



Bahirdar University

Course : Operating System (OS)

Assignment-3

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Red Hat Enterprise Linux (RHEL) Server Installation Using Virtual Machine

Introduction

This document describes the complete procedure for installing Red Hat Enterprise Linux (RHEL) Server on a virtual machine. The installation is performed from scratch using virtualization software, covering VM creation, configuration, operating system installation, error handling, and post-installation verification.

Red Hat Enterprise Linux (RHEL) Server is a stable, secure, and enterprise-grade Linux OS used to run mission-critical applications and services.

Key Roles:

- Application Hosting: Run web apps, databases, and business software.
- File & Data Management: Secure storage and data sharing.
- Network Services: DNS, email, web, and other essential services.
- Virtualization & Containers: Support for KVM, Docker, and OpenShift.
- Security & Compliance: SELinux, firewalls, and regulatory compliance.

Prerequisites

Official RHEL download page (free for developers / trial):

[Download Red Hat Enterprise Linux \(RHEL\) Server from Red Hat Developer](#)

Before starting the installation, ensure the following requirements are met:

- RHEL Server ISO file (RHEL 8.1 version)
- Virtualization software (Oracle VirtualBox / VMware / KVM)
- Minimum system requirements:
 - CPU: 2 cores
 - RAM: 4 GB (8 GB recommended for GUI)
 - Disk space: 40 GB
- Internet connection (optional)
- Red Hat account (for subscription registration)

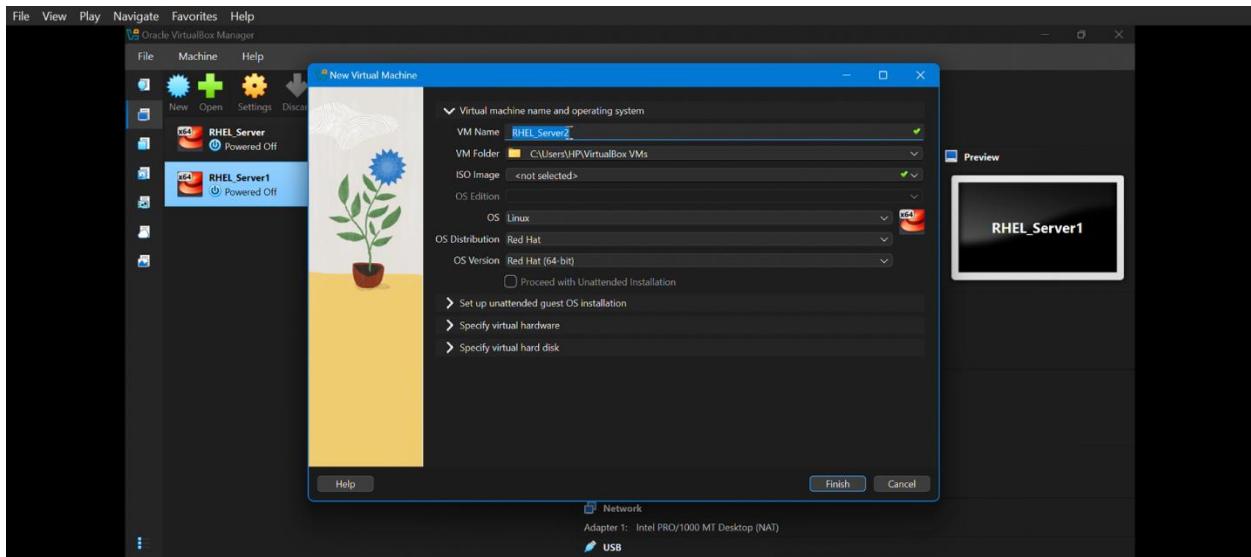
Virtual Machine Creation

Step 1: Launch Virtualization Software

Open the virtualization software installed on the host system (e.g., Oracle VirtualBox).

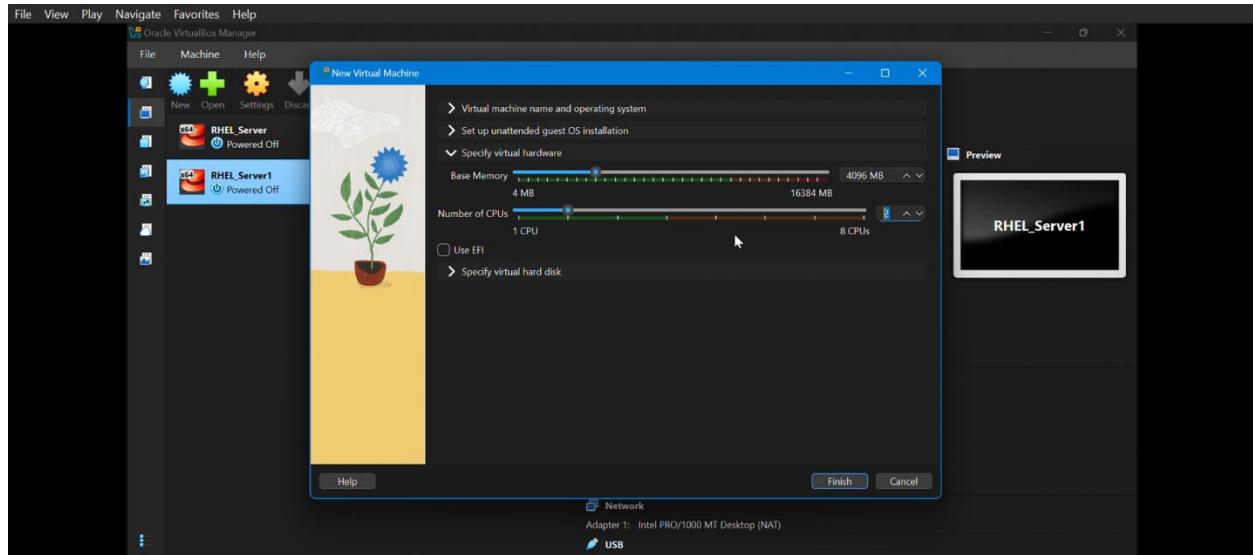
Step 2: Create a New Virtual Machine

1. Click **New**.
2. Enter the VM name (e.g., RHEL-Server).
3. Select:
 - o Type: **Linux**
 - o Version: **Red Hat (64-bit)**
4. Click **Next**.



