Lab - Create a Virtual Install of Fedora Server Using VirtualBox (2022)

Upon completion of this lab, the student will be able to:

- Install and Configure Fedora Server
- Install a GNOME Desktop Environment

Overview
In this lab, students will create a virtual install of Fedora Server 35. Fedora Server is a powerful, flexible operating system that includes the best and latest data center technologies. The only fundamental differences between a workstation and a server are a server provides networking services such as DNS, DHCP, and others.
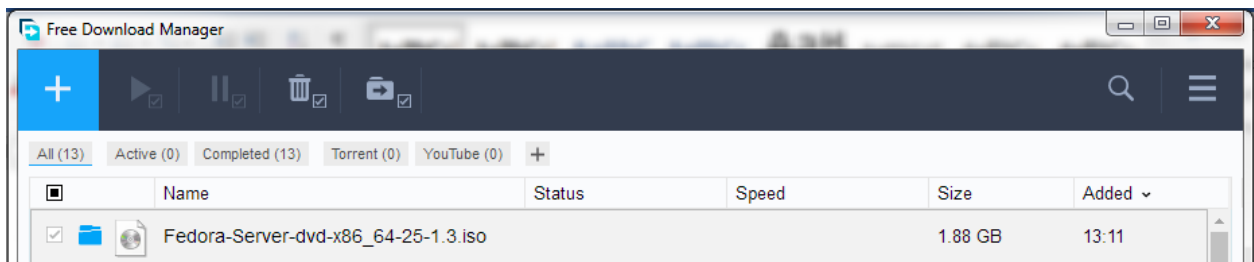
We begin by downloading an ISO image of the Fedora Server.

If you do not have an install of Free Download Manager, you can download it **here**.

Once the download manager is installed, we can use it to quickly download the Fedora Server's ISO image.

Download Fedora Server **here**.

When the download is complete, you should see the following:

Next, open VirtualBox and click on Machine, and from the context menu, select New. This starts the Create Virtual Machine Wizard.

3. Give the VM a user-friendly name
4. For the type, select Linux
5. for the version, select Fedora (64-bit)
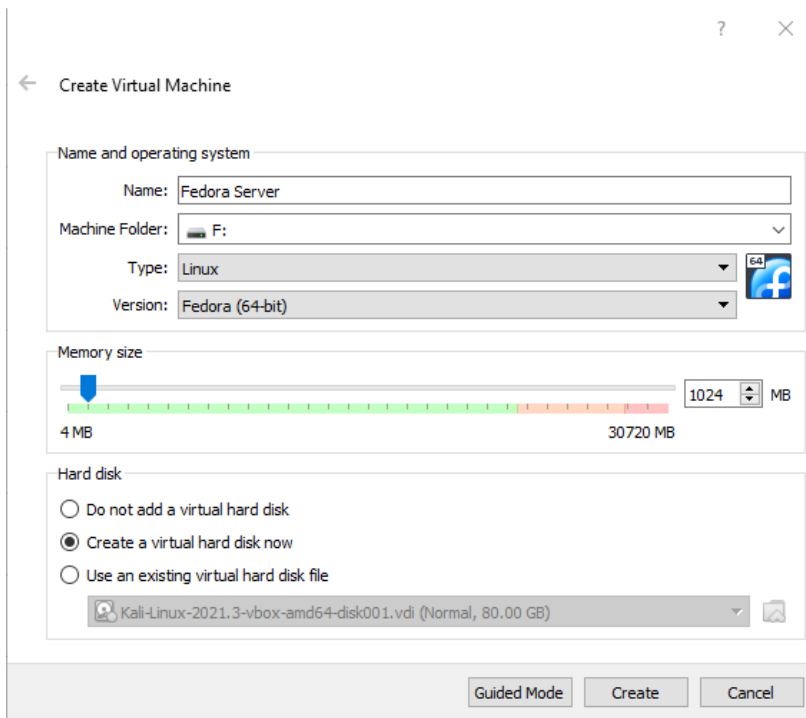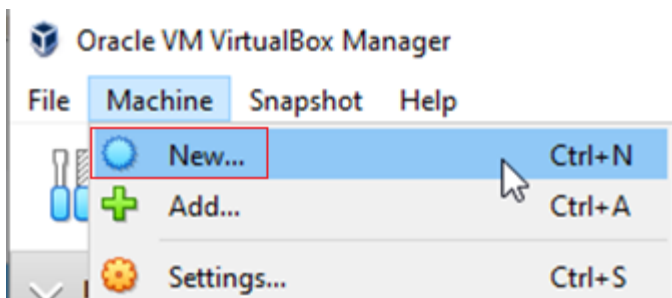
Create Virtual Hard Disk

