

WIPRO NGA Program – DC DWS Batch 7

Capstone Project Presentation – 4th and 5th Sept 2024

Project Title Here - LINUX INSTALLATION (CENTOS)

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LINUX INSTALLATION

(IN CENTOS)

BY MUKESH YADAV

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- Introduction to Linux
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- Project Scope
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Introduction to Linux

Overview of Linux as an open-source operating system

Brief history and key features.

Importance and uses of Linux in various environments.

Overview of Linux as an open-source operating system

- Linux is an open-source operating system created by Linus Torvalds in 1991. It is renowned for its stability, security, and flexibility. As an open-source project, its source code is freely available for anyone to use, modify, and distribute. Linux has become a critical component in modern computing, powering a wide range of devices from servers to smartphones.
- In Linux, two popular distributions are CentOS, a stable and free version based on Red Hat Enterprise Linux, and Ubuntu, a user-friendly, frequently updated distribution based on Debian with strong community support.

Brief History and Key Features

- **History:** Linus Torvalds began developing Linux in 1991 as a free alternative to Unix. Initially a personal project, it rapidly grew with contributions from developers worldwide, becoming a robust, open-source operating system.
- **Key Features:** Linux is known for its multi-user capabilities, which allow multiple users to operate the system simultaneously without interfering with each other. It boasts strong security features, including permissions and access controls that protect against unauthorized access. The operating system's modular architecture supports extensive customization, letting users configure it to suit their needs, and its broad hardware compatibility ensures it can run on a wide variety of devices, from servers to embedded systems.

Importance and Uses

- **Importance:** Linux's open-source nature drives innovation and collaboration, allowing developers to contribute and adapt the system freely. Its reliability and robust security make it ideal for servers and mission-critical applications.
- **Uses:** Linux is versatile, powering servers, desktops, embedded systems (such as routers and smart devices), and supercomputers. It is crucial in web hosting, software development, and scientific research due to its stability and flexibility.

OBJECTIVES

Understand the minimum requirement to Linux Operating system.

Create partition while installing the Linux Operating system.

Create user while installing the Linux Operating System

Understand the minimum requirement to Linux Operating system.

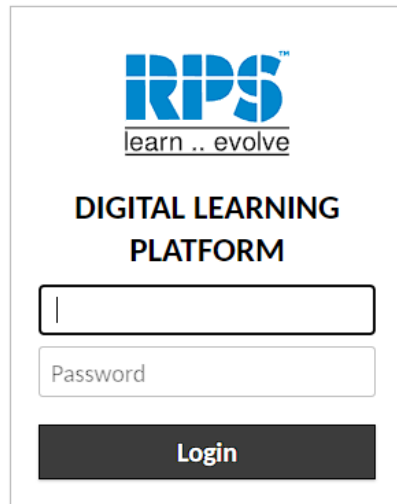
1. Ubuntu:

- Processor: 2 GHz dual-core processor.
- RAM: 4 GB of RAM (8 GB recommended for better performance).
- Storage: 20 GB of free disk space (32 GB recommended).
- Graphics: Graphics card capable of 1024x768 resolution.
- Network: Internet access is recommended for updates and additional software.
- Additional Notes: For specific server roles, additional resources may be required.

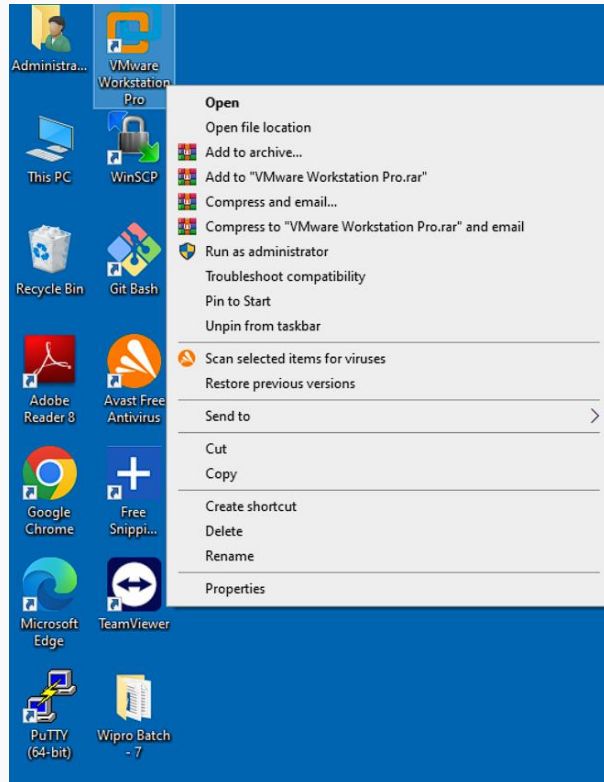
2. CentOS:

- Processor: 1 GHz or faster processor (64-bit recommended).
- RAM: 1 GB of RAM (4 GB or more recommended for server applications).
- Storage: 20 GB of free disk space (minimum); more space may be needed based on server role.
- Graphics: Basic graphics capabilities, as CentOS is often used on servers with minimal graphical requirements.
- Network: Network access is recommended for updates and network services.
- Additional Notes: For specific server roles, additional resources may be required.

Installation Of CentOs



The image shows a login interface for the RPS Digital Learning Platform. At the top is the RPS logo with the tagline 'learn..evolve'. Below it, the text 'DIGITAL LEARNING PLATFORM' is centered. There are two input fields: one for a username (indicated by a vertical line) and one for a password. A 'Login' button is positioned at the bottom of the form.



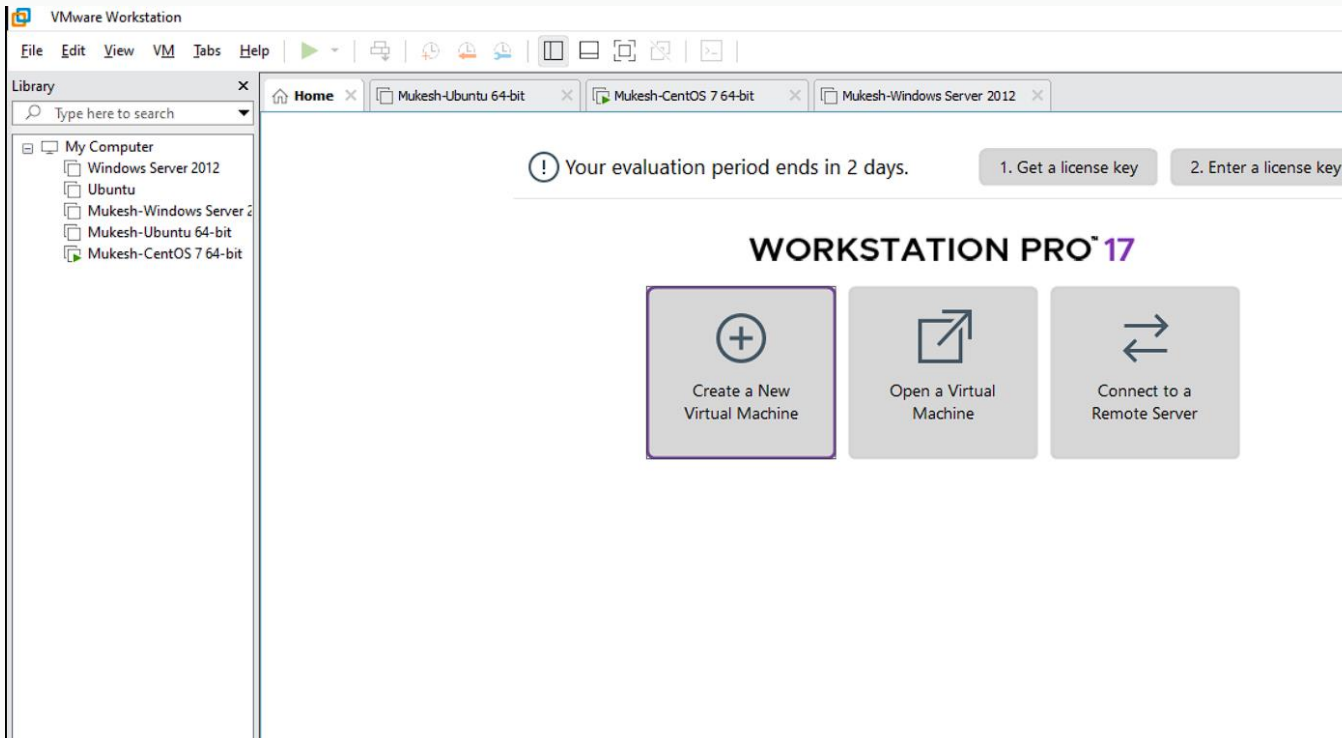
1. CentOS Installation Options:

- Install CentOS in a Virtual Machine or Directly from a Drive.

2. I used Cloud Lab:

- Log in to the **Cloud Lab**.
- **Right-click** on VMware Workstation Pro.
- Select "**Open**" to launch VMware Workstation Pro.