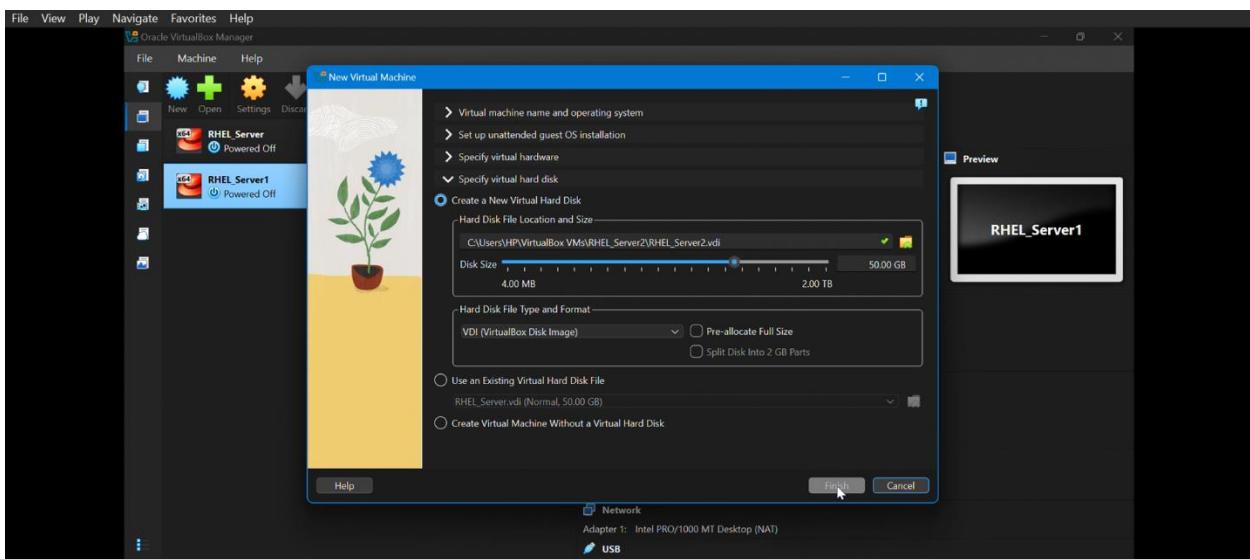
Step 3: Specify Virtual Hardware

1. Assign Base Memory **4096 RAM**.
2. Assign Number of **2 CPU cores**.
3. Click **Next**.



Step 4: Specify Virtual Hard Disk

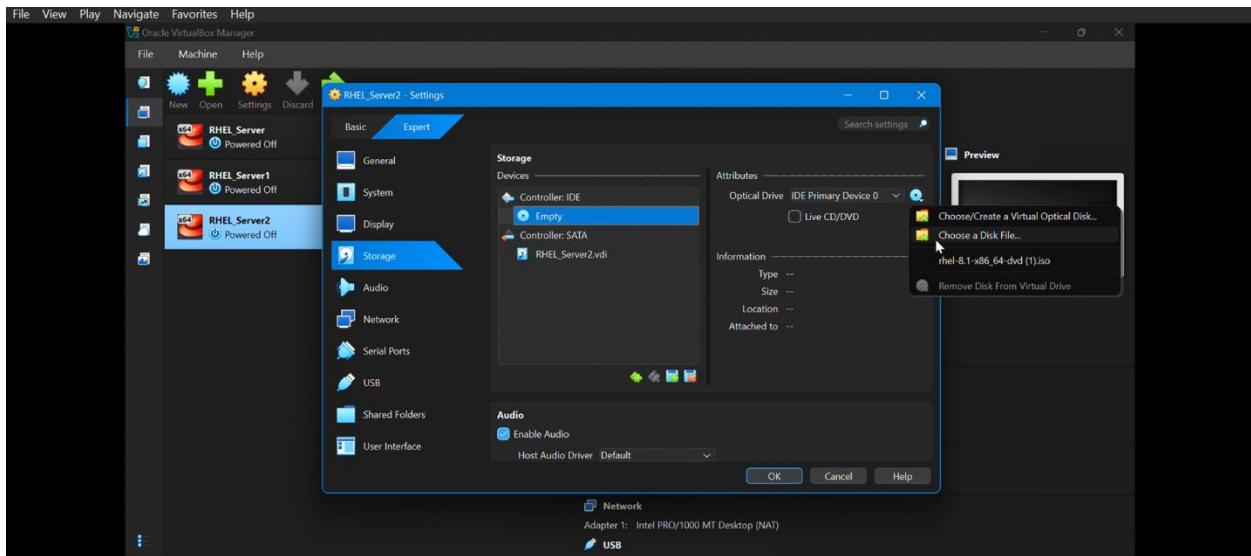
1. Select Create a virtual hard disk now.
2. Choose VDI (Virtual Disk Image).
3. Select Dynamically allocated.
4. Set Disk Size 50GB
5. Click Finish



