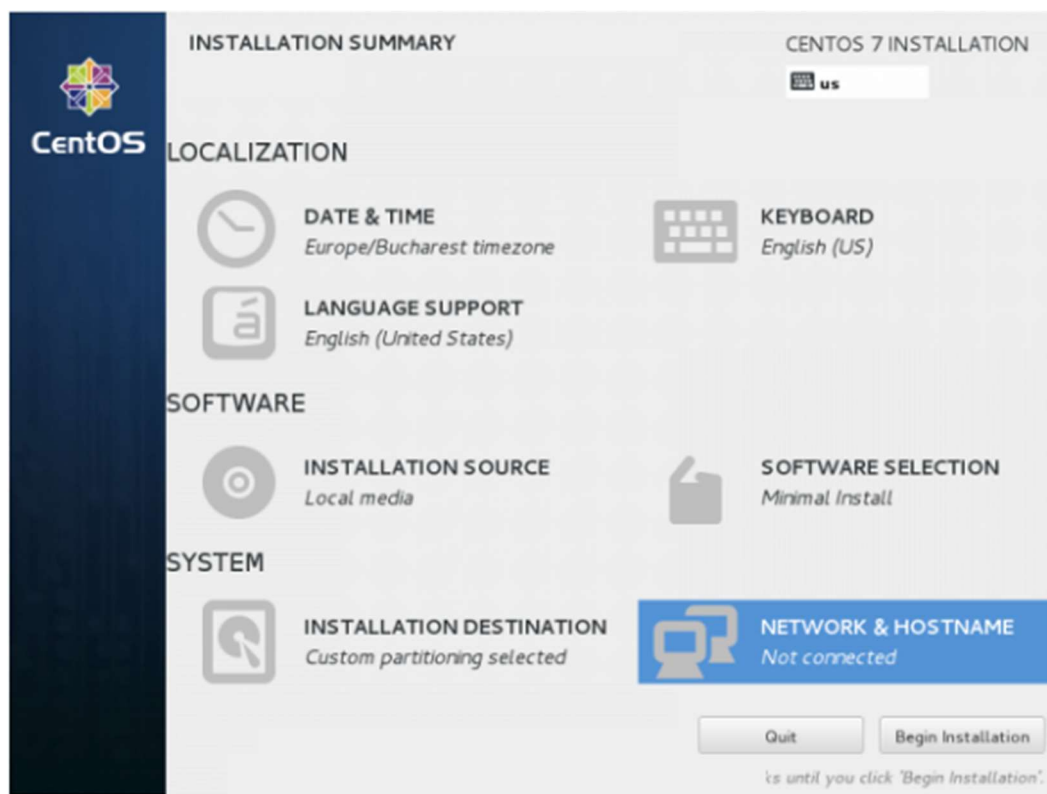
- ☒ **Remote Management for Linux**  
Remote management interface for CentOS Linux, including OpenML and SNMP.
- ☒ **Resilient Storage**  
Clustered storage, including the GFS2 file system.
- ☒ **Virtualization Client**  
Clients for installing and managing virtualization instances.
- ☒ **Virtualization Hypervisor**  
Smallest possible virtualization host installation.
- ☒ **Virtualization Tools**  
Tools for offline virtual image management.
- ☒ **Compatibility Libraries**  
Compatibility libraries for applications built on previous versions of CentOS Linux.
- ☒ **Development Tools**  
A basic development environment.
- ☒ **Security Tools**  
Security tools for integrity and trust verification.
- ☒ **Smart Card Support**  
Support for using smart card authentication.
- ☒ **System Administration Tools**  
Utilities useful in system administration.

7. The next step is to partition the hard drive. Click on the "Installation Destination" menu, where you'll see a list of available disks. Choose the local standard disk with a blue background and a white tick with a black background. then select the option to "automatically configure partitioning" and click on "Done". This will set up the partitions according to default settings, simplifying the process for you.