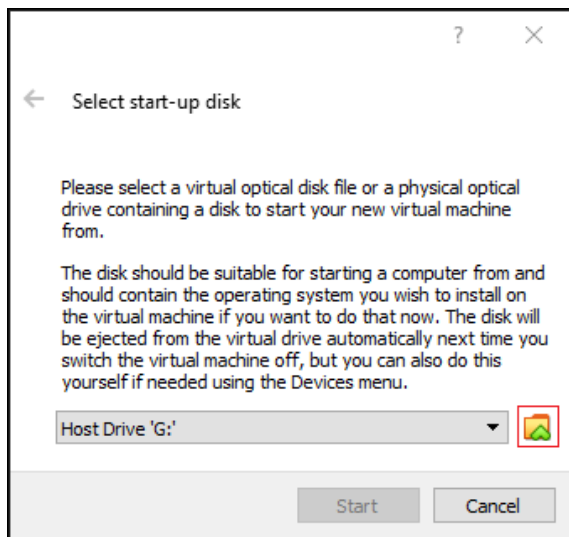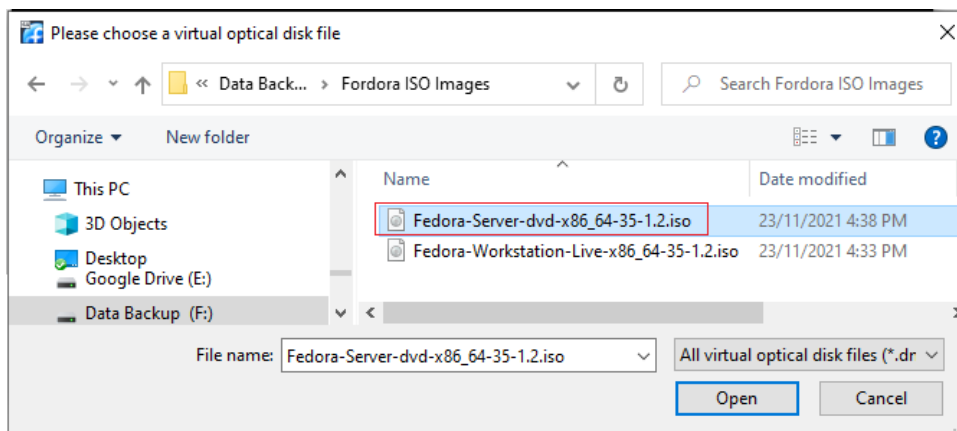Change the size of the dynamic disk to 50 GB. Create button.
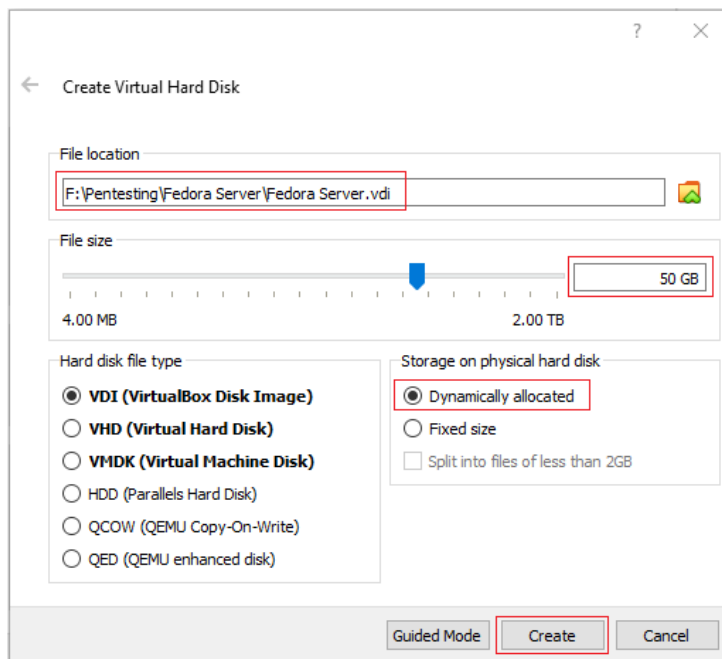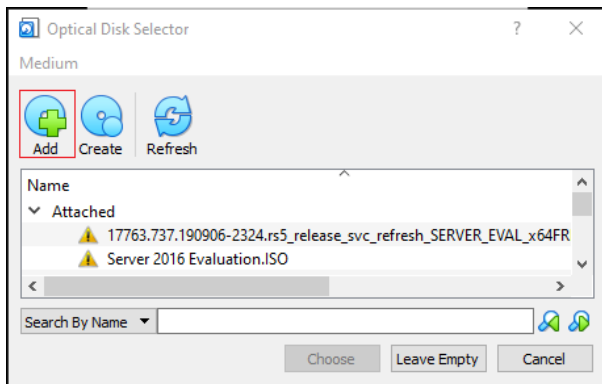
Click Create.