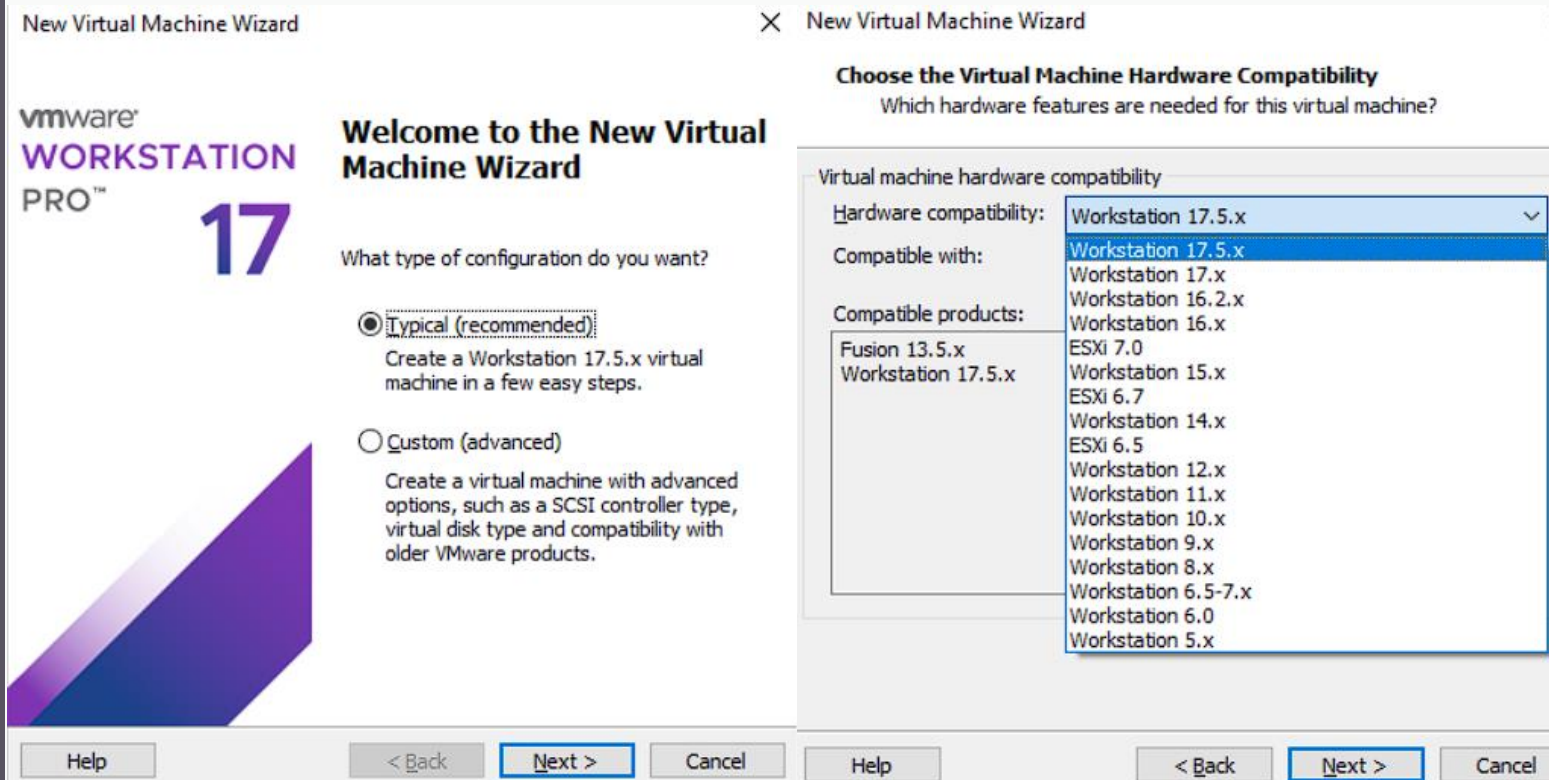
Step 1



1. Click on **"Create a New Virtual Machine"** to start the CentOS installation process.

2. Wait for the next steps in the process.

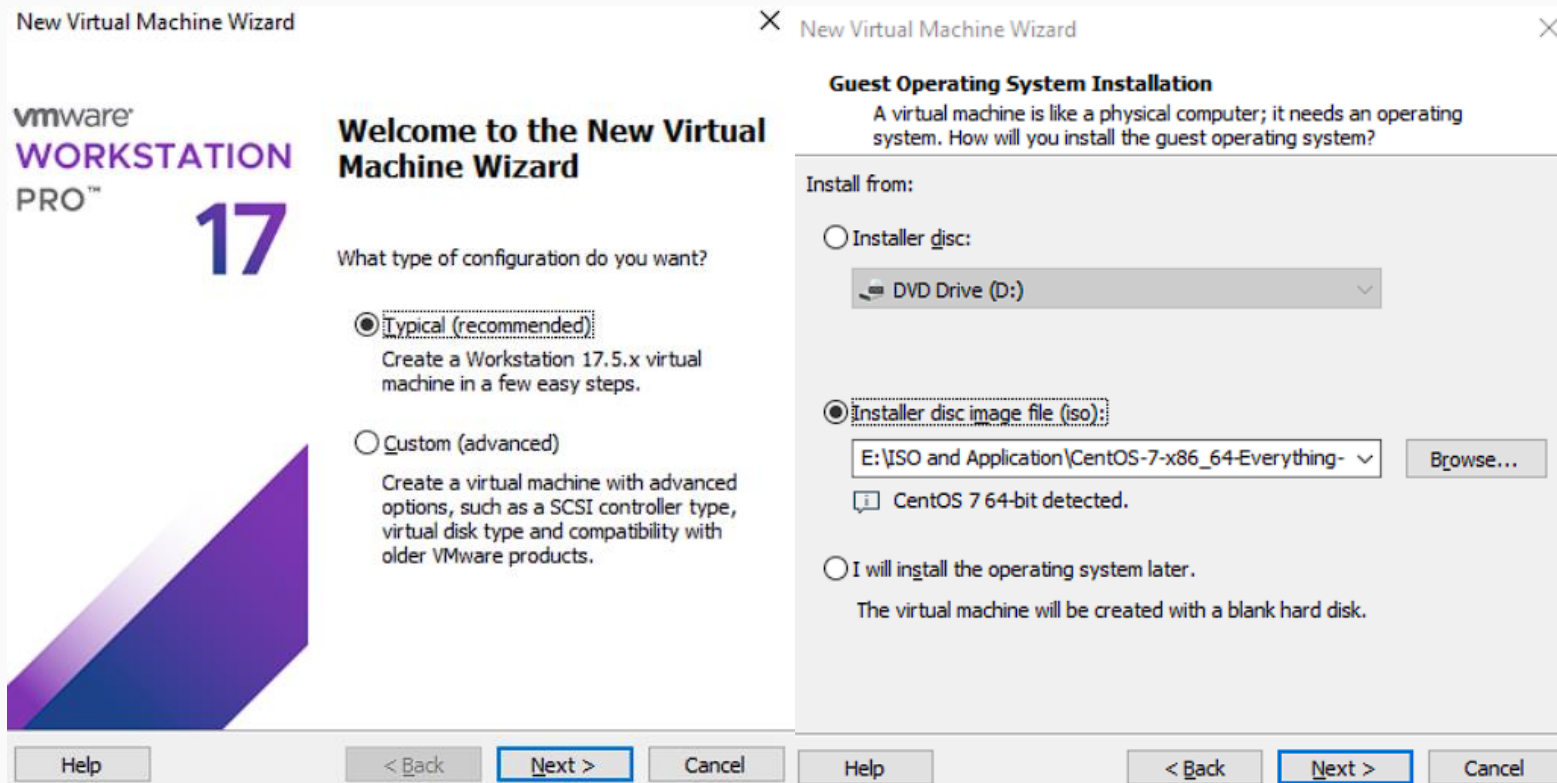
Step 2



We have two configuration options :

- 1. Typical (Recommended):** This is the default and simplest option, which I used.
- 2. Custom (Advanced):** This option allows you to view hardware compatibility, compatible products, and select the VMware Workstation Pro version according to your needs.

Step 3

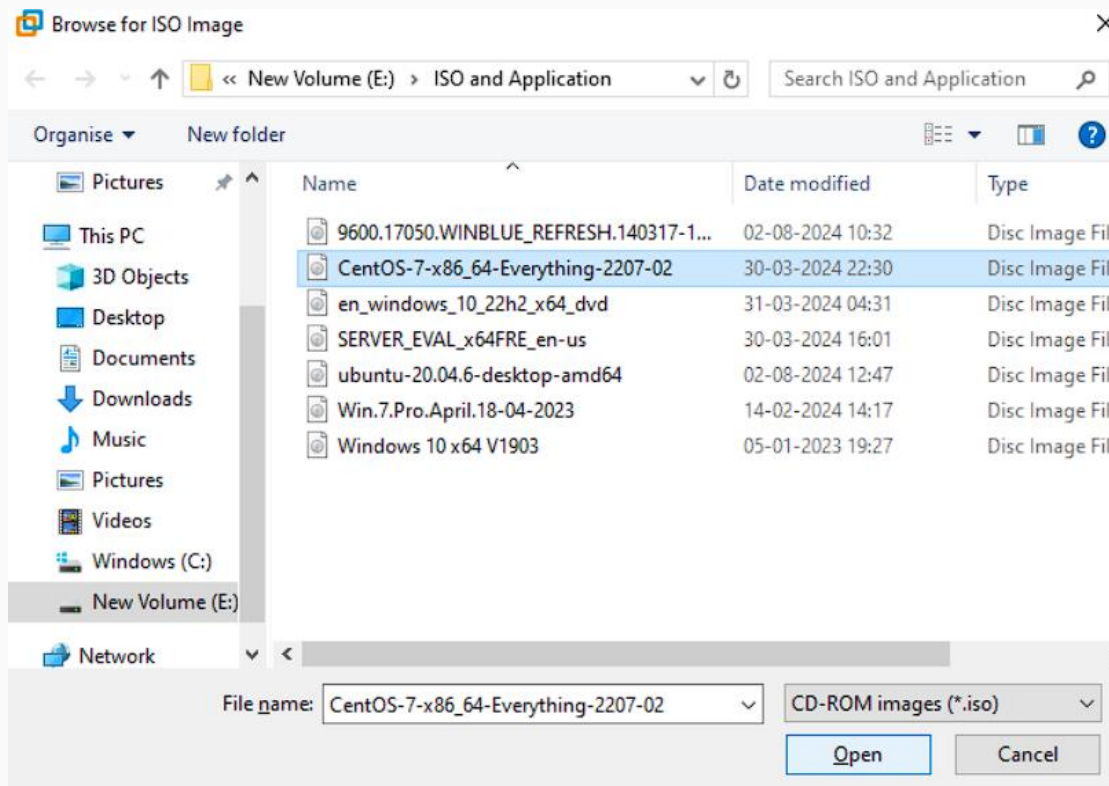


After selecting "**Typical**," click on "**Next**." You will then see three options:

1. Install CentOS using an Installer Disc.
2. Install CentOS using an Installer Disc Image (ISO).
3. Install CentOS from a USB Drive.

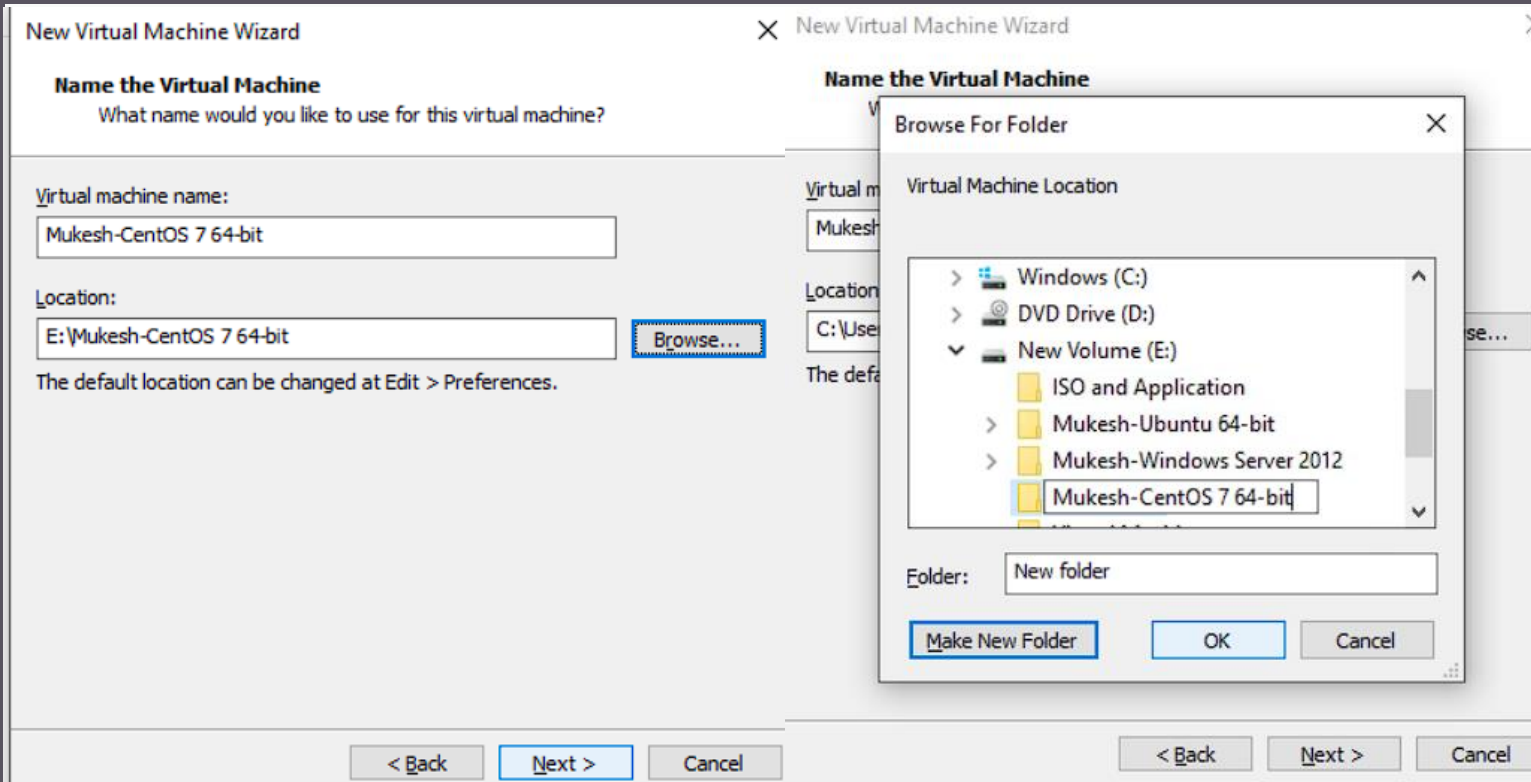
I selected "**Installer Disc Image (ISO)**" and clicked the "**Browse**" option to choose the CentOS ISO image.