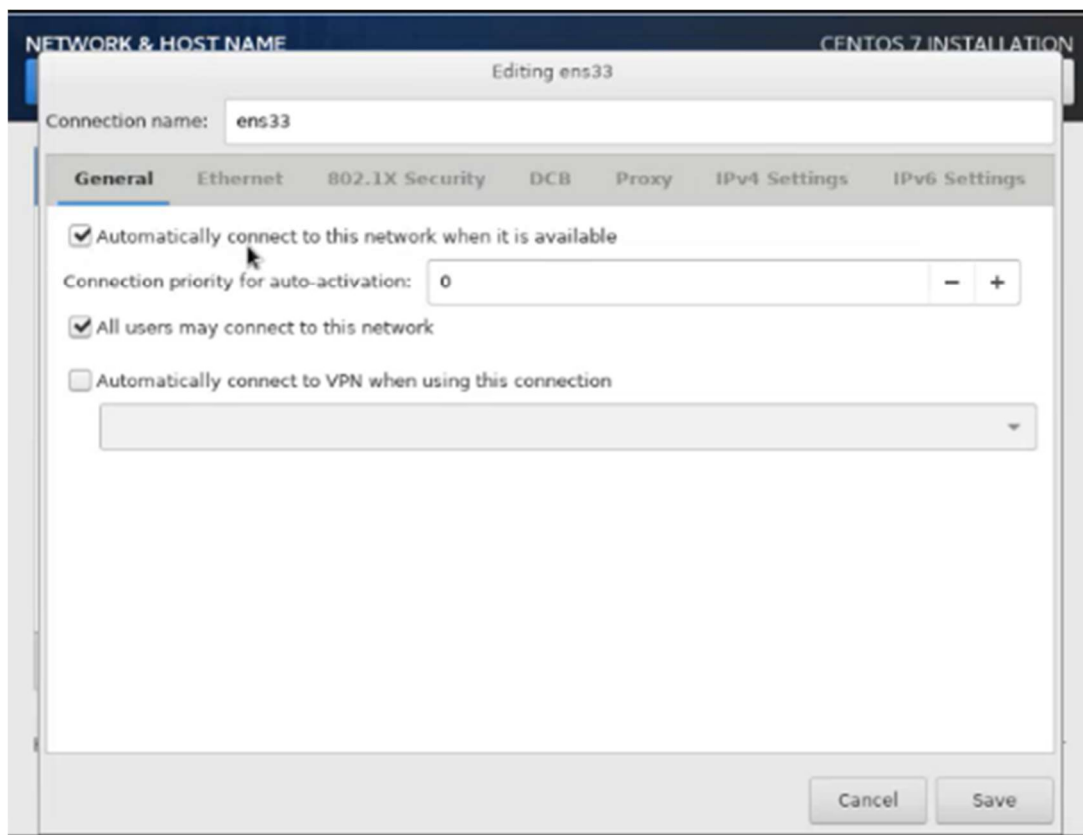


8. Next, navigate to the "Network & Hostname" section. Now the network is not connected, proceed by providing a hostname, Here it is 'server', and click on the apply button. Then, click on "Configure" to set up the network connection.

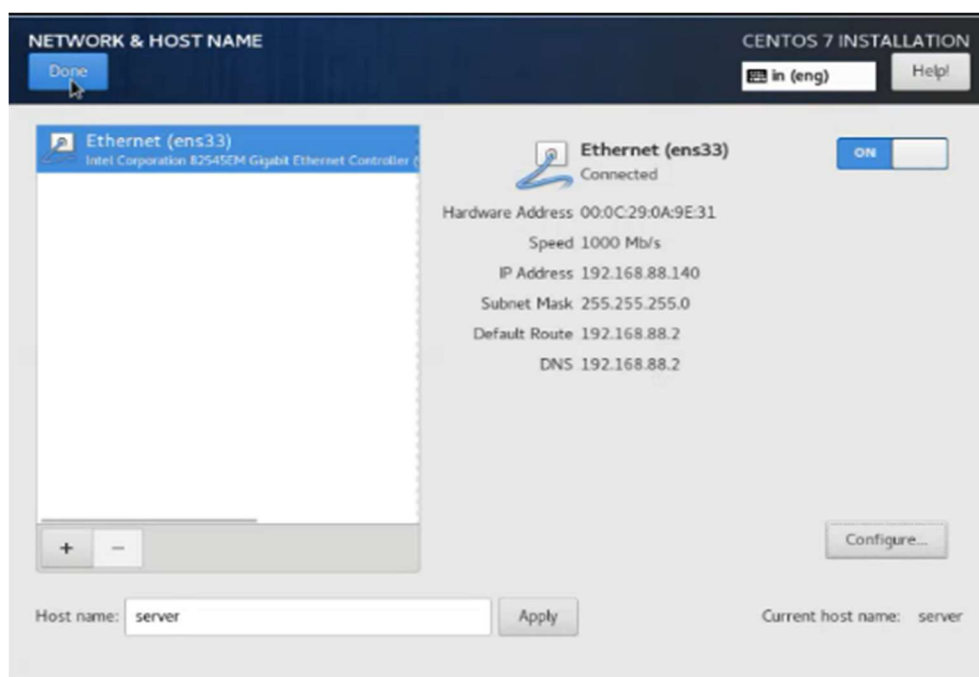




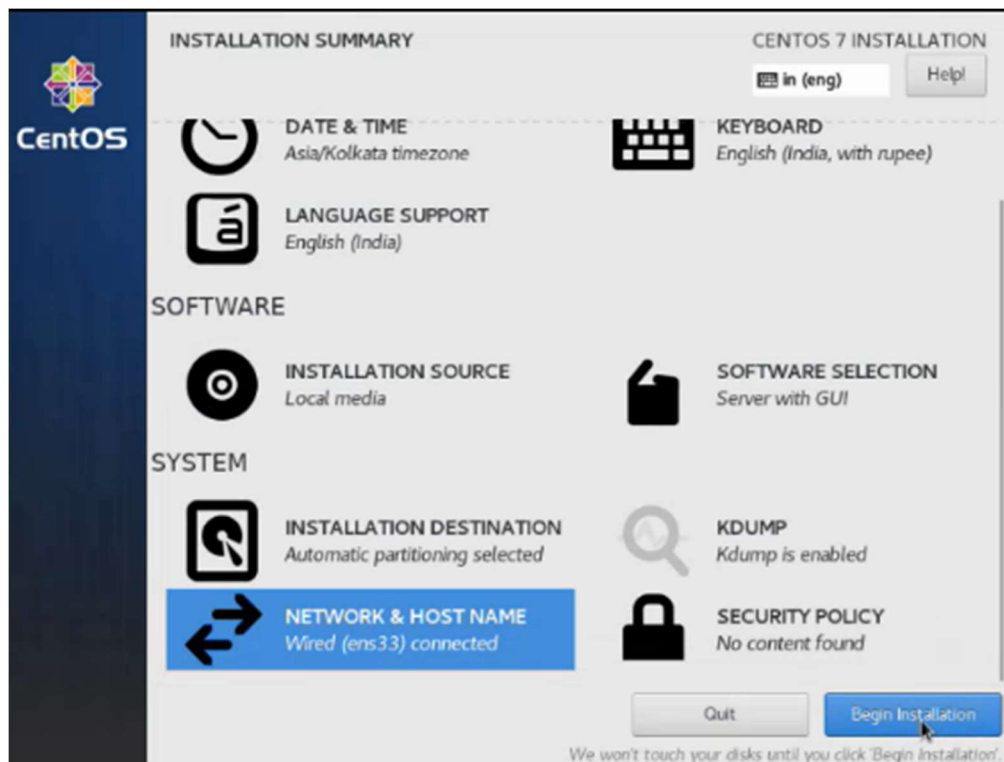
In the configuration window, click on "General" and check the option "Automatically connect to this network when it is available." Afterward, save the settings.