VM Hardware Configuration

Step 5: Attach RHEL ISO File

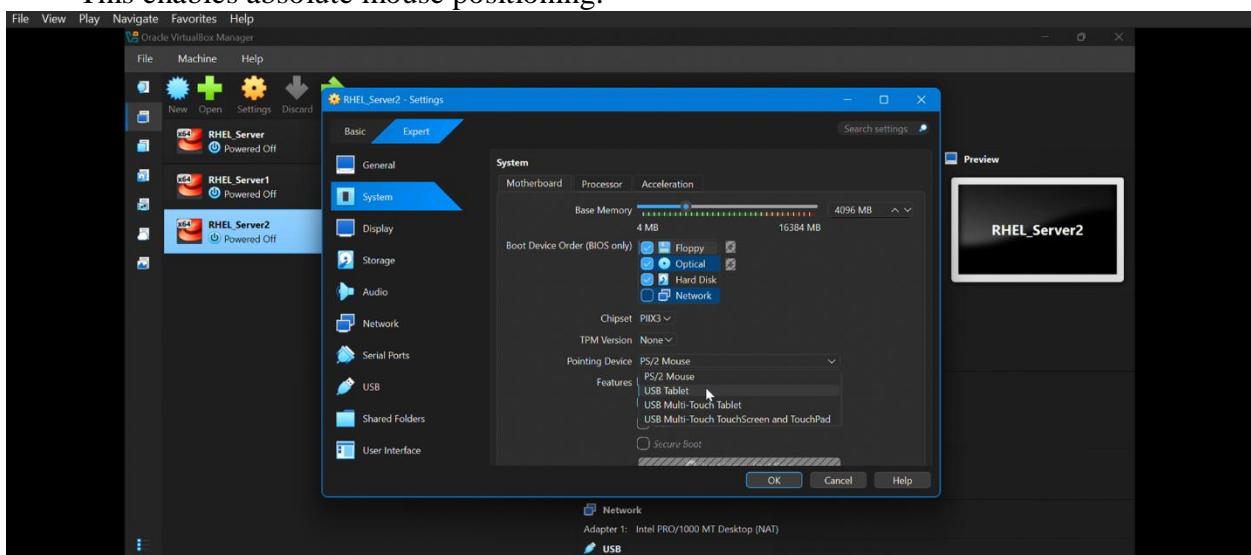
1. Open VM Settings.
2. Go to Storage.
3. Under Controller IDE, attach the **RHEL ISO file**.
4. Confirm the ISO is selected as boot media.



Step 6: Change Pointing Device to USB Tablet

1. Locate the **Pointing Device** dropdown.
2. Change the selection from: PS/2 Mouse **to** USB Tablet

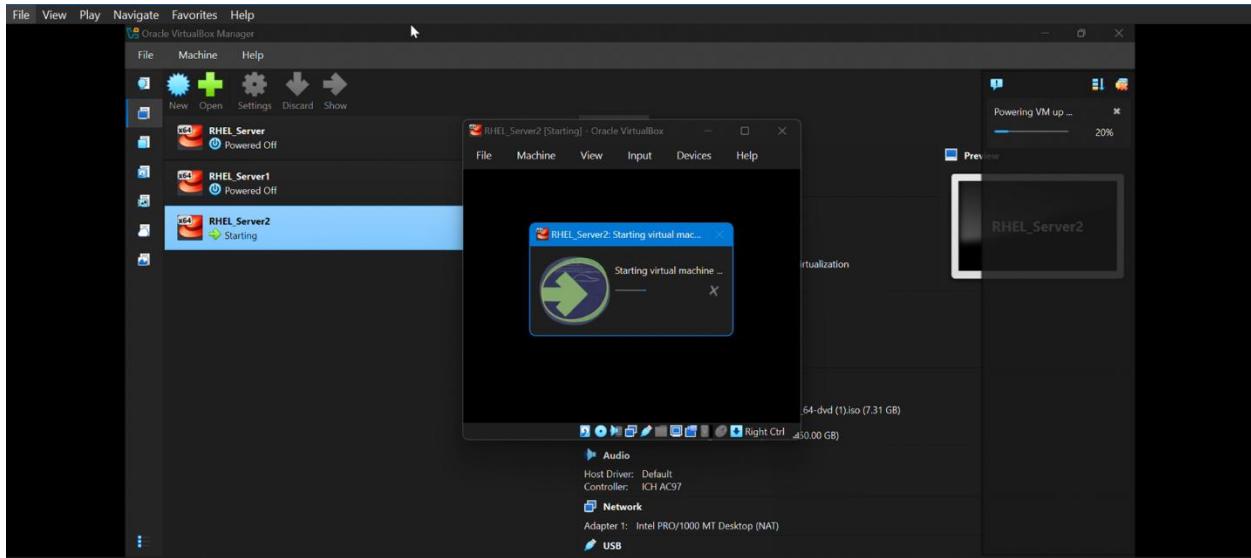
This enables absolute mouse positioning.