Step 4



Then, I selected the **"centos-7-x86_64-Everything-2207-02"** ISO image and clicked "Open" to proceed to the next step.

Step 5



- After selecting the ISO image, provide a name for the virtual machine and specify the installation location.
- 1. Click on the **"Browse"** option to choose the disk path.
- 2. Select the E drive and click on **"Make New Folder."**
- 3. Create a folder named **"UserName - CentOS 64-bit."**
- 4. Click **"OK"** and proceed to the next steps.

Step 6

The screenshot shows two side-by-side windows of the 'New Virtual Machine Wizard'.

Left Window: Specify Disk Capacity
Title: New Virtual Machine Wizard
Subtitle: Specify Disk Capacity
Text: How large do you want this disk to be?
Text: The virtual machine's hard disk is stored as one or more files on the host computer's physical disk. These file(s) start small and become larger as you add applications, files, and data to your virtual machine.
Form: Maximum disk size (GB):
Text: Recommended size for CentOS 7 64-bit: 20 GB
Radio buttons:
☐ Store virtual disk as a single file
☒ Split virtual disk into multiple files
Text: Splitting the disk makes it easier to move the virtual machine to another computer but may reduce performance with very large disks.
Buttons: Help, < Back, Next >, Cancel

Right Window: Ready to Create Virtual Machine
Title: New Virtual Machine Wizard
Subtitle: Ready to Create Virtual Machine
Text: Click Finish to create the virtual machine and start installing CentOS 7 64-bit.
Text: The virtual machine will be created with the following settings:
List:
Name: Mukesh-CentOS 7 64-bit
Location: E:\Mukesh-CentOS 7 64-bit
Version: Workstation 17.5.x
Operating System: CentOS 7 64-bit
Hard Disk: 20 GB, Split
Memory: 1024 MB
Network Adapter: NAT
Other Devices: CD/DVD, USB Controller, Sound Card
Buttons: Customize Hardware..., ☒ Power on this virtual machine after creation
Buttons: < Back, Finish, Cancel

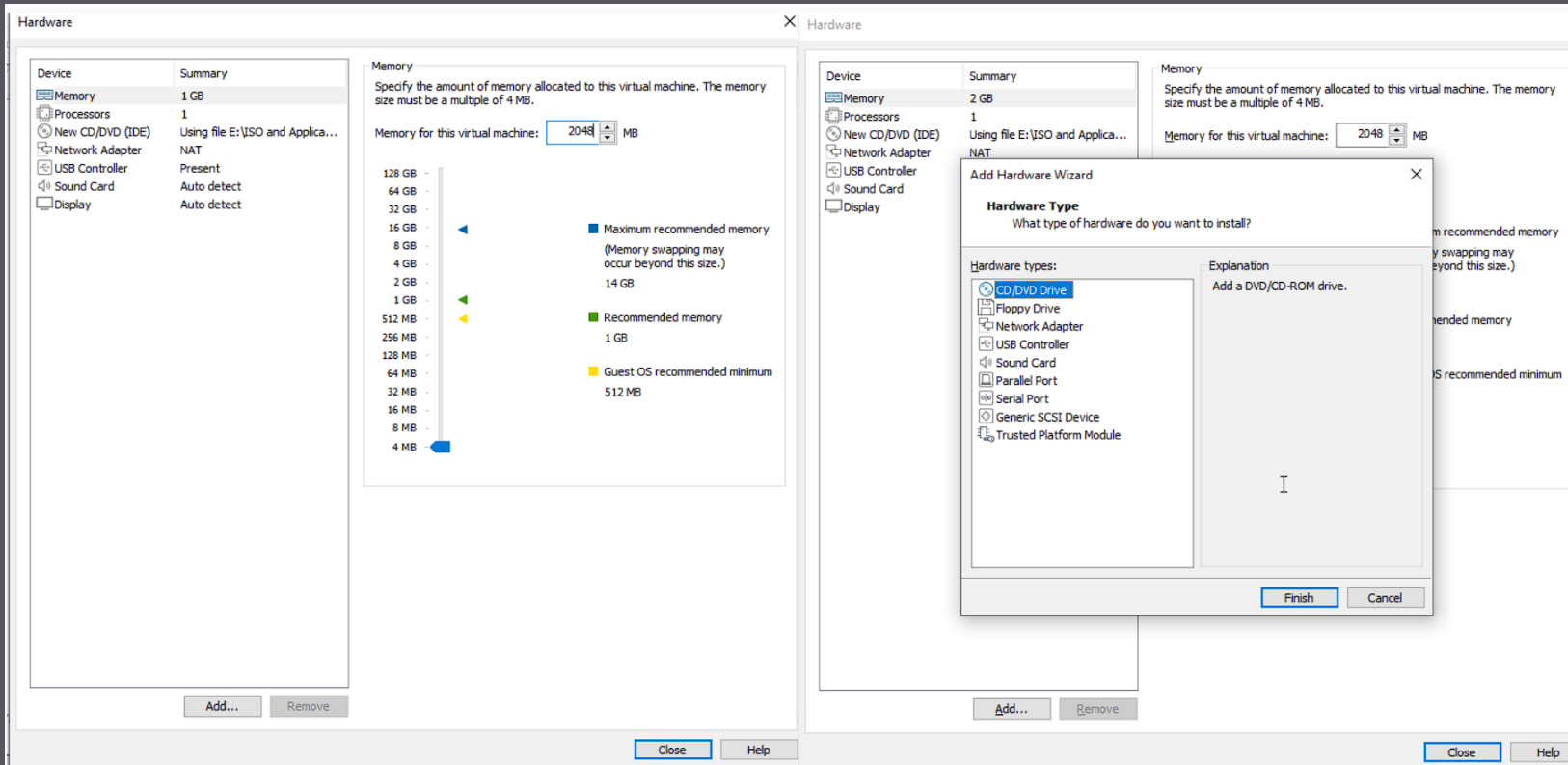
1. Specify the maximum **disk size** (recommended is 20 GB).

2. Select "**Split virtual disk into multiple files**" (this is the default option).

3. Click "**Next.**"

4. We will then have the option to customize hardware settings. Click on "**Customize Hardware**" to proceed next for customization .

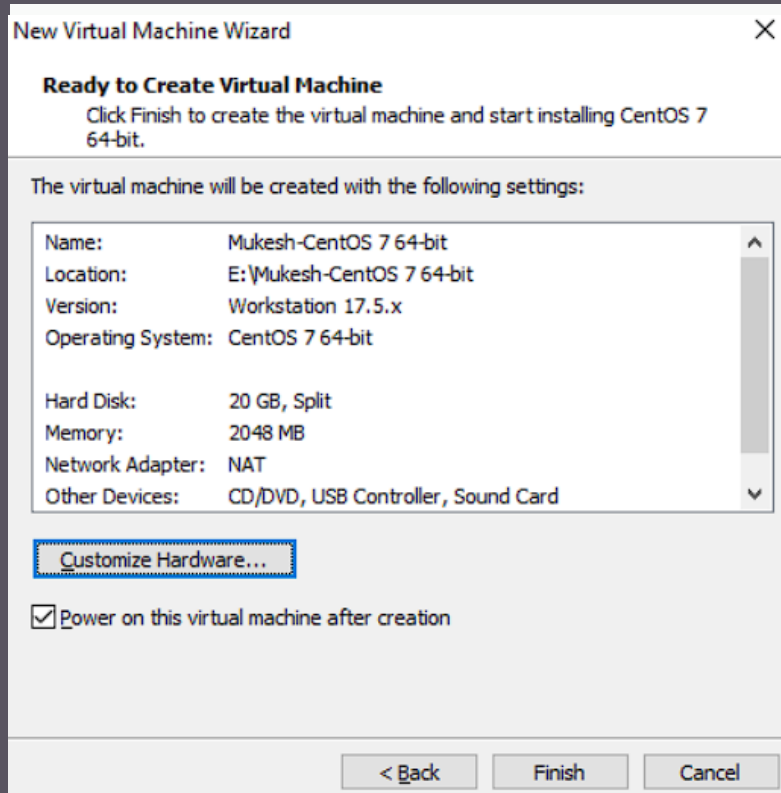
Step 7



- In this step, you can adjust the memory size, processor settings, and add external CD/DVD drives or other devices.

1. Increase the **memory size** to **2048 MB**.
2. Since no external devices are added, click "Cancel" on the external device options.
3. Proceed with the updated settings.

Step 8



1. Complete Customization:

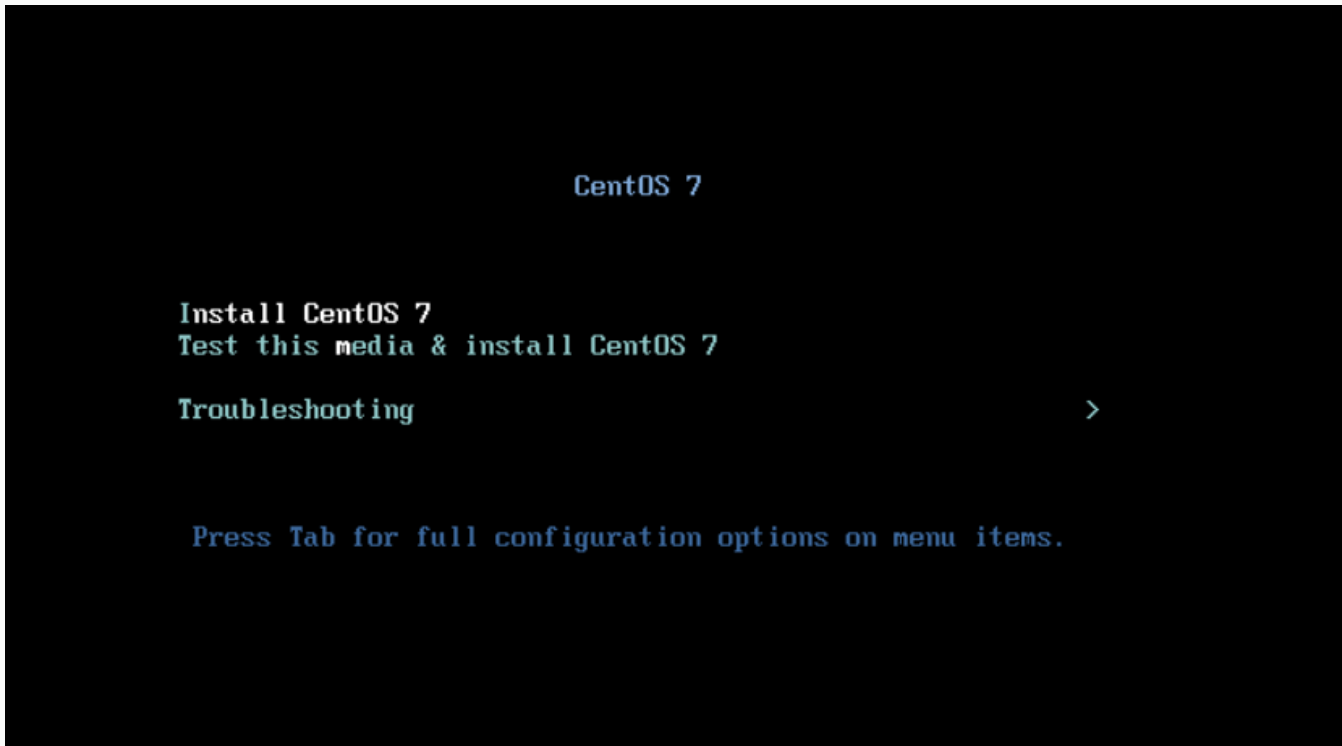
- Check "**Power on this VM**" and click "**Finish.**"

2. Boot Options:

- Use F2 to enter setup.
- Use F12 for network boot.
- Use Esc to access the boot menu.