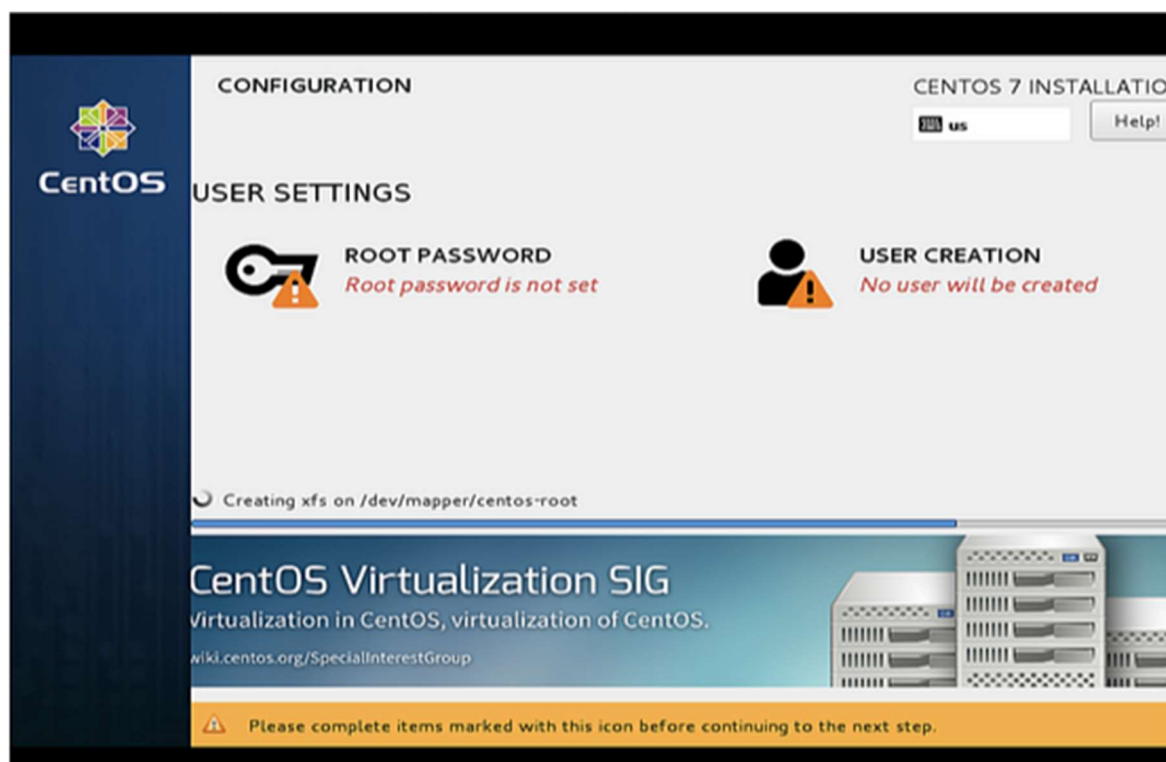
Now, enable the network interface by toggling the top Ethernet button to the ON position. Once enabled, verify the IP address, subnet, and DNS, which will be displayed on the screen. This ensures that your network connection is properly configured and active.



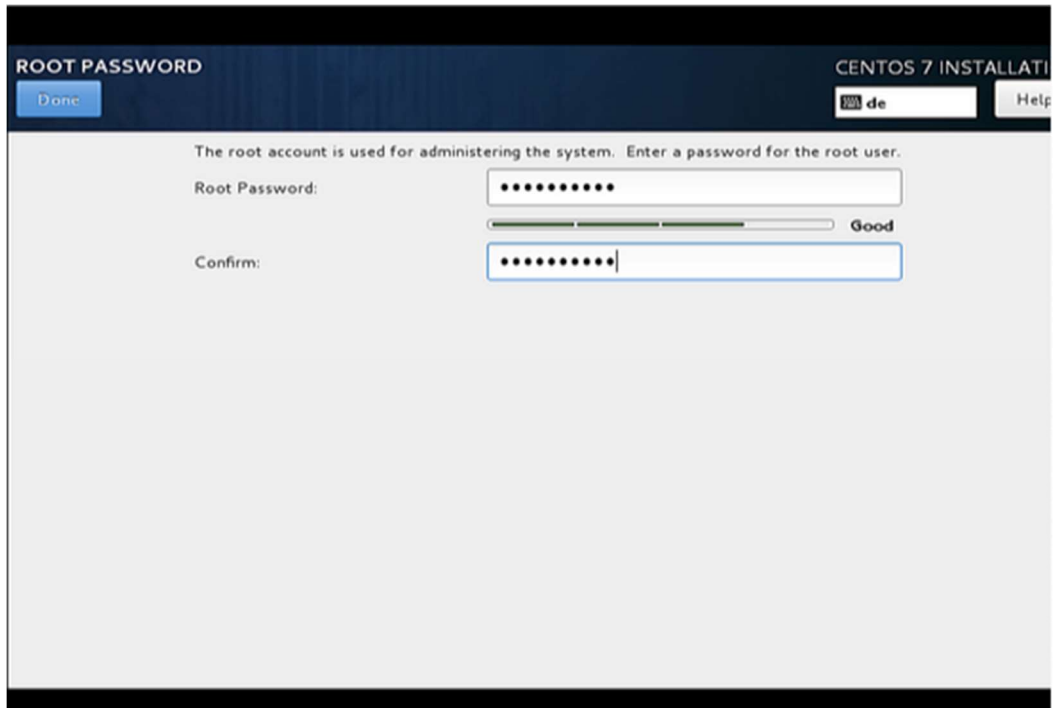
9. Now it's time to start the installation process by pressing on the Begin Installation button and setting up a strong password for the root account.



10. The installation starts now, you'll see a small blue progress bar in the window. After that, you'll be prompted to set the root password. Follow the instructions to set a secure password for the root user account. Once that's done, create a new user account also.