From the left windowpane, find your banner for Fedora Server, double click to launch.

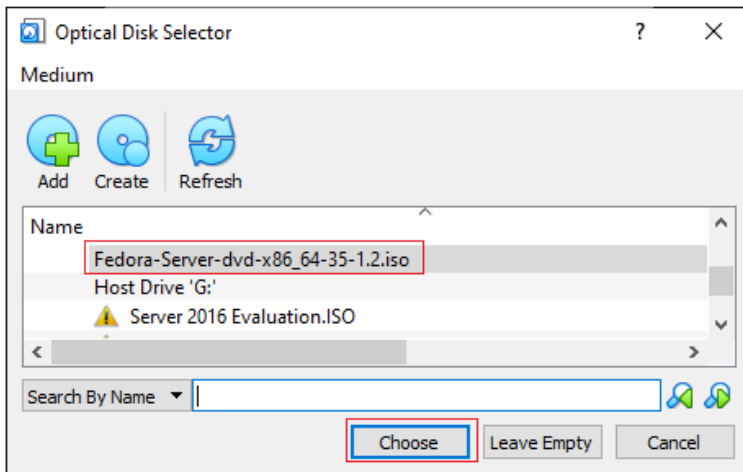On the Select Start-up disk page, click the folder icon.

On the next screen, click the Add button and browse to the download location of your Fedora Server ISO image.
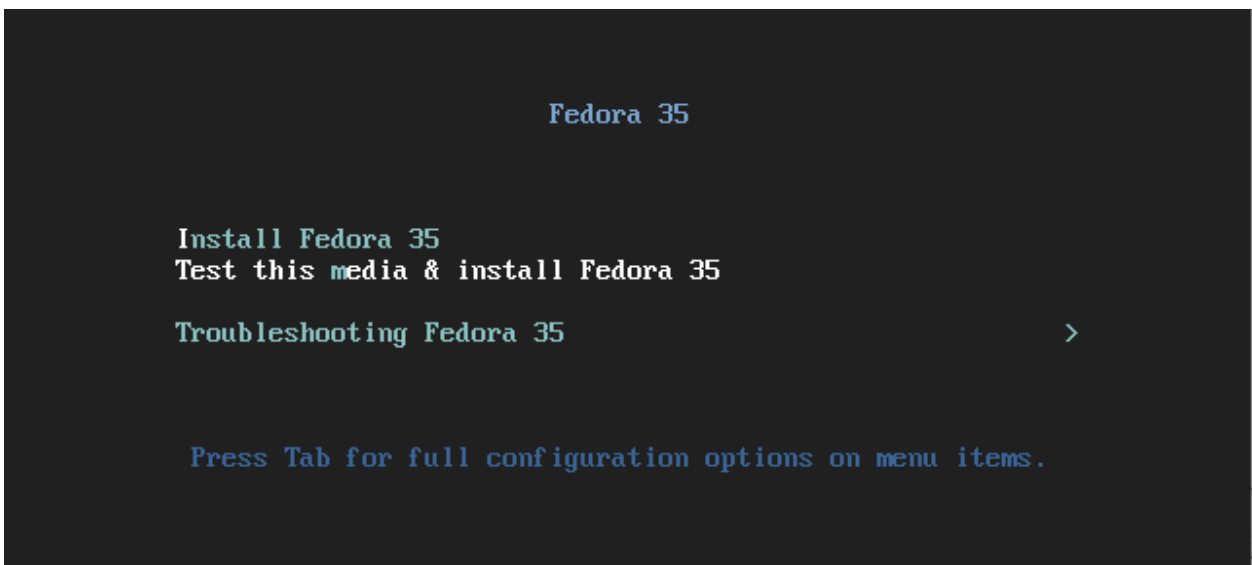