Booting the Virtual Machine

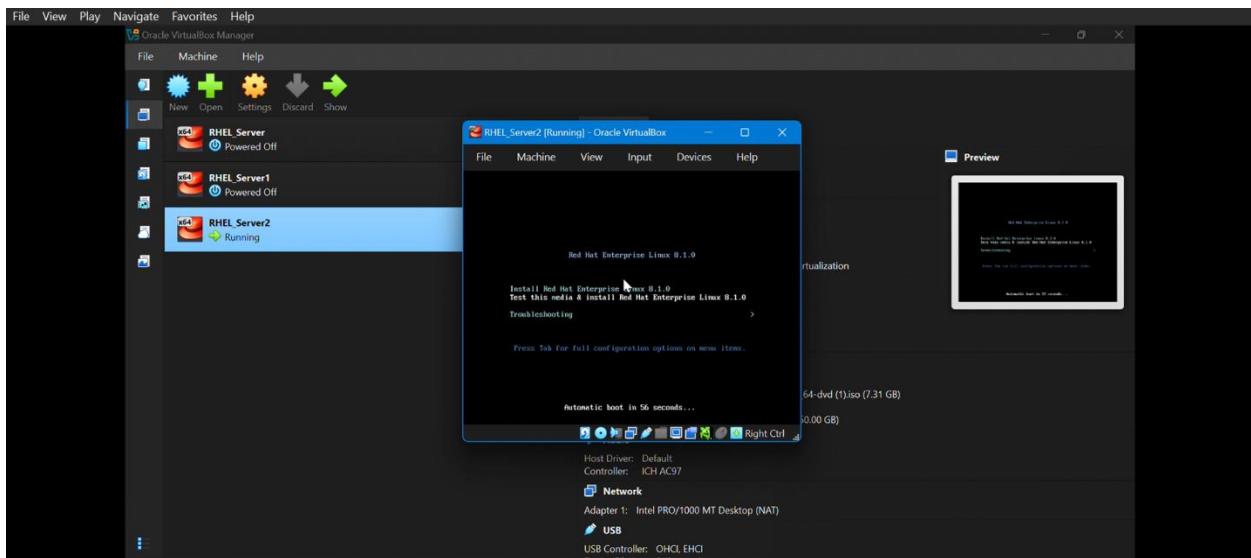
Step 8: Start the Virtual Machine

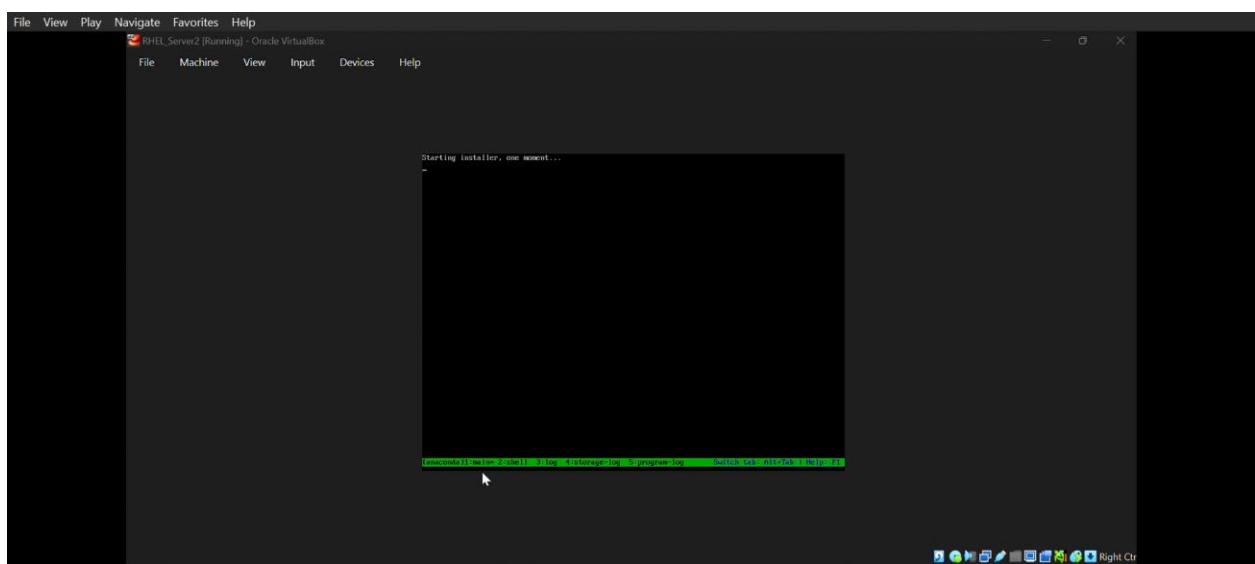
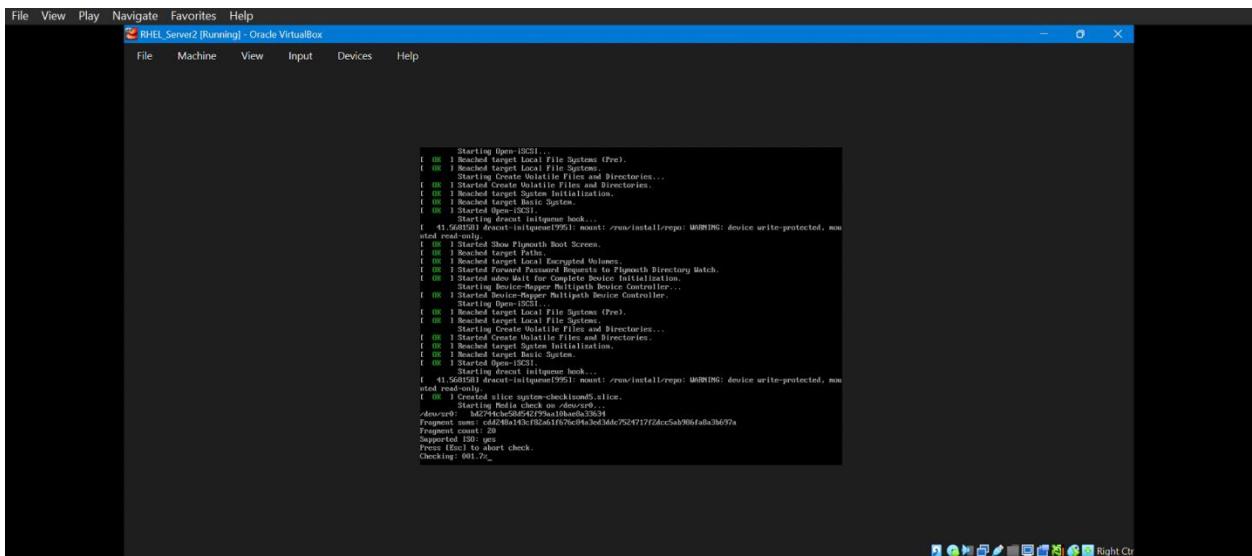
1. Click **Start**.
2. The VM boots from the RHEL ISO.
3. The RHEL boot menu appears.