11. Enter a secure password and press Done



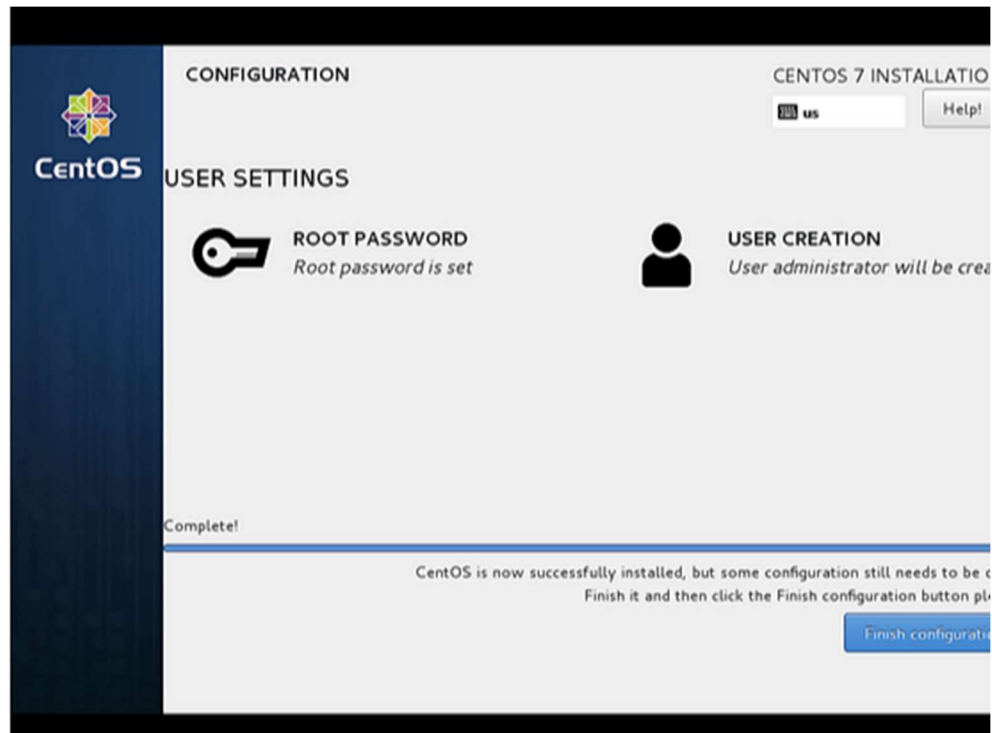
The screenshot shows the 'ROOT PASSWORD' screen in the CentOS 7 installation window. The title bar includes 'CENTOS 7 INSTALLATION' and a language dropdown set to 'de'. A 'Done' button is in the top left. The main text reads: 'The root account is used for administering the system. Enter a password for the root user.' Below this, there are two input fields: 'Root Password:' and 'Confirm:'. The 'Root Password' field contains ten dots, and a green progress bar below it is labeled 'Good'. The 'Confirm' field also contains ten dots. A 'Help' button is in the top right.

12. Next I will create user, as in my case I used the Full name "Aswani", check the options "make this user administrator" and "Require the password to use this account" and then press Done.

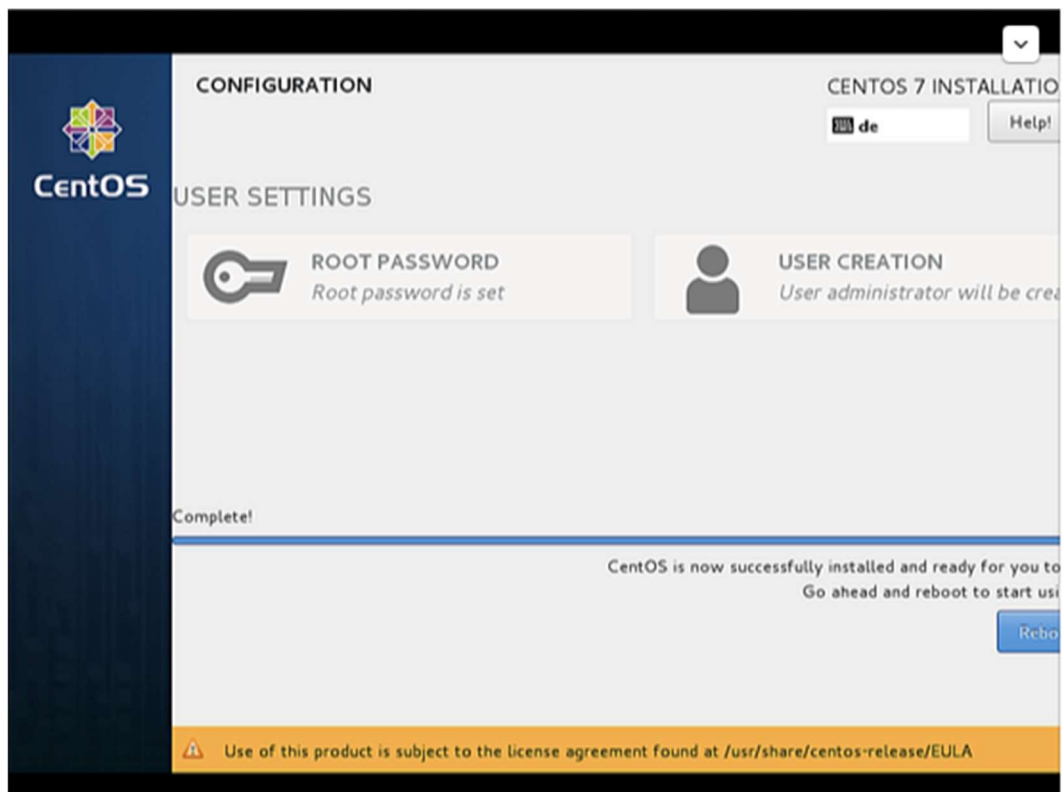


The screenshot shows the 'CREATE USER' screen in the CentOS 7 installation window. The title bar includes 'CENTOS 7 INSTALLATION' and a language dropdown set to 'in (eng)'. A 'Done' button is in the top left. The form contains the following fields and options: 'Full name' (text input), 'User name' (text input), a tip 'Tip: Keep your user name shorter than 32 characters and do not use spaces.', two checkboxes ('Make this user administrator' is unchecked, 'Require a password to use this account' is checked), 'Password' (text input), a progress bar below it labeled 'Empty', and 'Confirm password' (text input). An 'Advanced...' button is at the bottom. An orange error bar at the very bottom states 'The password is empty'.