Back at the Optical Disk Selector

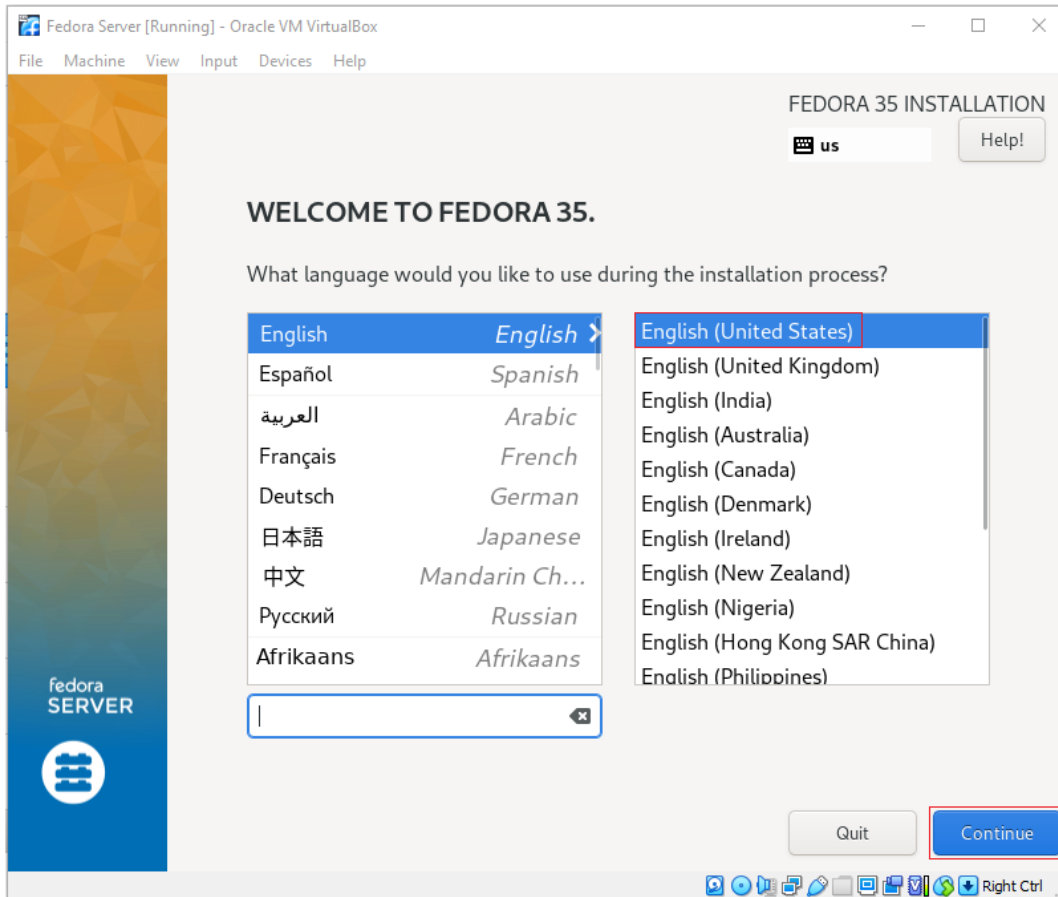Click the Choose button to begin the installation.

Back at the Select start-up disk screen, click the Start button to begin installing.