Step 9: Select Installation Option

Choose **Install Red Hat Enterprise Linux** and press **Enter**.

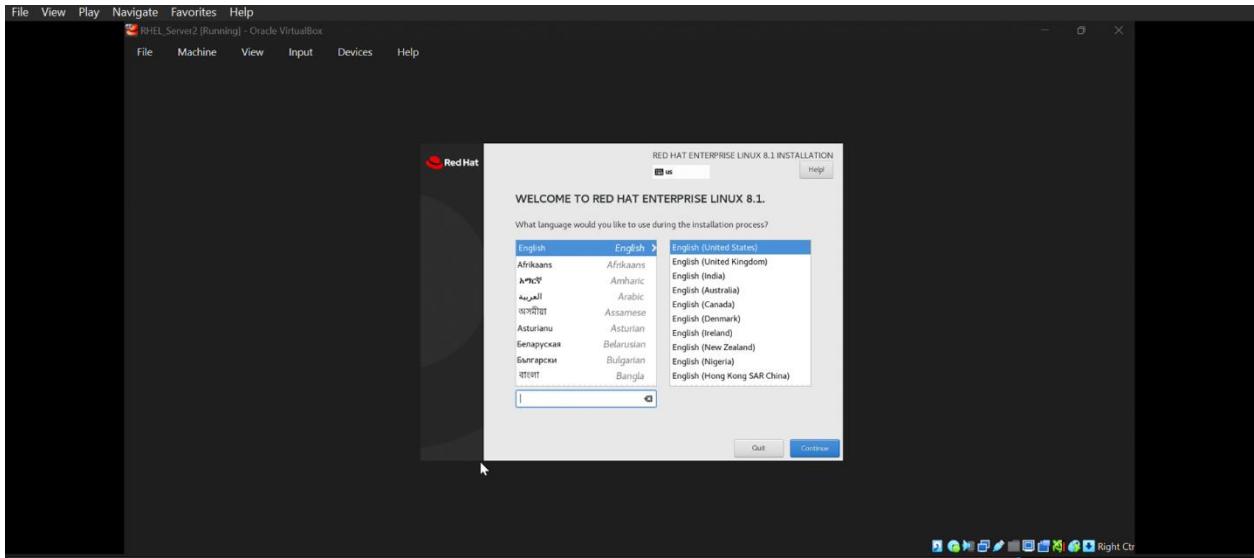




RHEL Installer Configuration

Step 10: Select Language

1. Choose the preferred installation language.
2. Click **Continue**.

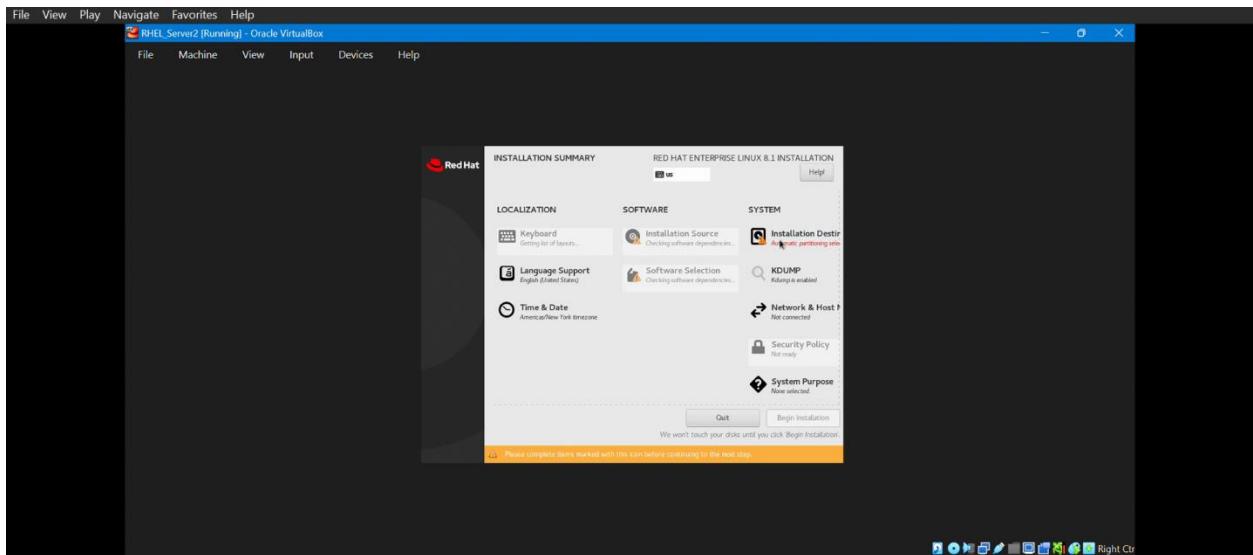


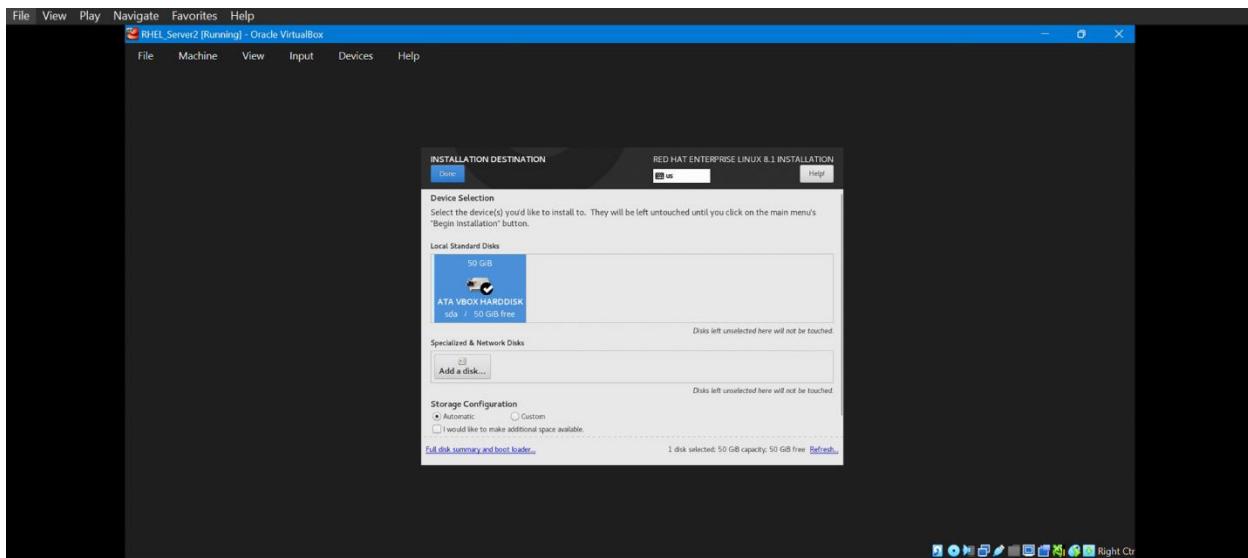
Disk Configuration

Step 13: Installation Destination

1. click **Installation Destination**.
2. The installer displays the available storage devices detected by the system.