13. Once the installation is done. Click on "Finish Configuration."



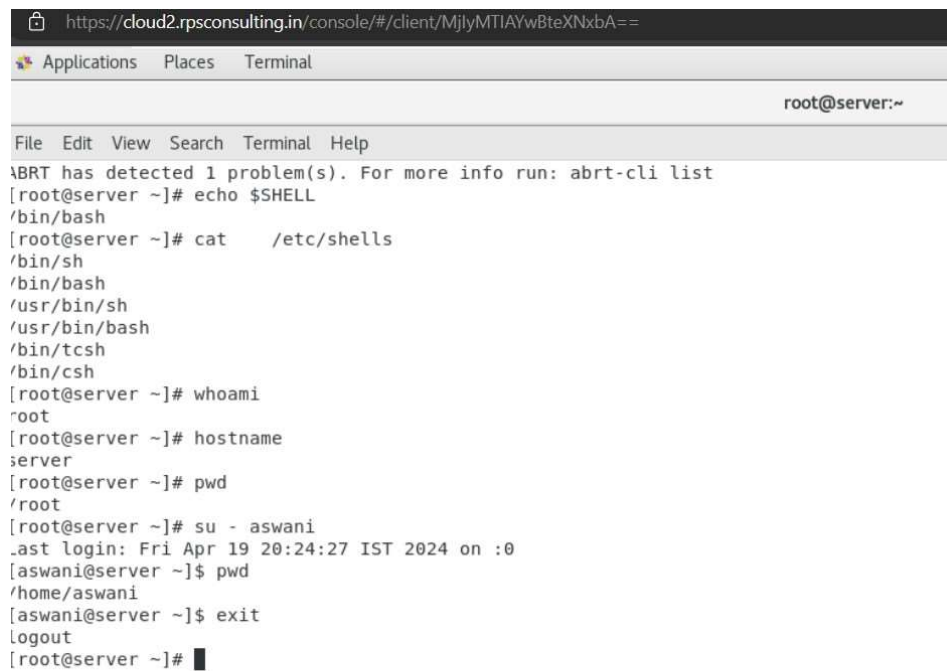
14. After completion of the installation, it will ask to reboot the server, just press the reboot button.



The server reboots and will request your username and password afterward.

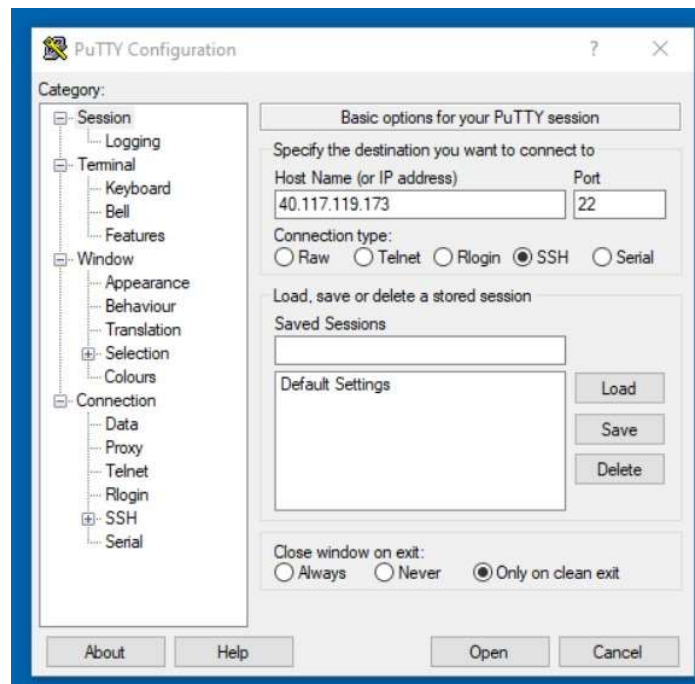
Login as Root: Log in with the root user credentials. Select "Not Listed" and enter the username as "root" and the password provided during installation.

1. These commands are used to navigate and manage files within the Linux file system, as well as to view system information.



```
https://cloud2.rpsconsulting.in/console/#/client/MjlyMTIAYwBteXNxbA==
Applications Places Terminal
root@server:~
File Edit View Search Terminal Help
\BRT has detected 1 problem(s). For more info run: abrt-cli list
[root@server ~]# echo $SHELL
/bin/bash
[root@server ~]# cat /etc/shells
/bin/sh
/bin/bash
/usr/bin/sh
/usr/bin/bash
/bin/tcsh
/bin/csh
[root@server ~]# whoami
root
[root@server ~]# hostname
server
[root@server ~]# pwd
/root
[root@server ~]# su - aswani
Last login: Fri Apr 19 20:24:27 IST 2024 on :0
[aswani@server ~]$ pwd
/home/aswani
[aswani@server ~]$ exit
logout
[root@server ~]#
```