3. Wait for the next process.

Step 9



1. Options Available:

- 1. Install CentOS 7
- 2. Test this media & install CentOS 7
- 3. Troubleshooting

2. Choose "**Install CentOS 7**" from the options.

3. Press "**Enter**" to proceed.

4. **Skip** "Test this media & install CentOS 7" and "Troubleshooting" for installation.

Step 10

```
- Press the <ENTER> key to begin the installation process.

[ 18.017365] dracut-pre-udev[329]: modprobe: ERROR: could not insert 'floppy':
No such device
[ OK ] Started Show Plymouth Boot Screen.
[ OK ] Started Forward Password Requests to Plymouth Directory Watch.
[ OK ] Reached target Paths.
[ OK ] Reached target Basic System.
[ OK ] Started Device-Mapper Multipath Device Controller.
      Starting Open-iSCSI...
[ OK ] Started Open-iSCSI.
      Starting dracut initqueue hook...
[ 23.422180] sd 0:0:0:0: [sd] Assuming drive cache: write through
[ 22.561392] dracut-initqueue[720]: mount: /dev/sr0 is write-protected, mounting read-only
[ OK ] Started dracut initqueue hook.
[ OK ] Reached target Remote File Systems (Pre).
[ OK ] Reached target Remote File Systems.
      Starting dracut pre-mount hook...
[ OK ] Started dracut pre-mount hook.
[ OK ] Reached target Initrd Root File System.
      Starting Reload Configuration from the Real Root...
[ OK ] Started Reload Configuration from the Real Root.
[ OK ] Reached target Initrd File Systems.
      Starting dracut mount hook...
[ OK ] Started dracut mount hook.
[ OK ] Reached target Initrd Default Target.
      Starting dracut pre-pivot and cleanup hook...
```



- **Press Enter** to begin the installation process
- Then select the **language** to be used during the installation.

Step 11

The image shows two side-by-side screenshots from the CentOS 7 installation process. The left screenshot is the 'INSTALLATION SUMMARY' screen, which lists various configuration options under categories: LOCALIZATION (DATE & TIME, KEYBOARD, LANGUAGE SUPPORT), SOFTWARE (INSTALLATION SOURCE, SOFTWARE SELECTION), and SYSTEM (INSTALLATION DESTINATION, KDUMP). Some options are marked with a warning icon, indicating they need to be completed. The right screenshot is the 'DATE & TIME' configuration screen. It shows a world map with a red pin over India, indicating the selected region is 'Asia' and the city is 'Kolkata'. Below the map, there are fields for 'Region' (Asia), 'City' (Kolkata), and 'Network Time' (OFF). At the bottom, there are fields for the time (08:08 PM) and date (08 / 30 / 2024), with radio buttons for '24-hour' and 'AM/PM' time format.

INSTALLATION SUMMARY CENTOS 7 INSTALLATION

us Help!

LOCALIZATION

DATE & TIME Americas/New York timezone

KEYBOARD English (US)

LANGUAGE SUPPORT English (United States)

SOFTWARE

INSTALLATION SOURCE Setting up installation source...

SOFTWARE SELECTION Installation source not set up

SYSTEM

INSTALLATION DESTINATION

KDUMP

Quit Begin Installation

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

Activate Windows

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

DATE & TIME CENTOS 7 INSTALLATION

Done

us Help!

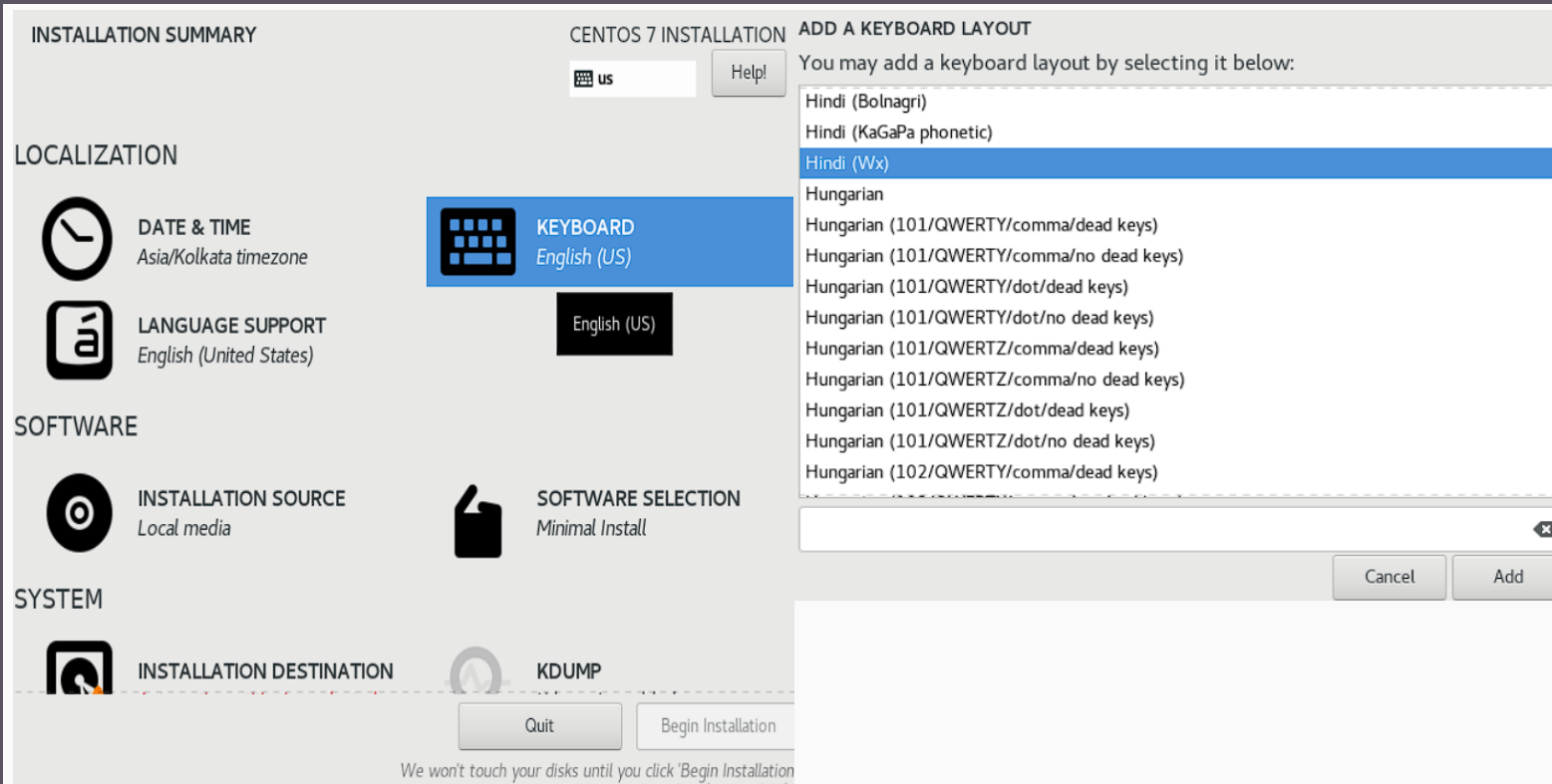
Region: Asia City: Kolkata Network Time OFF

08:08 PM 24-hour AM/PM

08 / 30 / 2024

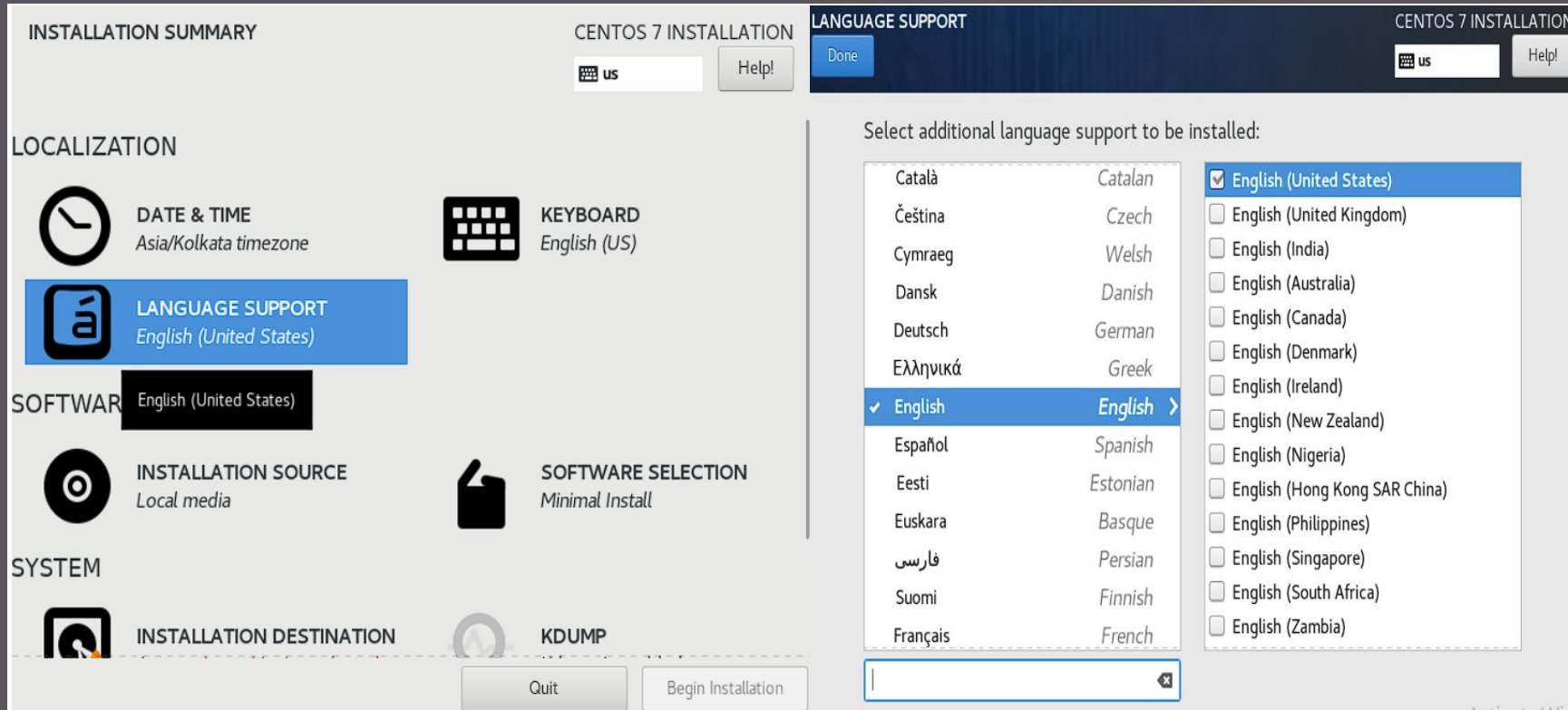
- Click on "**Date and Time**".
- Then select the time zone. I selected "**Asia**" for the **region** and "**Kolkata**" for the **city**.
- Set the **time format** to 12-hour and click "**Done**."