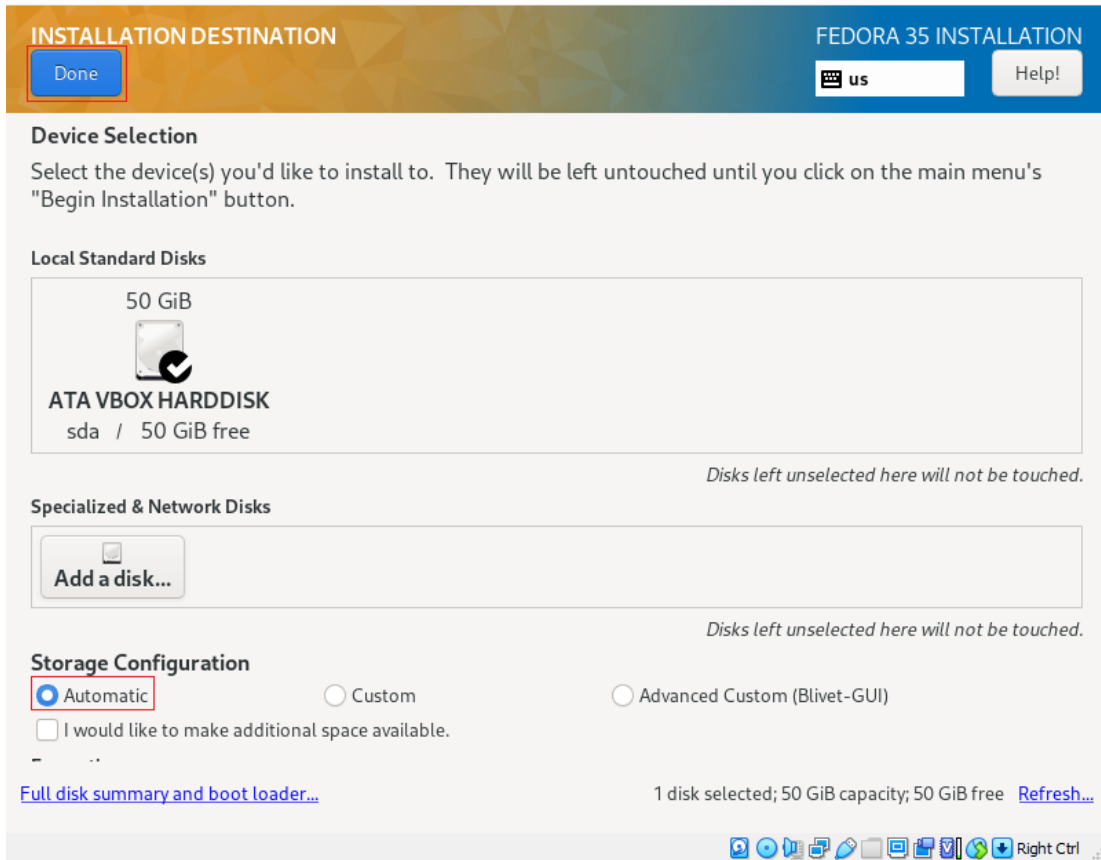On the first screen, select Install Fedora 35.

Select your language. Press the continue button.

On the next screen, click on **Hard Disk Partitioning,**

On the next screen, click the button for installation destination, and on the next page, ensure the radio button for Automatic is selected. Click done to return to the Installation Screen.