2. Installed the PuTTY and gave an IP address as 40.117.119.173 and port as 22  
Make sure the connection type in SSH



3. Ifconfig: It Shows details about a network interface, such as IP address, netmask, and the broadcast.

```
https://cloud2.rpsconsulting.in/console/#/client/MjlyMTIAYw8teXNxbA==
Linux - VMware Workstation
File Edit View VM Tabs Help
Home Windows 10 x64 DC 2016 d01 DC member02 linux
Applications Places Terminal Fri 21:11
root@server:~
File Edit View Search Terminal Help
[root@server ~]# ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.19.134 netmask 255.255.255.0 broadcast 192.168.19.255
    inet6 fe80::3c5f:f322:14ea:b97 prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:d5:a5:63 txqueuelen 1000 (Ethernet)
    RX packets 489 bytes 33348 (32.5 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 427 bytes 41884 (40.9 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 98 bytes 8258 (8.0 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 98 bytes 8258 (8.0 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

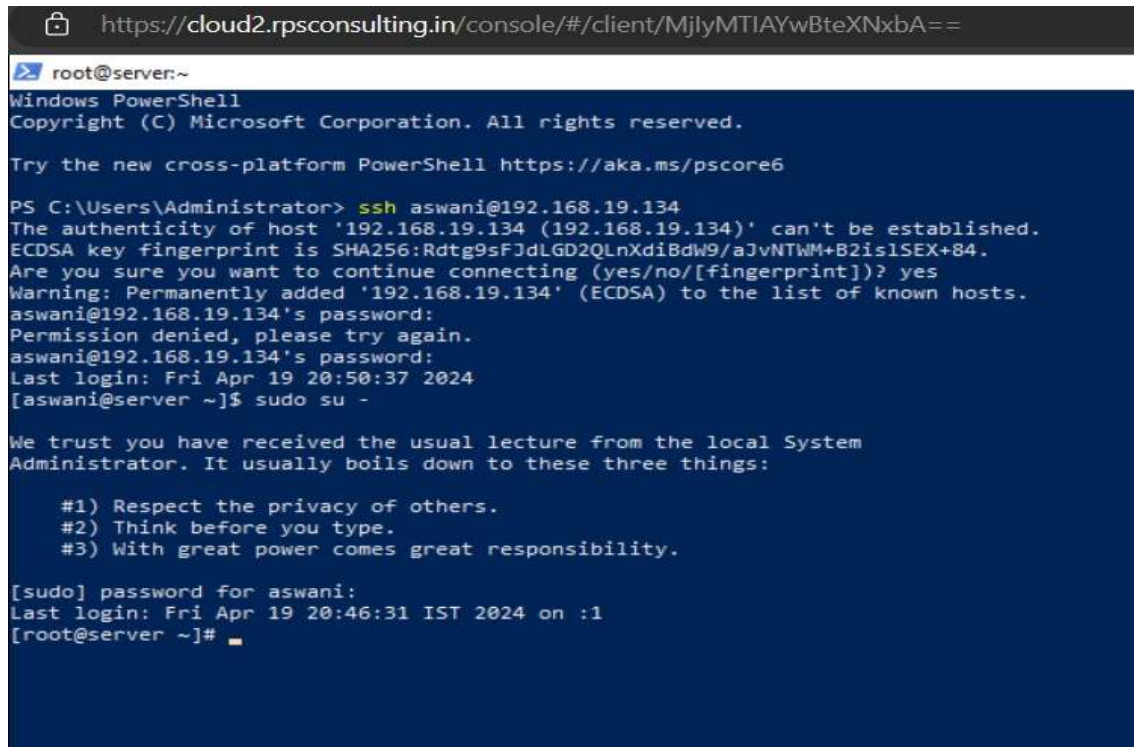
virbr0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    inet 192.168.122.1 netmask 255.255.255.0 broadcast 192.168.122.255
    ether 52:54:00:d7:89:13 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@server:~
Activate Windows
Go to Settings to activate Windows.
To return to your computer, move the mouse pointer outside or press Ctrl+Alt.
```

4. Later in Powershell,

SSH Connection: it is attempting to connect to a server with the IP address 192.168.19.134 using SSH.

This sequence of commands is typical for a user trying to access and perform administrative tasks on a remote server.



```
https://cloud2.rpsconsulting.in/console/#/client/MjlyMTIAYwBteXNxbA==
root@server:~
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Administrator> ssh aswani@192.168.19.134
The authenticity of host '192.168.19.134 (192.168.19.134)' can't be established.
ECDSA key fingerprint is SHA256:Rdtg9sFJdLGD2QLnXdi8dW9/aJvNTWM+B2is1SEX+84.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.19.134' (ECDSA) to the list of known hosts.
aswani@192.168.19.134's password:
Permission denied, please try again.
aswani@192.168.19.134's password:
Last login: Fri Apr 19 20:50:37 2024
[aswani@server ~]$ sudo su -

We trust you have received the usual lecture from the local System
Administrator. It usually boils down to these three things:

    #1) Respect the privacy of others.
    #2) Think before you type.
    #3) With great power comes great responsibility.

[sudo] password for aswani:
Last login: Fri Apr 19 20:46:31 IST 2024 on :1
[root@server ~]#
```

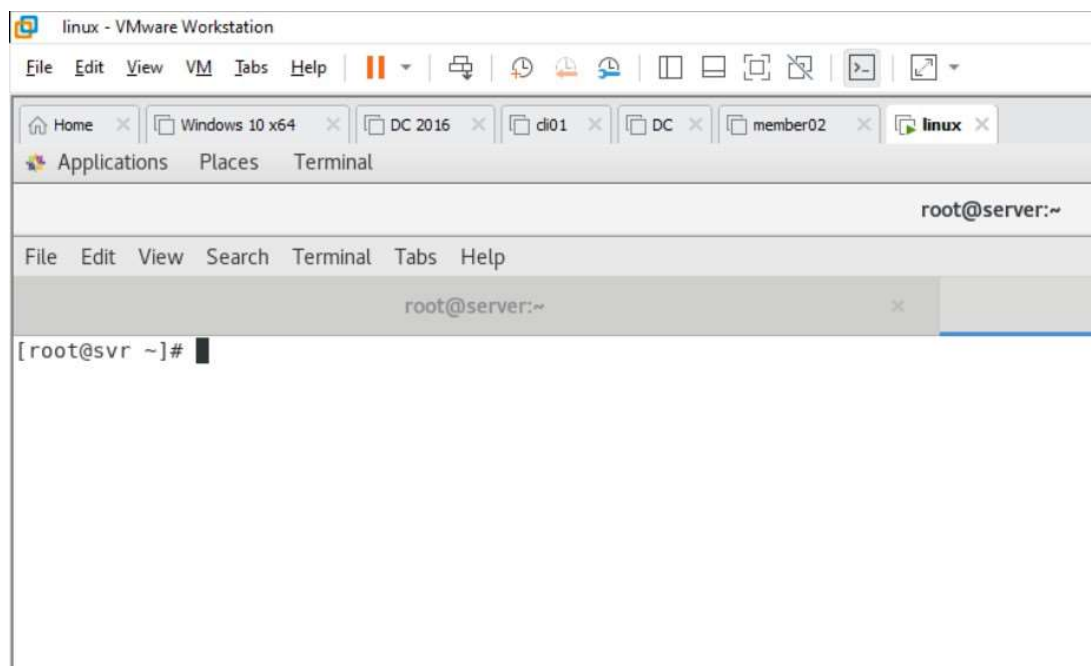
5. Here I am ( user), logged in as root, is changing the hostname of the server to svr.aswani.in using the hostnamectl set-hostname command. After changing the hostname, the hostname command is used to confirm that the change was successful, and the new hostname svr.aswani.in is displayed.

hostname: Displays the current system's hostname.