Step 12



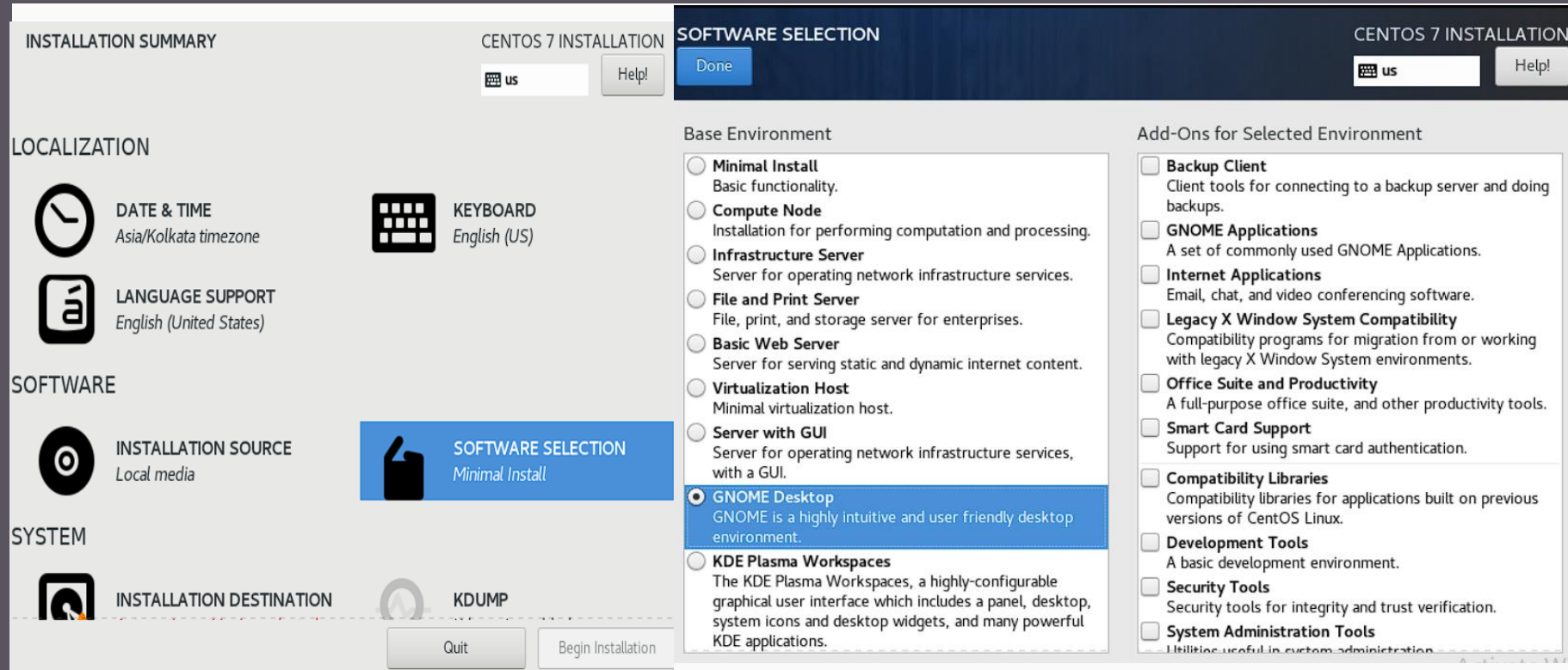
- Click on "**Keyboard,**" then choose the keyboard layout that is comfortable for you.
- Click on "**Add**"
- Then click "**Done.**" Wait for the next process to begin.

Step 13



- Click on "Language and Support,"
- Then choose the language. Click "Done" and wait for the next process.

Step 14



The image shows the CentOS 7 installation window at the 'SOFTWARE SELECTION' step. The window is divided into three main sections: 'LOCALIZATION', 'SOFTWARE', and 'SYSTEM'. The 'LOCALIZATION' section shows 'DATE & TIME' set to 'Asia/Kolkata timezone' and 'LANGUAGE SUPPORT' set to 'English (United States)'. The 'SOFTWARE' section shows 'INSTALLATION SOURCE' as 'Local media' and 'SOFTWARE SELECTION' as 'Minimal Install'. The 'SYSTEM' section shows 'INSTALLATION DESTINATION' and 'KDUMP'. The 'SOFTWARE SELECTION' section is the active area, showing a list of 'Base Environment' options and a list of 'Add-Ons for Selected Environment'. The 'Base Environment' options are: 'Minimal Install' (selected), 'Compute Node', 'Infrastructure Server', 'File and Print Server', 'Basic Web Server', 'Virtualization Host', and 'Server with GUI'. The 'Add-Ons for Selected Environment' options are: 'Backup Client', 'GNOME Applications', 'Internet Applications', 'Legacy X Window System Compatibility', 'Office Suite and Productivity', 'Smart Card Support', 'Compatibility Libraries', 'Development Tools', 'Security Tools', and 'System Administration Tools'. The 'GNOME Desktop' option is selected under the 'Base Environment' section.

INSTALLATION SUMMARY

CENTOS 7 INSTALLATION

Done

Help!

us

LOCALIZATION

DATE & TIME
Asia/Kolkata timezone

KEYBOARD
English (US)

LANGUAGE SUPPORT
English (United States)

SOFTWARE

INSTALLATION SOURCE
Local media

SOFTWARE SELECTION
Minimal Install

SYSTEM

INSTALLATION DESTINATION

KDUMP

Quit

Begin Installation

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

- ☐ Backup Client
Client tools for connecting to a backup server and doing backups.
- ☐ GNOME Applications
A set of commonly used GNOME Applications.
- ☐ Internet Applications
Email, chat, and video conferencing software.
- ☐ Legacy X Window System Compatibility
Compatibility programs for migration from or working with legacy X Window System environments.
- ☐ Office Suite and Productivity
A full-purpose office suite, and other productivity tools.
- ☐ Smart Card Support
Support for using smart card authentication.
- ☐ 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.
- ☐ System Administration Tools
Utilities useful in system administration.

- Click on "**Software Selection**," then:
- By default "**Minimal Install**" is selected.
- Select "**GNOME Desktop**" for a graphical user interface.
- Click "**Done.**"
- **Reason:** "GNOME Desktop" provides a user-friendly graphical environment, while "Minimal Install" ensures a lightweight base system.

Step 15

The image shows two side-by-side screenshots from the CentOS 7 installation process. The left screenshot is the 'INSTALLATION SUMMARY' screen, and the right is the 'INSTALLATION DESTINATION' screen.

INSTALLATION SUMMARY (Left):

- DATE & TIME:** Asia/Kolkata timezone
- LANGUAGE SUPPORT:** English (United States)
- SOFTWARE:**
 - INSTALLATION SOURCE:** Local media
 - SOFTWARE SELECTION:** GNOME Desktop
- SYSTEM:**
 - INSTALLATION DESTINATION:** Automatic partitioning selected
 - NETWORK & HOST NAME:** Not connected
 - KDUMP:** Kdump is enabled
 - SECURITY POLICY:** No profile selected

Buttons at the bottom: Quit, Begin Installation.

INSTALLATION DESTINATION (Right):

Device Selection: 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.

Local Standard Disks:

- 20 GiB
- VMware, VMware Virtual S (sda) / 992.5 KiB free

Disks left unselected here will not be touched.

Specialized & Network Disks:

- Add a disk...

Disks left unselected here will not be touched.

Other Storage Options:

Partitioning:

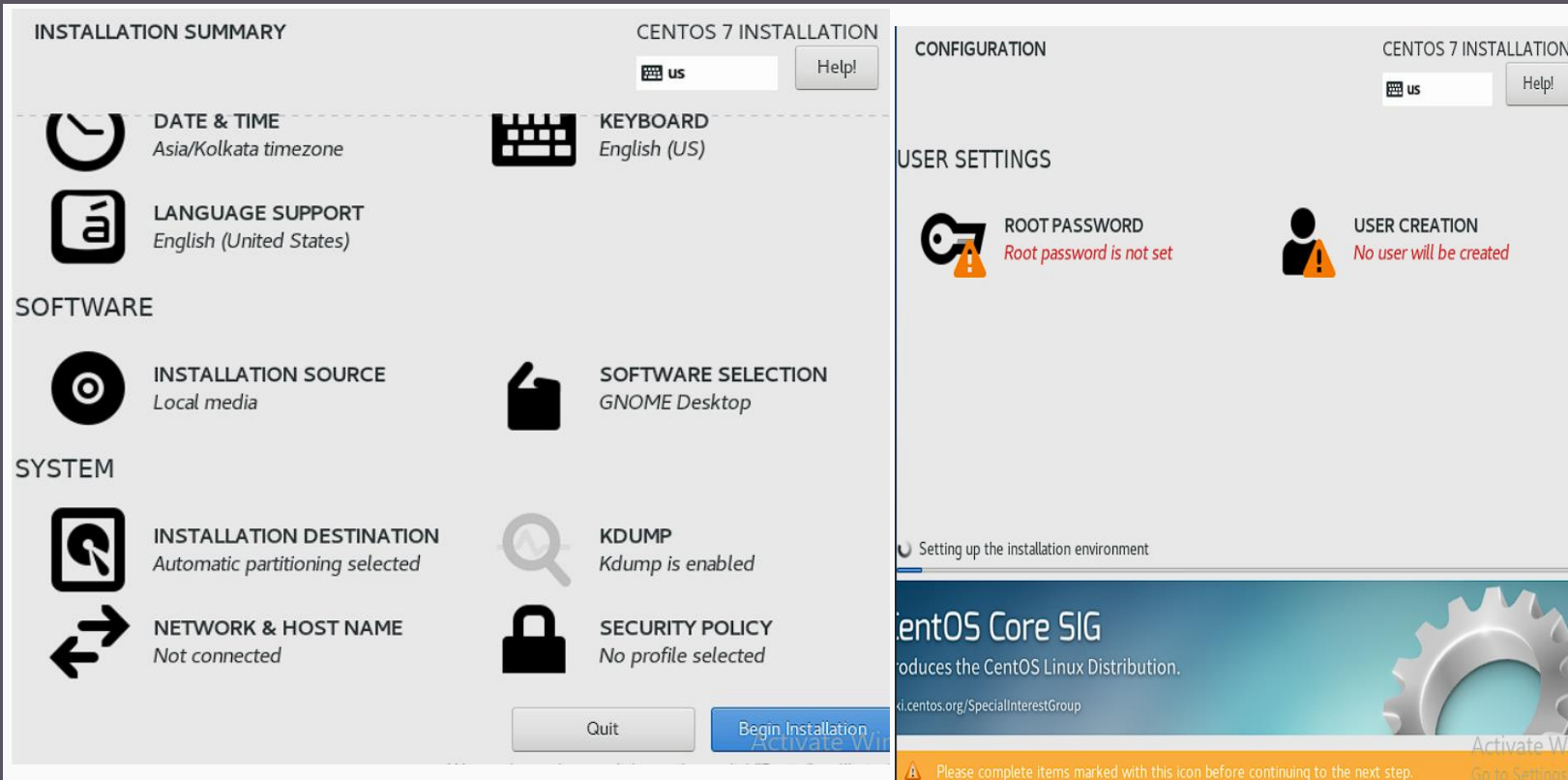
- ☒ Automatically configure partitioning.
- ☐ I will configure partitioning.
- ☐ I would like to make additional space available.