3. Select the virtual disk created for the RHEL virtual machine.
4. Choose Automatic partitioning to allow the installer to create the required partitions automatically.
5. Leave all other storage and partitioning options set to their default values.
6. Review the selected disk to ensure it is correct.
7. Click **Done** to confirm the installation destination.

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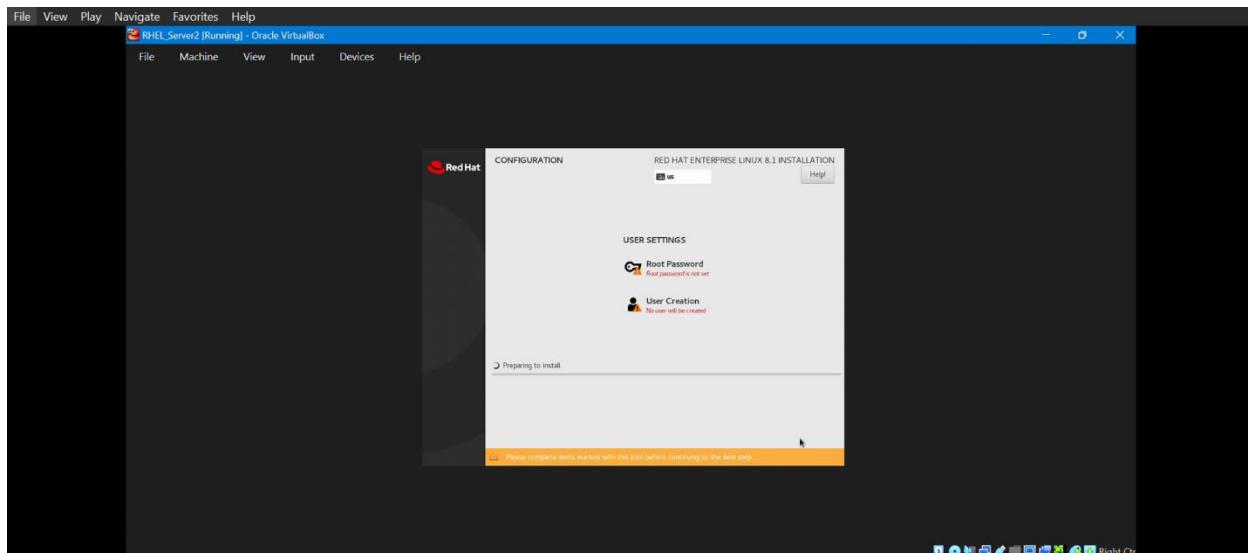