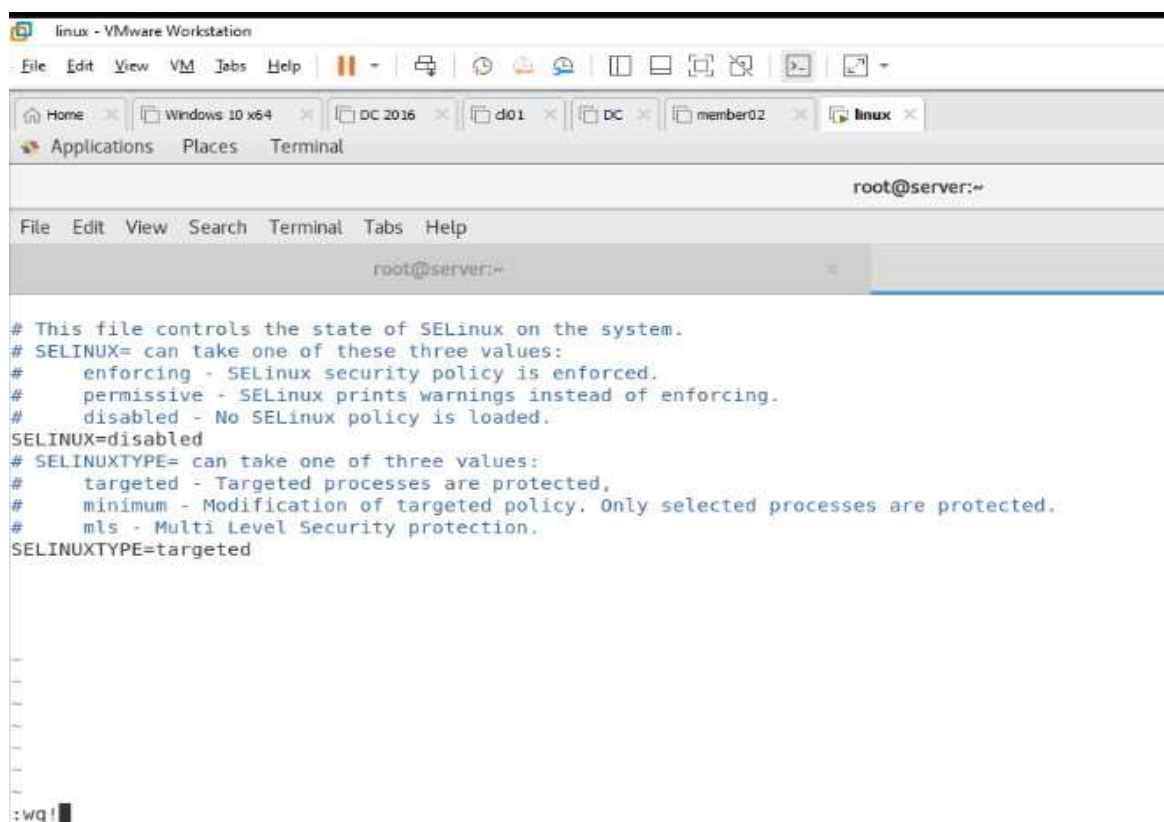
```
[root@server ~]#
[root@server ~]#
[root@server ~]#
[root@server ~]# hostnamectl set-hostname svr.aswani.in
[root@server ~]# hostname
svr.aswani.in
[root@server ~]#
```



- Here it shows the configured hostname of a Linux server



- SELINUX



1. `getenforce`: This command displays the current mode of SELinux, which can be either Enforcing, Permissive, or Disabled.

2. `vim /etc/selinux/config`: opened the SELinux configuration file in Vim, which is a text editor in the terminal.

( SELinux States:

Enforcing: SELinux security policy is actively enforced.

Permissive: SELinux allows actions but logs warnings.

Disabled: SELinux is turned off; no policies are loaded.)

To change the mode from Enforcing to Disabled, enter insert mode by pressing “I”, then replace the word “enforcing” with “disabled” in the configuration file.