Buttons at the bottom: Done, Begin Installation.

Footer text: 1 disk selected; 20 GiB capacity; 992.5 KiB free. [Full disk summary and boot loader...](#) [Refresh...](#)

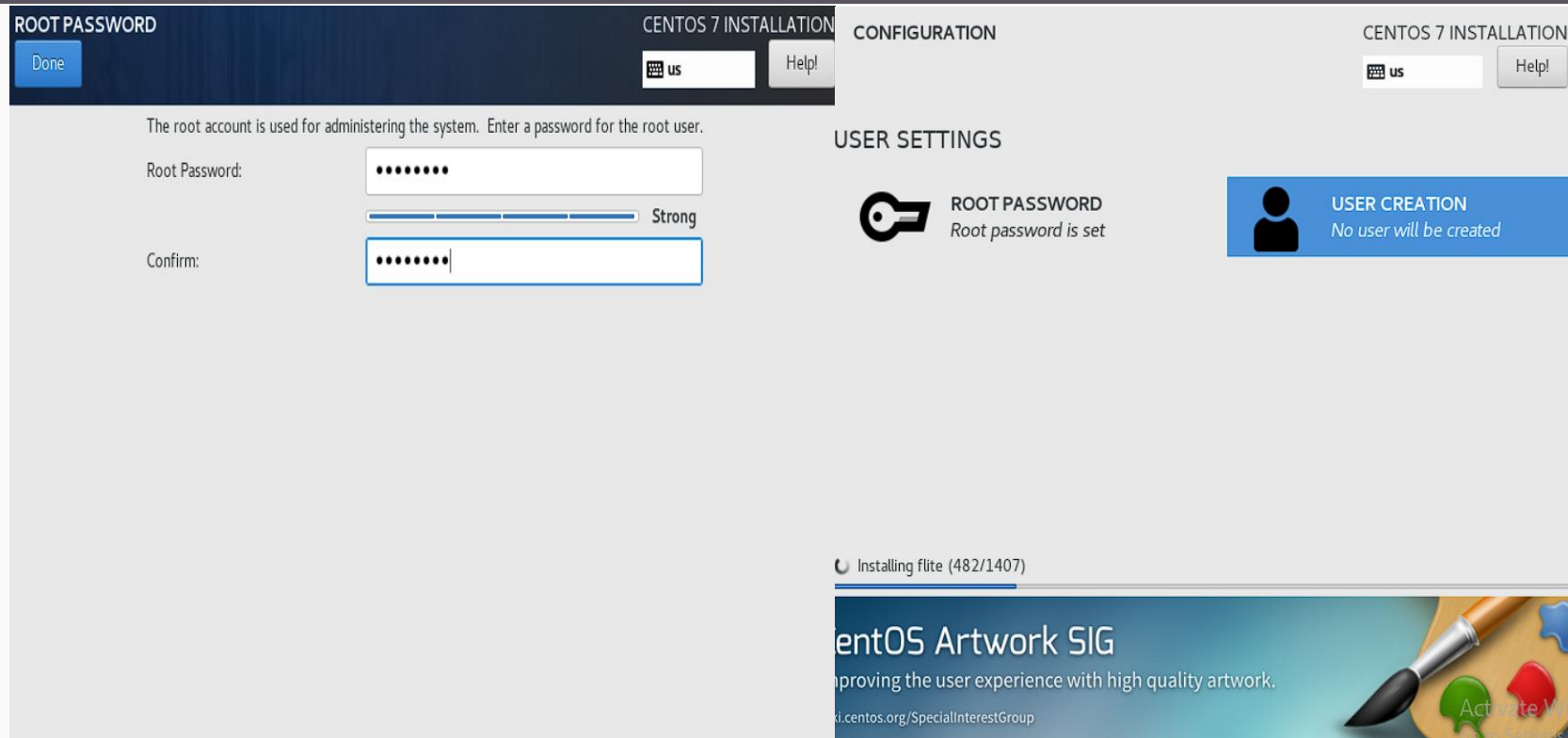
- Click on **"Installation Destination,"** then:
- Select the VMware virtual drive.
- Click **"Done"** to proceed to the next step.

Step 16



- After confirming all details, click "**Begin Installation.**" This will redirect you to the configuration page where you can:
- Set the root password.
- Create a user account.

Step 17



The screenshot shows the 'CONFIGURATION' screen of the CentOS 7 installer. The 'ROOT PASSWORD' section is active, showing fields for 'Root Password' and 'Confirm' with masked input. A strength indicator shows 'Strong'. The 'USER SETTINGS' section shows 'ROOT PASSWORD' is set and 'USER CREATION' is disabled with the message 'No user will be created'. At the bottom, a progress bar shows 'Installing flite (482/1407)' and a banner for 'CentOS Artwork SIG' is visible.

ROOT PASSWORD

Done

CENTOS 7 INSTALLATION

us Help!

The root account is used for administering the system. Enter a password for the root user.

Root Password: [masked]

Confirm: [masked]

Strong

USER SETTINGS

ROOT PASSWORD
Root password is set

USER CREATION
No user will be created

Installing flite (482/1407)

CentOS Artwork SIG
improving the user experience with high quality artwork.
wiki.centos.org/SpecialInterestGroup

- Set the root password with the following criteria:
- **Uppercase letters**
- **Lowercase letters**
- **Special characters**
- **Numbers**
- **Minimum length of 8 characters**
- Click "**Done**" to finalize the password and proceed.

Step 18

CREATE USER CENTOS 7 INSTALLATION

[Done](#) us [Help!](#)

Full name

User name

Tip: Keep your user name shorter than 32 characters and do not use spaces.

☐ Make this user administrator

☒ Require a password to use this account

Password

Strong


Confirm password


[Advanced...](#)

CONFIGURATION CENTOS 7 INSTALLATION

us [Help!](#)

USER SETTINGS

 **ROOT PASSWORD**
Root password is set

 **USER CREATION**
User mukesh will be created

Complete!

CentOS is now successfully installed and ready for you to use
Go ahead and reboot to start using it

[Reboot](#)

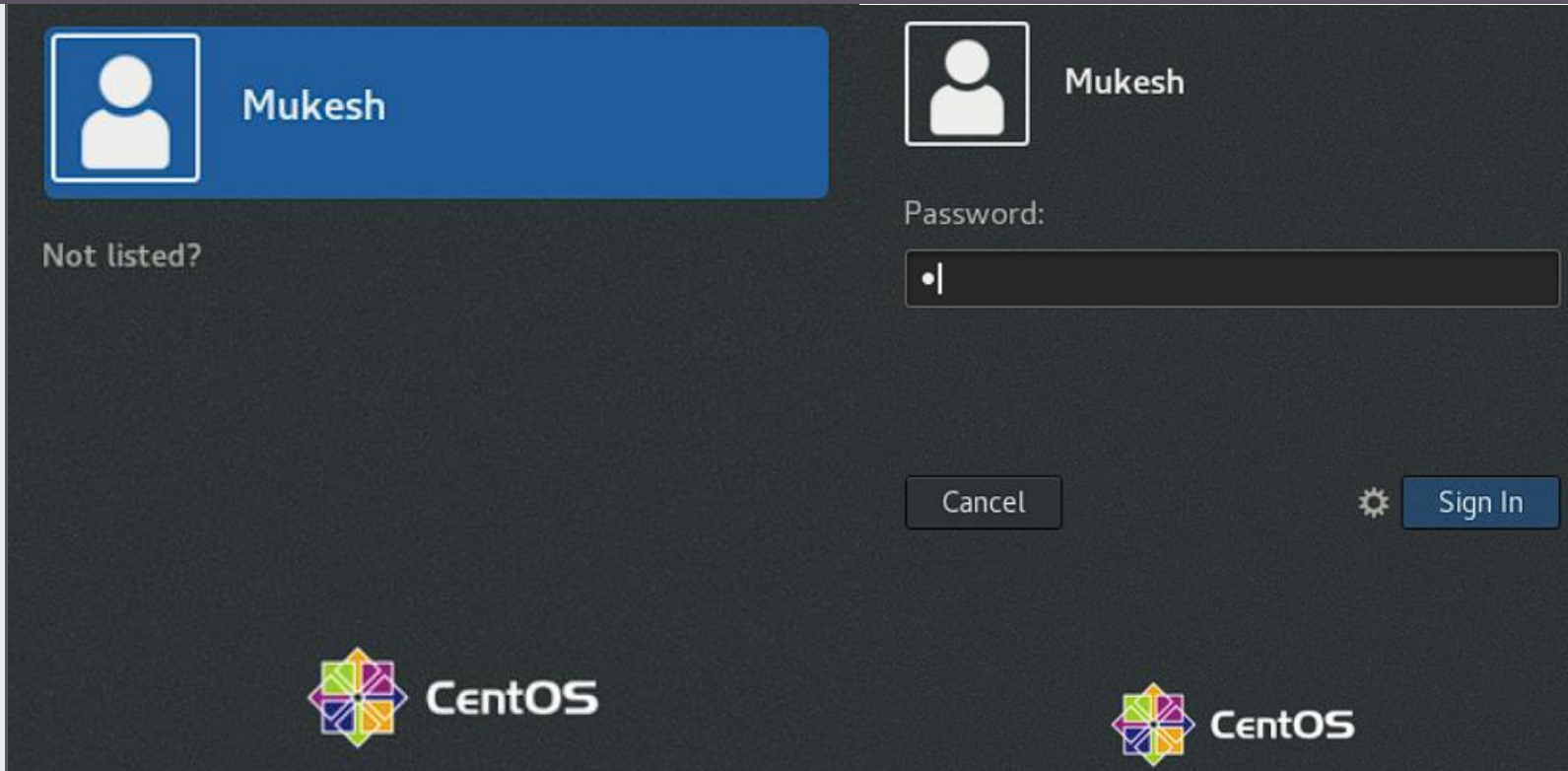
- Set up the root user:
- Enter the full name.
- Specify the username.
- Set the password following all criteria.
- Click "Done."
- Once the installation completes in the background, click "Reboot" to restart the system.