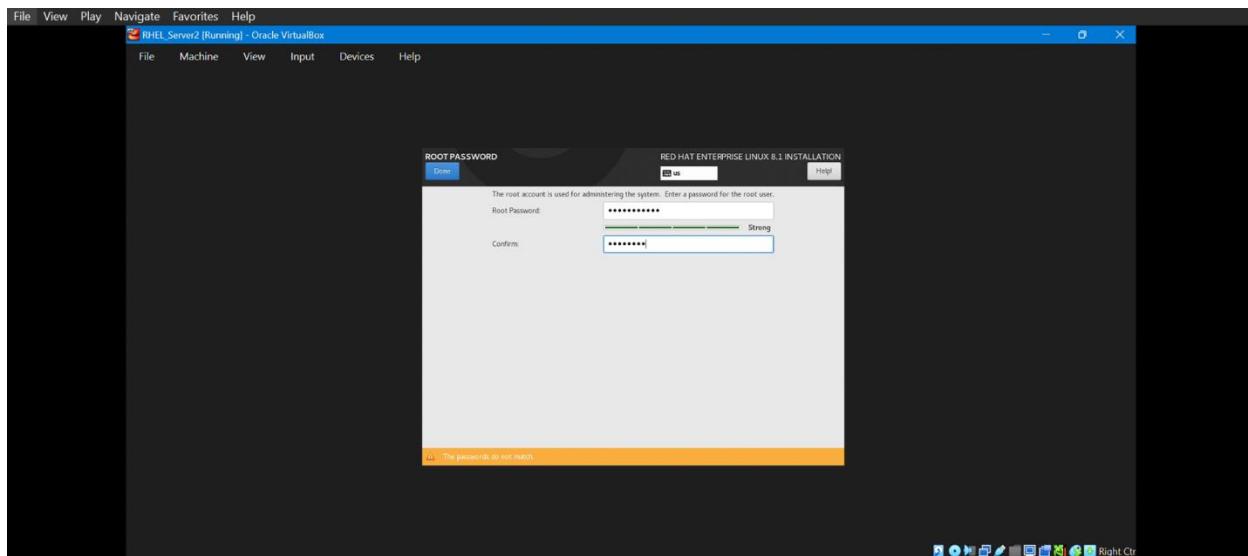
User and Security Configuration

Step 17: Set Root Password

1. click **Root Password**.
2. Enter a strong password for the root (administrator) account.
3. Re-enter the password to confirm it.
4. Ensure the password meets the required security complexity.
5. Click **Done** to apply the root password configuration.

Setting a secure root password ensures proper administrative access to the system after installation.

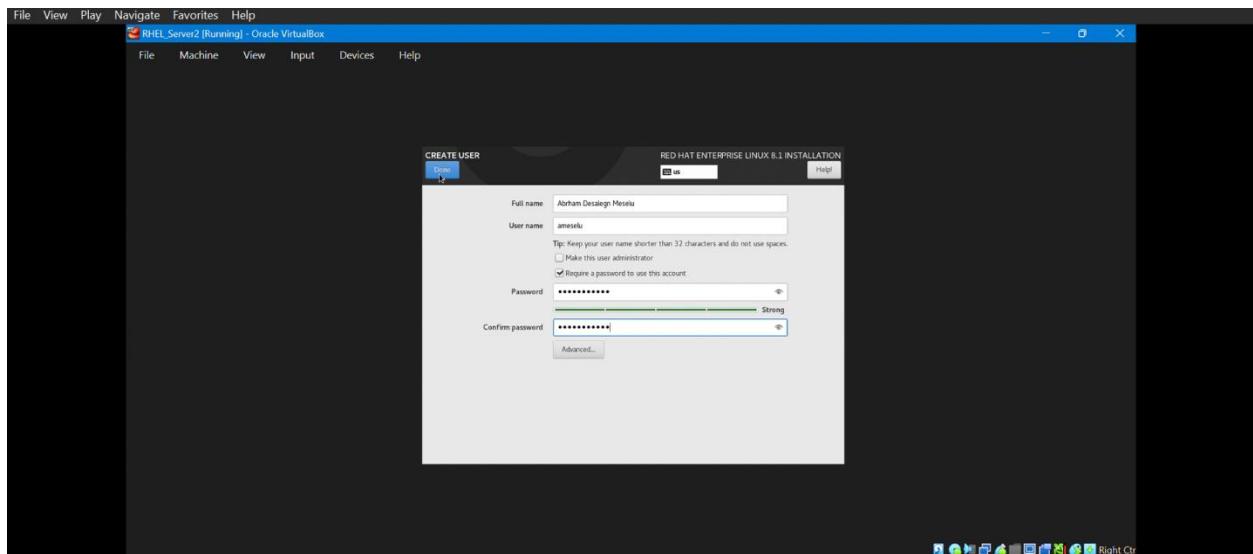




Step 18: Create User Account

1. click **User Creation**.
2. Enter the required user details, including:
 - ✓ Full name
 - ✓ Username
 - ✓ Password
3. Confirm the password by re-entering it.
4. (Optional) Enable Make this user administrator to grant sudo (administrative) privileges.
5. Review the entered information for accuracy.
6. Click **Done** to save the user account configuration.

Creating a user account allows secure, non-root access to the system and is recommended for day-to-day administration tasks.