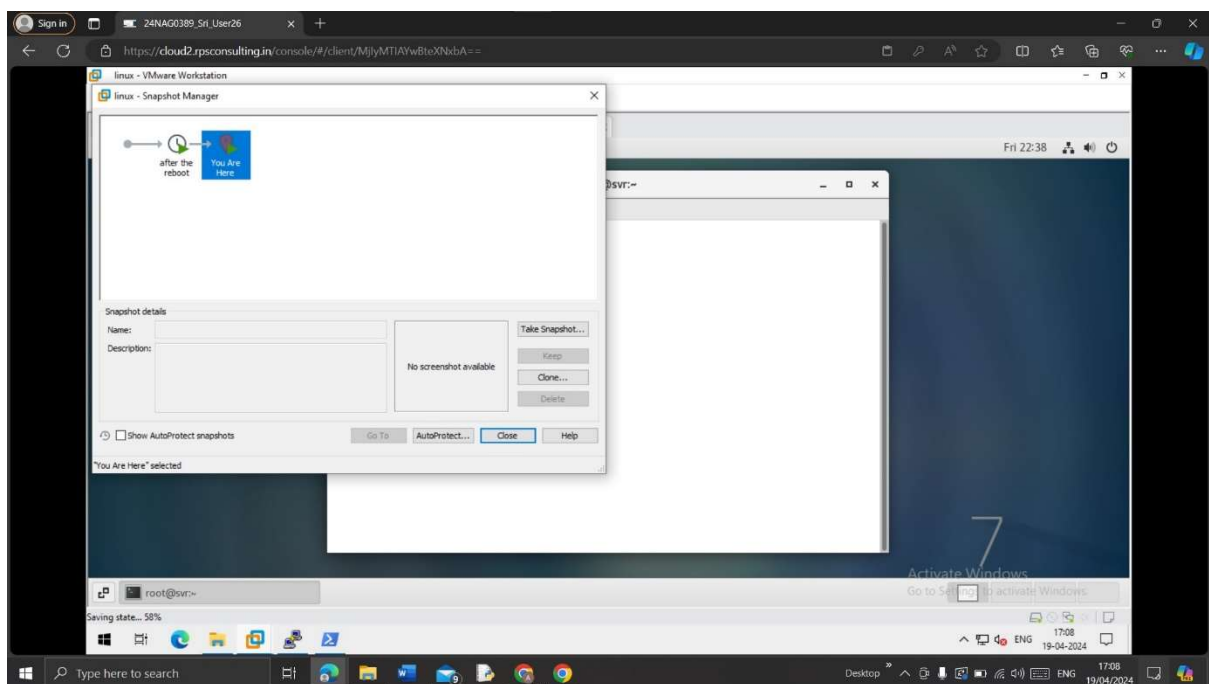
After making the change, press “Esc” to exit insert mode.

then type “:wq!” to write the changes to the file and quit Vim forcefully.

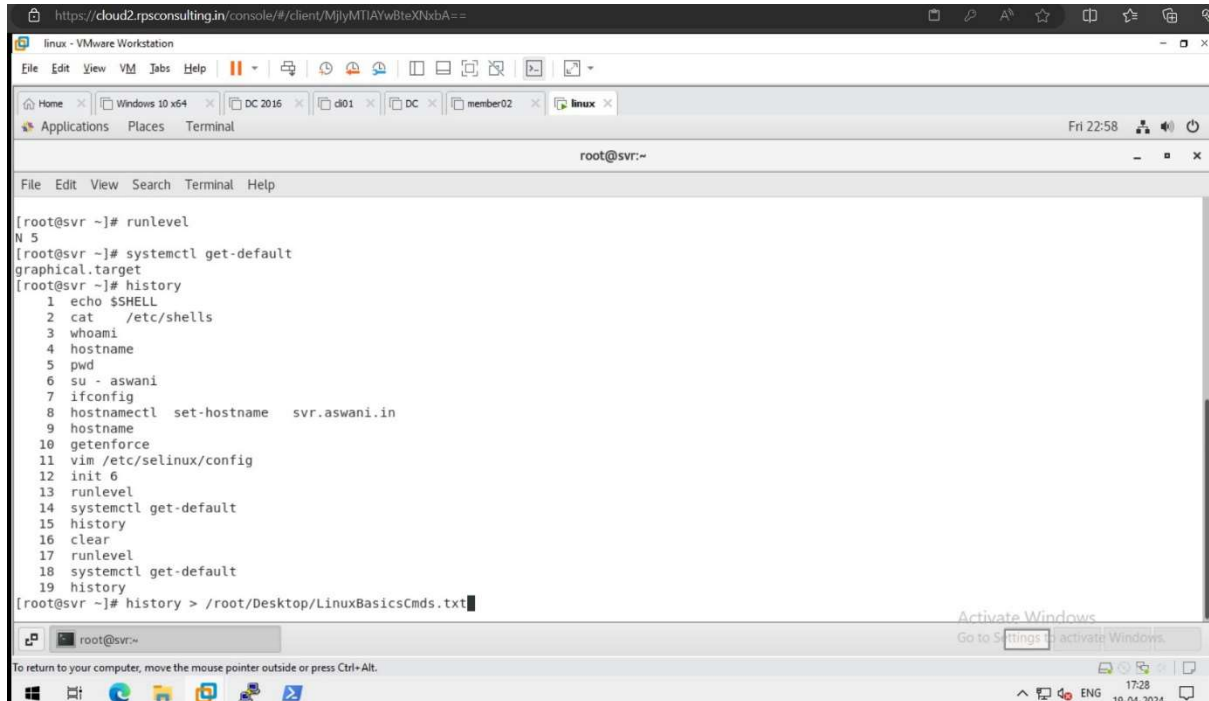
Finally, enter “ init 6 “ In the terminal, which is a command to reboot the system.

Now, when the system starts up again, SELinux should be disabled.

8. Then , took a snapshot here



## 9. Extra,



```
[root@svr ~]# runlevel
N 5
[root@svr ~]# systemctl get-default
graphical.target
[root@svr ~]# history
 1 echo $SHELL
 2 cat /etc/shells
 3 whoami
 4 hostname
 5 pwd
 6 su - aswani
 7 ifconfig
 8 hostnamectl set-hostname svr.aswani.in
 9 hostname
10 getenforce
11 vim /etc/selinux/config
12 init 6
13 runlevel
14 systemctl get-default
15 history
16 clear
17 runlevel
18 systemctl get-default
19 history
[root@svr ~]# history > /root/Desktop/LinuxBasicsCmds.txt
```

**runlevel:** Displays the current runlevel of the system. The output “ N 5” indicates that the system is in multi-user mode with a graphical user interface (GUI).

**systemctl get-default:** Shows the default target (runlevel) the system boots into, which is graphical.target, confirming the GUI mode.

**history:** Lists the previously executed commands, including system configuration and networking commands like hostname, nmcli, ifconfig, and SELinux status check with getenforce.

The command `history > /root/Desktop/LinuxBasicsCmds.txt` redirects the output of the history command to a text file named ‘LinuxBasicsCmds.txt’ on the desktop.