Step 19



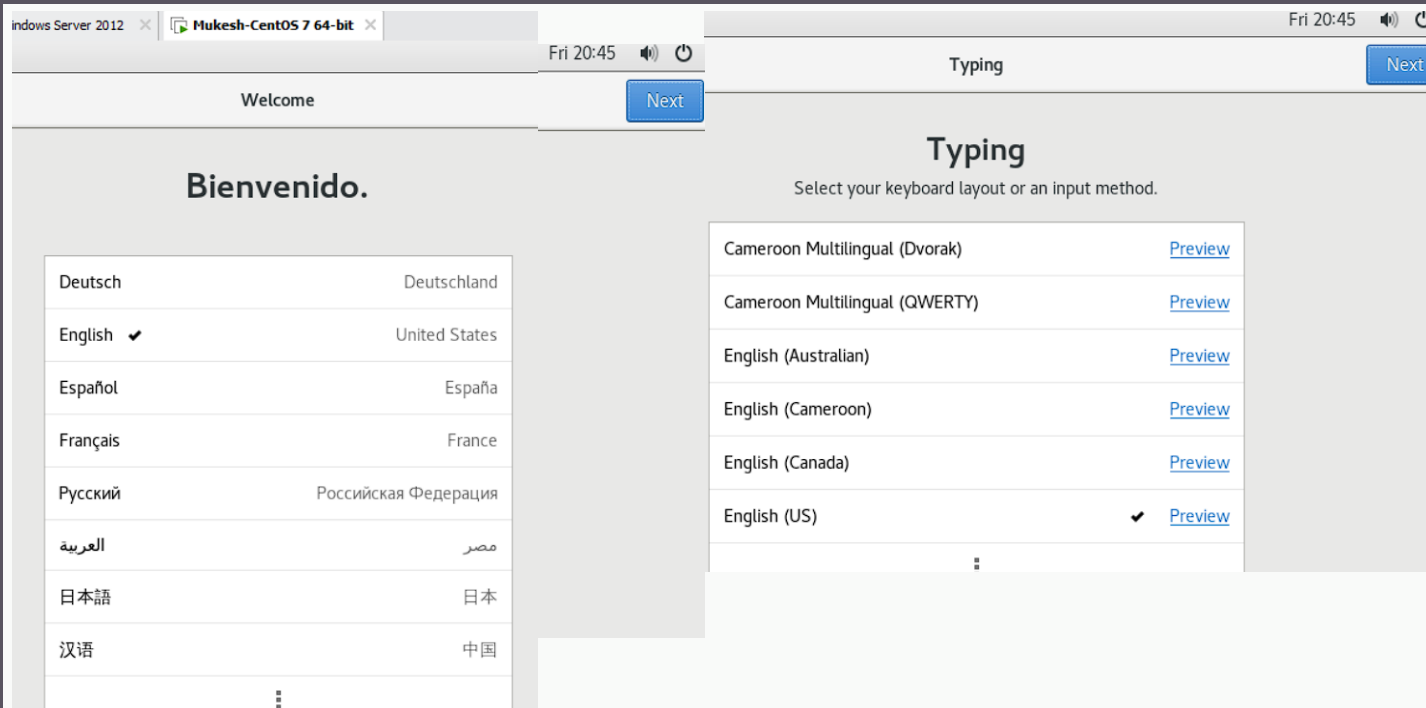
- After clicking "Reboot":
- The VM will redirect to the VMware starting page.
- Select CentOS Linux with the Linux version.
- Leave the rescue option.
- Wait for the next option to appear.

Step 20



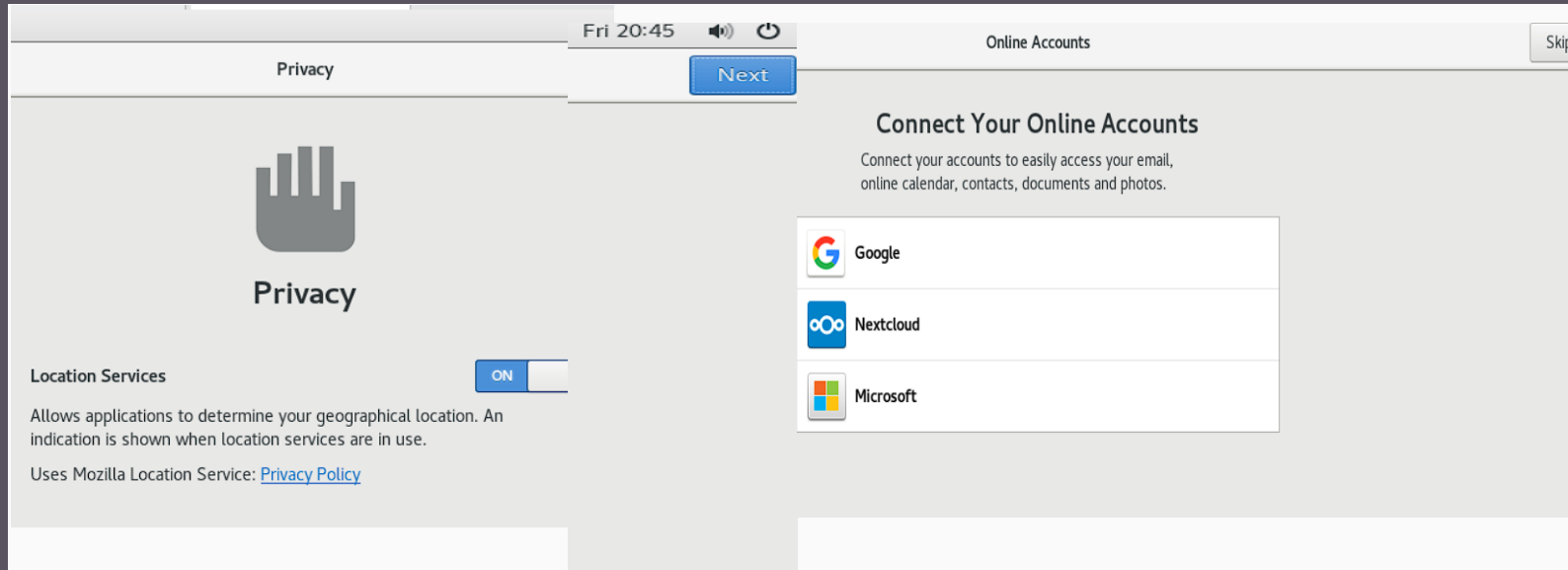
- **After rebooting:**
- The VM will redirect to the OS login page.
- **Enter your username and password.**
- Click "**Sign In**" to log in to CentOS.

Step 21



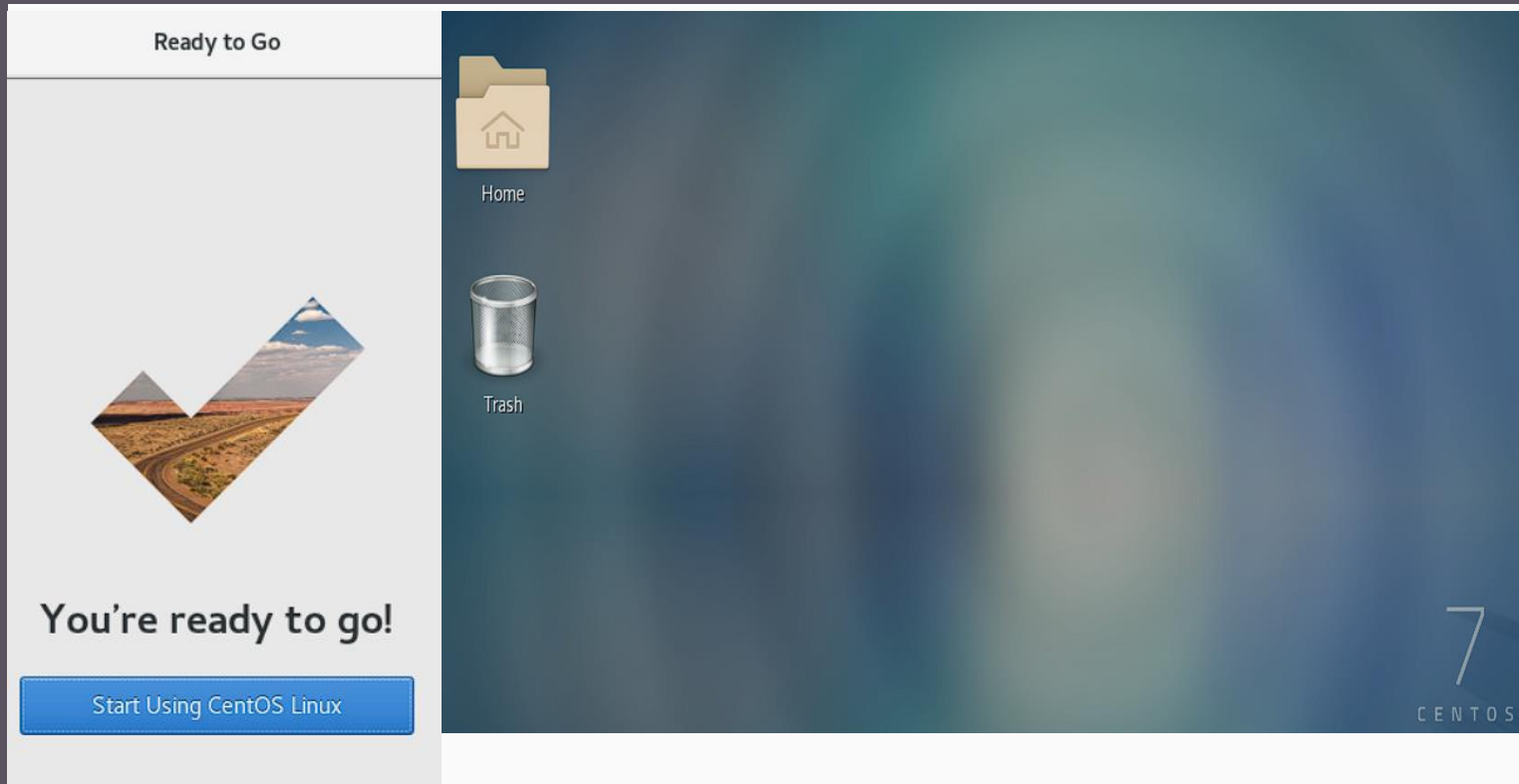
- After logging in:
- 1. Select your language and click **"Next."**
- 2. Choose the keyboard layout and click **"Next."**

Step 22



- After selecting language and keyboard layout:
- Click on "Location Services" and then **"Next."**
- 2. Connect your online account or click **"Skip"** to proceed without connecting.