We next enable the root account. Click the button for Root Account.
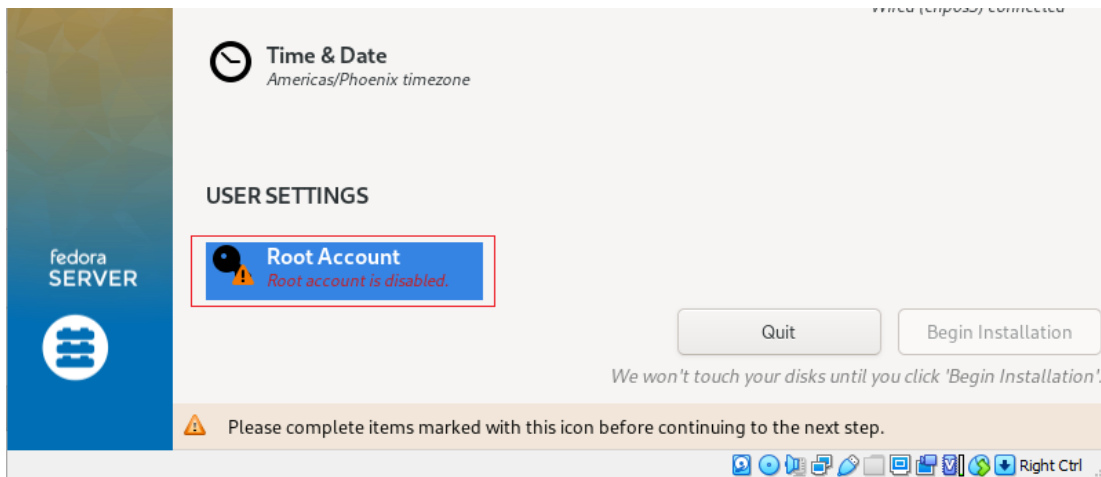
On the next page, select the radio to Enable the root account. Select the box to allow root SSH login with password. Click Done.
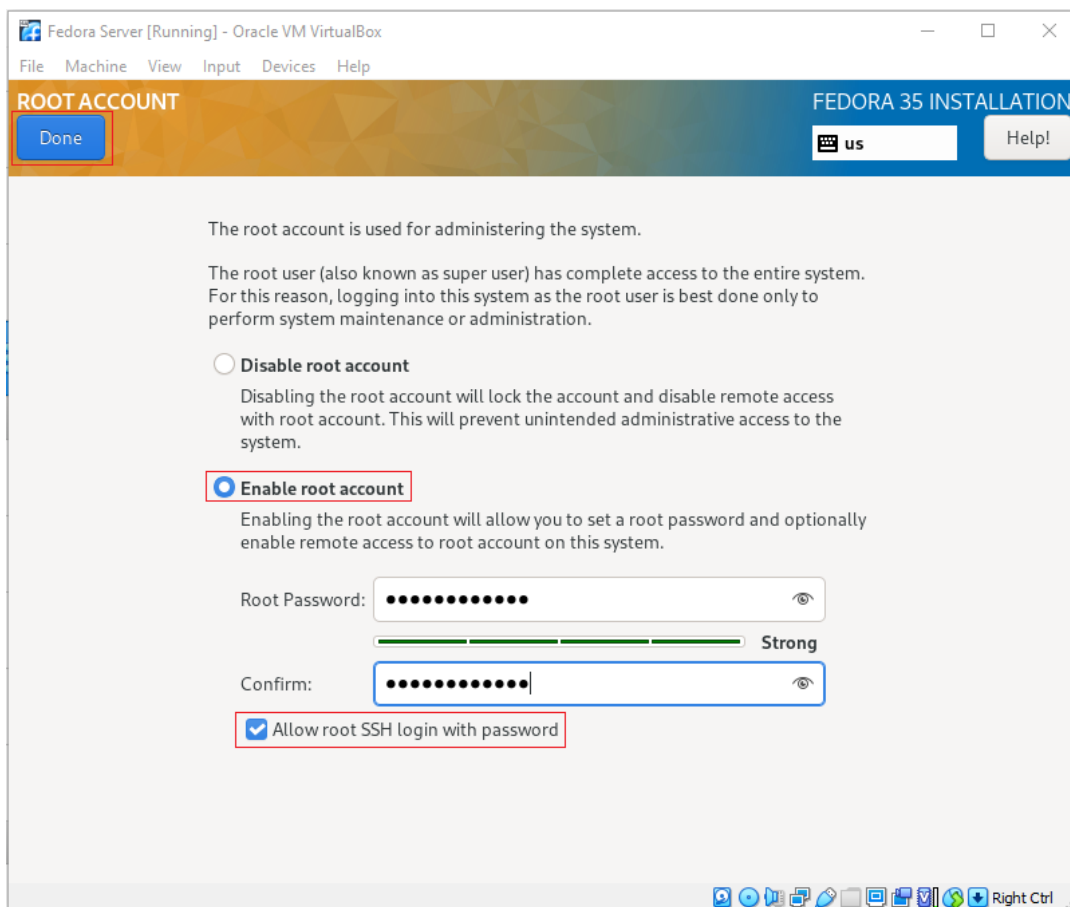
Back at the Installation Summary, check for any warning. Fix any issues and then click the Begin Installation button.
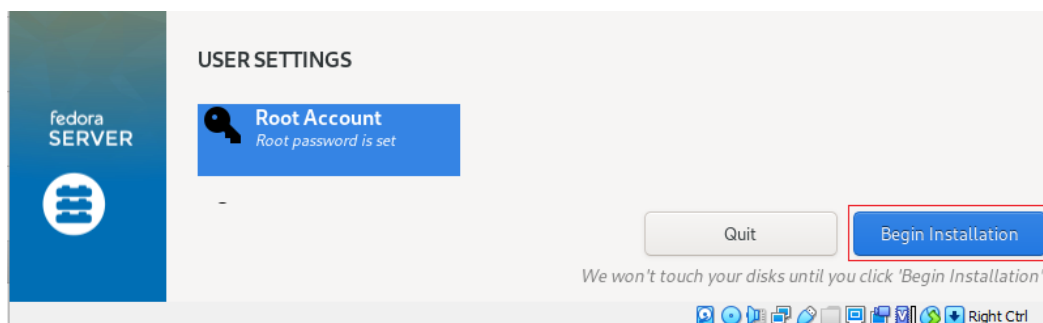
This installation process begins.
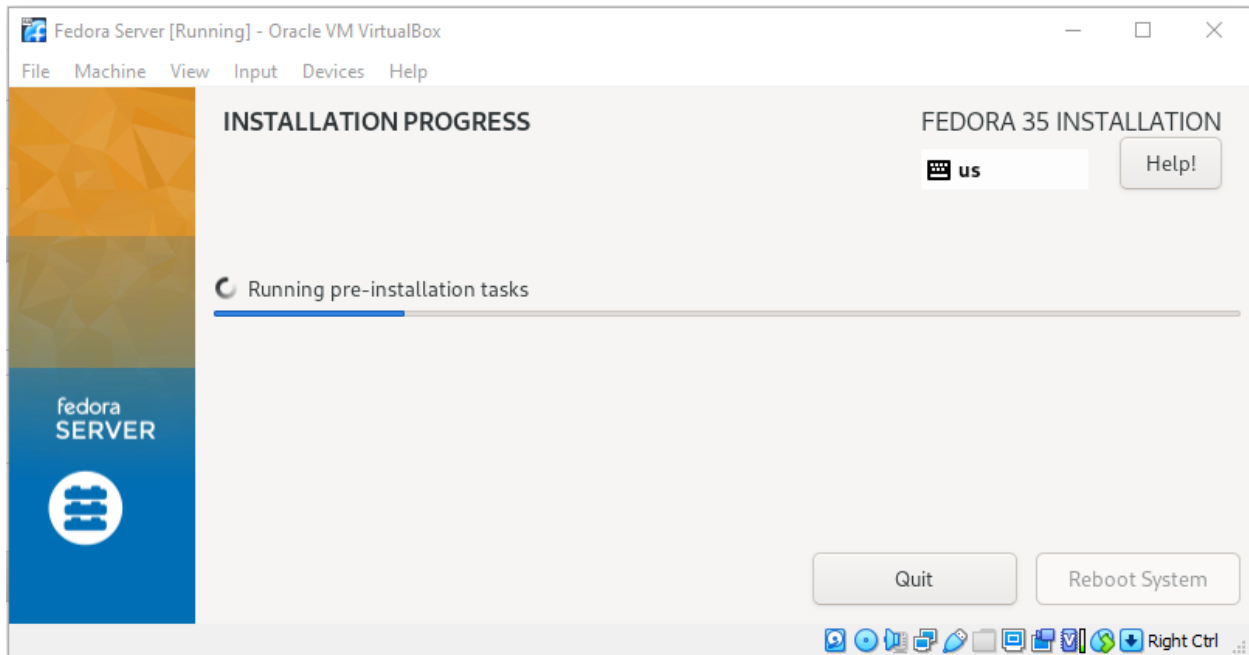
Once the installation has been completed, go to the taskbar and click on Devices and Optical Drives. Remove the checkmark next to your Fedora Server DVD iso image.