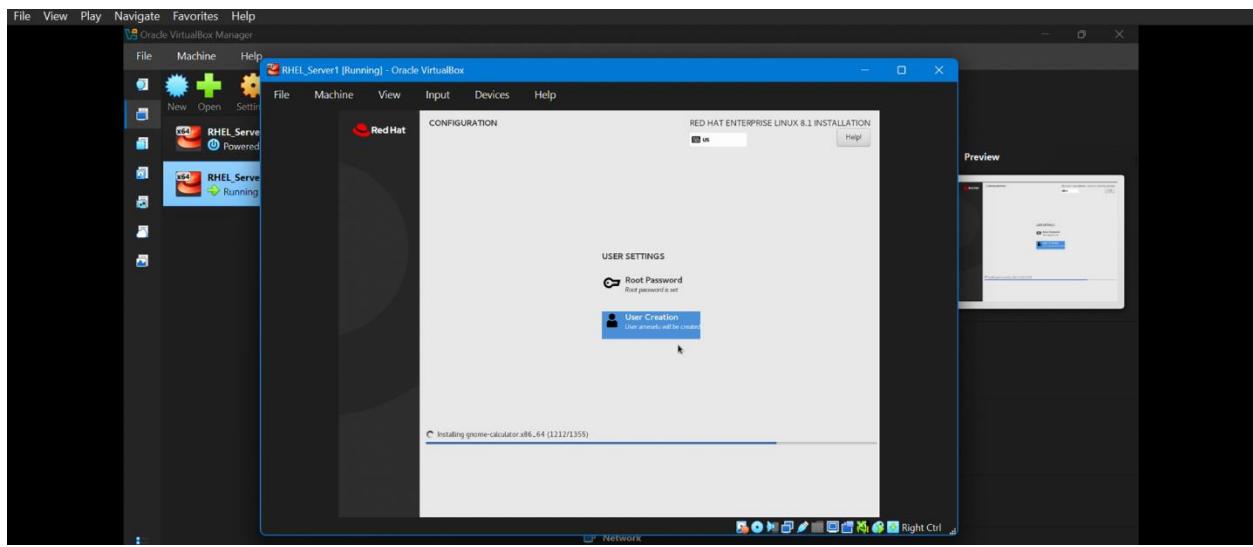


Begin Installation

Step 19: Begin Installation

1. After completing all required configuration options in the installation summary screen, review the selected settings to ensure accuracy.
2. Click Begin Installation to start the RHEL Server installation process.
3. The installer copies system files, installs selected software packages, and applies system configurations automatically.
4. Monitor the installation progress displayed on the screen.
5. Wait until the installation process completes successfully before proceeding.

This step initiates the actual installation of Red Hat Enterprise Linux Server on the virtual machine.

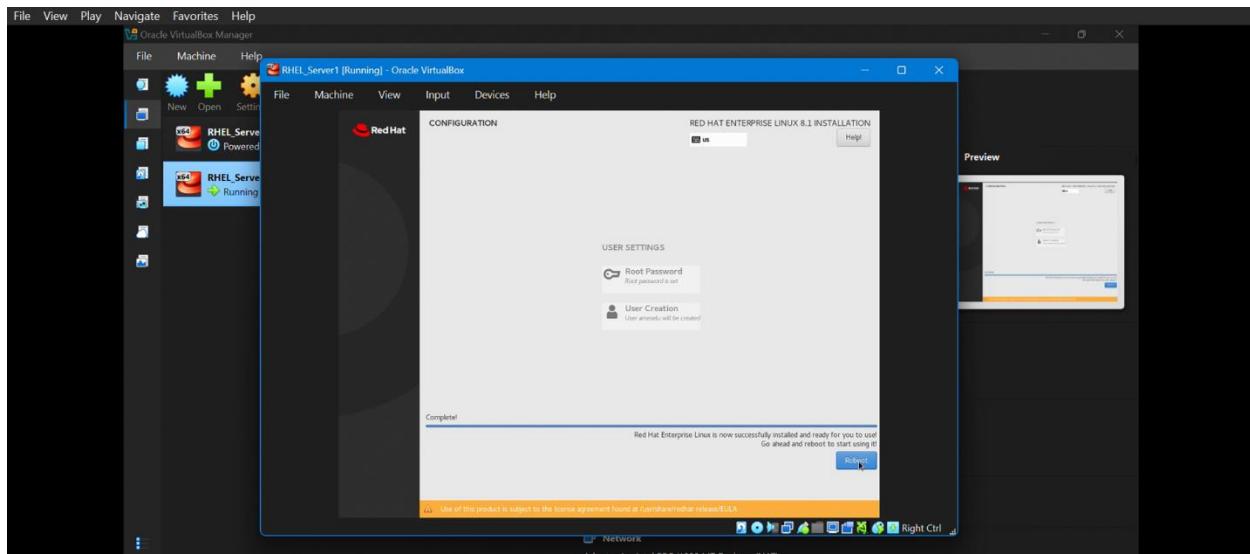


Post-Installation Tasks

Step 20: Reboot the System

1. Once the installation process is completed, the installer displays the Installation Complete message.
2. Click Reboot System to restart the virtual machine.
3. During reboot, remove the RHEL ISO file from the virtual optical drive to prevent the system from booting into the installer again.
4. Allow the system to boot from the newly installed virtual hard disk.
5. Wait until the RHEL login screen appears.

The reboot process finalizes the installation and transitions the system to normal operating mode.



Step 21: First Login

1. After the system reboots, the RHEL login screen is displayed.
2. Select the user account created during installation or choose the **root** user.
3. Enter the appropriate username and password.
4. Click Sign In or press Enter.
5. Verify that the system loads successfully into: the command-line interface (CLI) for minimal installations, or the graphical desktop environment (GUI) for GUI-based installations.

Successful login confirms that the RHEL Server installation has completed correctly and the system is ready for further configuration.