Step 23



- Click on "**Start Using CentOS Linux**" to begin using the OS.
- CentOS installation is now **successfully installed and ready to use.**

Post-Installation configuration in CentOS

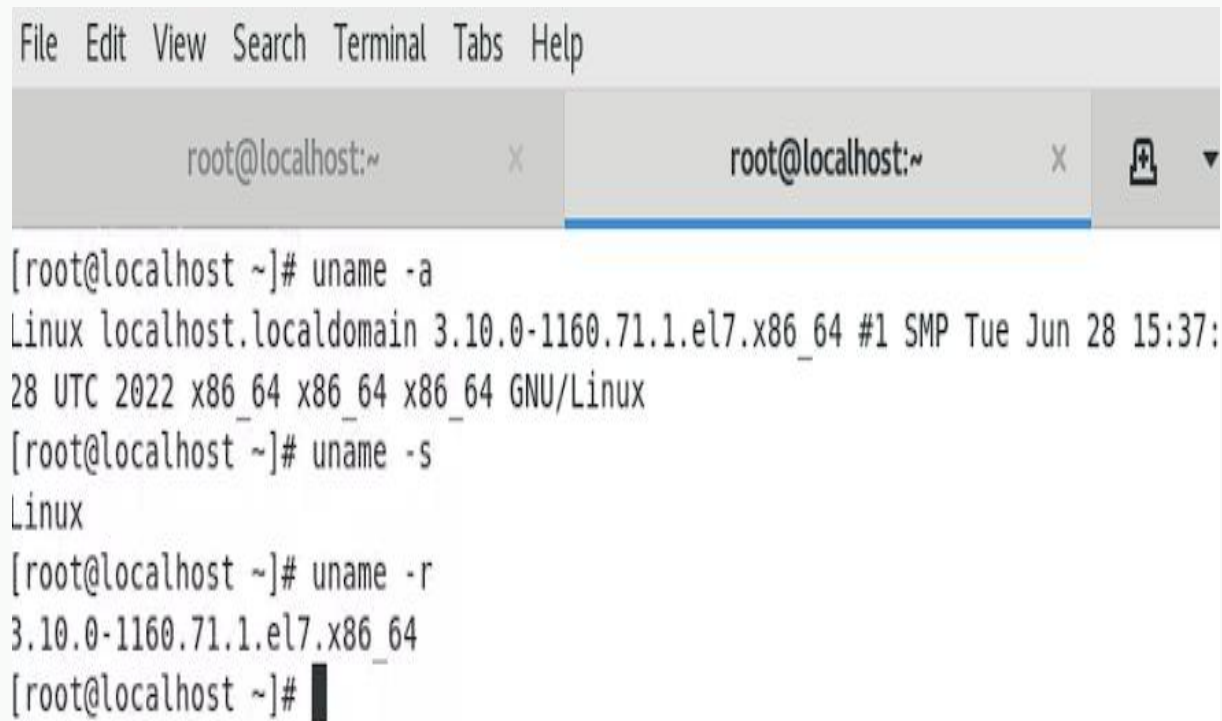
System Information

Disk Partitioning Information

Network Configuration

User Account Management

System Information



A terminal window with a menu bar (File, Edit, View, Search, Terminal, Tabs, Help) and two tabs labeled 'root@localhost:~'. The terminal shows the following commands and output:

```
[root@localhost ~]# uname -a
Linux localhost.localdomain 3.10.0-1160.71.1.el7.x86_64 #1 SMP Tue Jun 28 15:37:
28 UTC 2022 x86_64 x86_64 x86_64 GNU/Linux
[root@localhost ~]# uname -s
Linux
[root@localhost ~]# uname -r
3.10.0-1160.71.1.el7.x86_64
[root@localhost ~]#
```

- **For System Information we can use these commands :**
- **`uname -a` :**
 - Displays: All system information including kernel name, network node hostname, kernel release, kernel version, machine hardware name, processor type, and operating system.
- **`uname -s` :**
 - Displays: The kernel name (e.g., `Linux`).
- **`uname -r` :**
 - Displays: The kernel release version (e.g., `5.10.0-8-amd64`).

Disk Partitioning Information

```
root@localhost:~  
[root@localhost ~]# lsblk  
NAME            MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT  
sda              8:0    0   20G  0 disk  
├─sda1           8:1    0    1G  0 part /boot  
├─sda2           8:2    0   19G  0 part  
│   └─centos-root 253:0    0   17G  0 lvm  /  
│       └─centos-swap 253:1    0    2G  0 lvm  [SWAP]  
sdb              8:16    0   10G  0 disk  
└─sdb1           8:17    0   10G  0 part  
sdc              8:32    0    5G  0 disk  
sr0             11:0    1 1024M  0 rom  
[root@localhost ~]# █
```

- **command for disk partitioning information:**
- **`fdisk -l`** - Displays: Detailed partition table information for all disks.
- **`lsblk`** - Displays: List of all block devices (e.g., disks, partitions) with basic information like size and mount points.
- **`lsblk -f`** - Displays: Detailed block device information including filesystem type, label, and UUID.

Network Configuration

```
File Edit View Search Terminal Tabs Help
root@localhost:~ x root@localhost:~ x mukesh@localhost:~ x
[mukesh@localhost ~]$ ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    ether 00:0c:29:ab:da:94 txqueuelen 1000 (Ethernet)
    RX packets 4622 bytes 289215 (282.4 KiB)
    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

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 214 bytes 18342 (17.9 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 214 bytes 18342 (17.9 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:b3:47:26 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
```

- For network configuration, we can use the following commands:
- **`ifconfig`** - Displays: Network interfaces and their current configurations, including IP addresses and network statistics.
- **`ip addr`** - Displays: Detailed information about IP addresses assigned to network interfaces.
- **`ip link`** - Displays: Information about network interfaces, including their status and MAC addresses.

User Account Management

```
root@localho... x root@localho... x mukesh@loc... x root@localho... x
[root@localhost ~]# useradd User4
[root@localhost ~]# passwd User4
Changing password for user User4.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[root@localhost ~]# groupadd group1
[root@localhost ~]# cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
mukesh:x:1000:1000:Mukesh:/home/mukesh:/bin/bash
user1:x:1001:1001:./home/user1:/bin/bash
User1:x:1002:1002:./home/User1:/bin/bash
User2:x:1003:1003:./home/User2:/bin/bash
User3:x:1004:1004:./home/User3:/bin/bash
User4:x:1005:1005:./home/User4:/bin/bash
[root@localhost ~]#
```

- **Point-wise guide for user account management:**
- **Create a User Account:** Use ``useradd username`` to add a new user.
- **Set User Password:** Use ``passwd username`` to set or change the user's password.
- **Create a User Group:** Use ``groupadd groupname`` to create a new user group.
- **Verify User Information:** Use ``cat /etc/passwd`` to view user account details.

```
[root@localhost ~]# cat /etc/group
```

```
root:x:0:
```

```
bin:x:1:
```

```
daemon:x:2:
```

```
sys:x:3:
```

```
adm:x:4:
```

```
tty:x:5:
```

```
disk:x:6:
```

```
lp:x:7:
```

```
mem:x:8:
```

```
kmem:x:9:
```

```
wheel:x:10:
```

```
mukesh:x:1000:mukesh
```

```
user1:x:1001:
```

```
User1:x:1002:
```

```
User2:x:1003:
```

```
User3:x:1004:
```

```
User4:x:1005:
```

```
group1:x:1006:
```

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

- **Point-wise guide including the group information:**
- **Check Group Information:**
 - Use ``cat /etc/group`` to view group details, including the created group (e.g., ``group1`` with GID 1006).

Project Scope

Understand the Linux Boot Process:

Learn how Linux starts up, from powering on to loading the OS.

Ensure the System Boots Up with Linux:

Confirm that the system successfully starts and operates with the Linux OS.

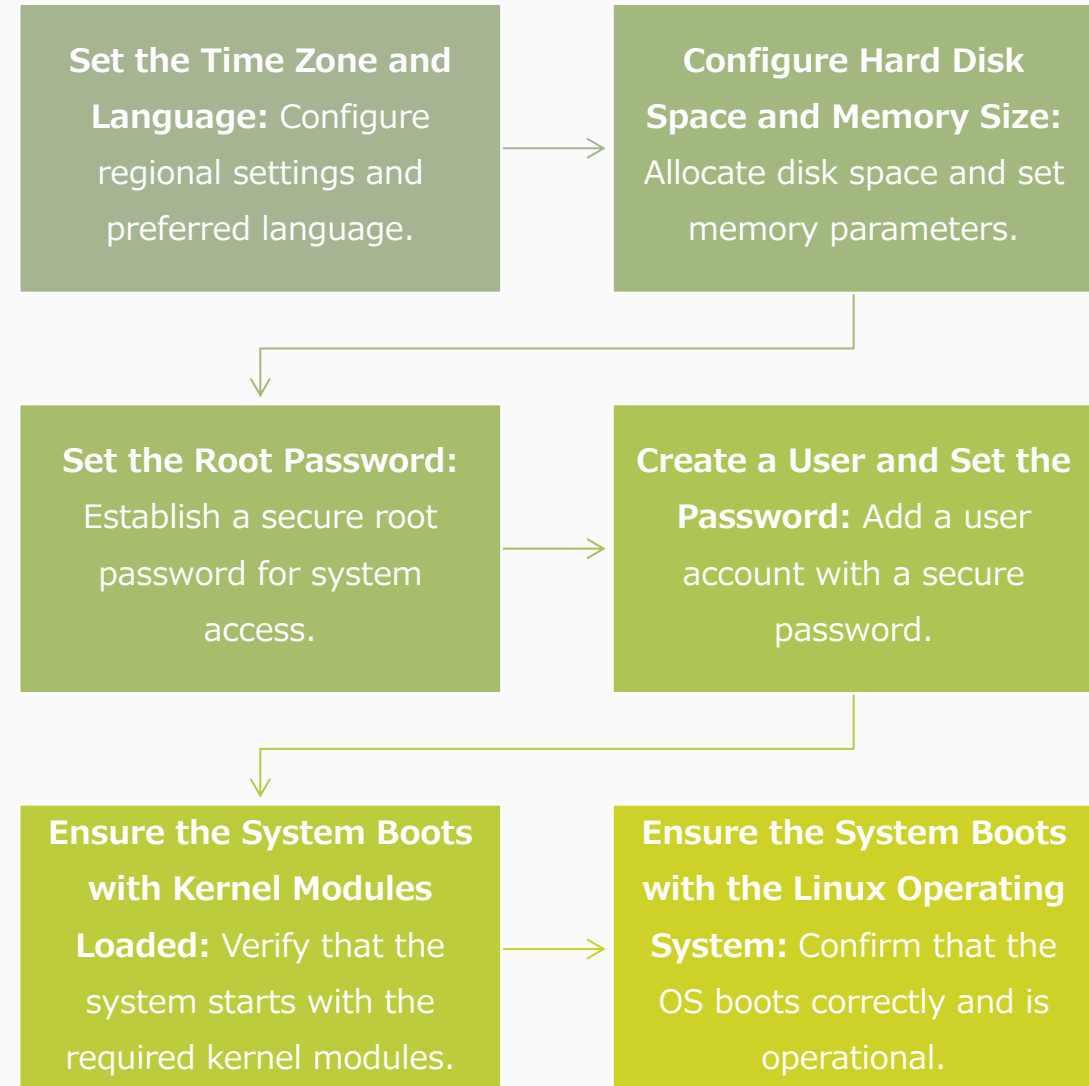
Prerequisites and Project Requirements

Knowledge of Hardware Components: Basic understanding of computer hardware essential for installation.

Basic Understanding of Linux and Command-Line Tools: Familiarity with Linux basics and commands needed for setup

Understanding of Kernel and Boot Process: Insight into how the Linux kernel and boot sequence function.

Deliverables



Summary

Project Objective: This project aimed to provide practical experience in installing and configuring a Linux operating system, focusing on understanding the boot process and ensuring proper system setup.

Scope Covered: Included learning the boot sequence, configuring essential system settings, and verifying system functionality.

Key Achievements: Successful setup of time zones, disk space, user accounts, and kernel modules, ensuring a fully operational Linux system.

Conclusion



Completion: All project goals were achieved, including correct installation and configuration of Linux with all specified settings.



Outcome: The Linux system is fully functional and configured as required, demonstrating successful implementation and readiness for use.

THANK YOU

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