On the next window, click Force Unmount.

Lastly, click on reboot.

The machine will automatically reboot. If the device hangs, power off the machine using the power off option with VirtualBox.

Be patient as the installation completes. When the install completes, you'll be prompted for your login and password.
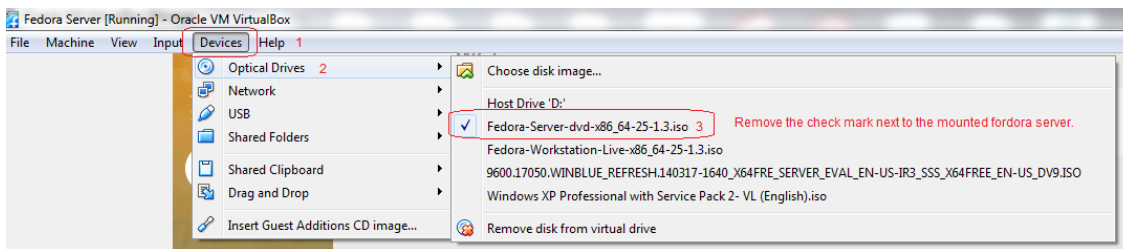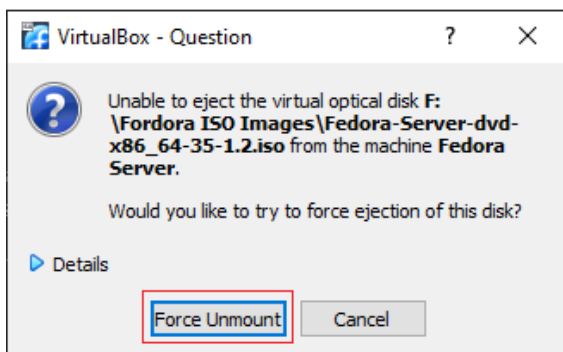
Use root as your login and type in the password you created during the install phase. You will not see the password as you type it in. This is the default behavior of Linux.

Installing the Fedora Workstation Desktop for Server

This brings you to the root prompt. This is how Fedora Server installs, with no GUI Desktop Environment. This is referred to as the minimal install.

We first need to update the system. At the prompt, type: **dnf update**

You may have to scroll to the bottom of the window to see click Y for yes, for the install will continue. Watch the screen; you will be prompted more than once to continue.

After the update, type **reboot** at the prompt.

We can install the GNOME Desktop Environment by typing:

```
dnf -y group install "Basic Desktop" GNOME
```

```
Web console: https://fedora:9090/ or https://10.0.2.15:9090/

fedora login: root
Password:
[root@fedora ~]# dnf -y group install "Basic Desktop" GNOME
Fedora 35 - x86_64              15% [====-                    ] 1.0 MB/s |  10 MB      00:53 ETA
```

The Fedora Workstation packages begin to download and install. Be patient! The installation takes some time. This is Linux; it does not get easier. Anything you want Linux to do must be downloaded and installed.

Once the install completes, remove the unneeded packages using the

dnf clean packages.
Reboot

```
[root@localhost ~]# dnf clean packages
140 files removed
[root@localhost ~]#
```

After the cleanup, type **reboot** at the prompt.

If the reboot halts at the command prompt, log in as root and type the two following commands at the prompt to start the GNOME Desktop Environment.

echo "exec /usr/bin/gnome-session" >> ~/.xinitrc

startx

```
Fedora Linux 35 (Server Edition)
Kernel 5.14.10-300.fc35.x86_64 on an x86_64 (tty1)

Web console: https://fedora:9090/ or https://10.0.2.15:9090/

fedora login: root
Password:
Last login: Tue Nov 23 03:15:04 on tty1
[root@fedora ~]# echo "exec /usr/bin/gnome-session" >> ~/.xinitrc
[root@fedora ~]# startx
```

The machine boots into the GUI desktop and you are prompted to create your root profile. In the upper right corner, click Next to step through the screens.

Troubleshooting

If the server does not boot to the desktop without the startx command, type the following at the terminal to make it permanent.

`systemctl set-default graphical.target`

Type startx when the prompt returns.

```
Fedora Linux 35 (Server Edition)
Kernel 5.14.10-300.fc35.x86_64 on an x86_64 (tty1)

Web console: https://fedora:9090/ or https://10.0.2.15:9090/

fedora login: root
Password:
Last login: Tue Nov 23 03:34:01 on tty1
[root@fedora ~]# systemctl set-default graphical.target
Removed /etc/systemd/system/default.target.
Created symlink /etc/systemd/system/default.target → /usr/lib/systemd/system/graphical.target.
[root@fedora ~]# startx
```
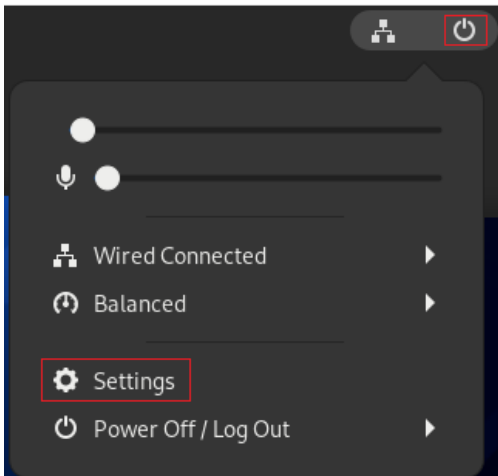
Log on as root using your root password at the log-in screen.
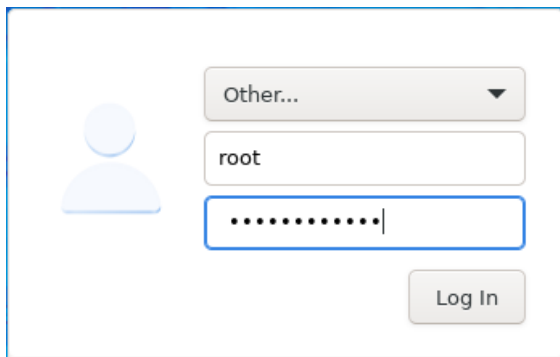
**Prevent Fedora from logging you off after 5 minutes of inactivity.**

From the Fedora desktop, go to the upper right corner and click on the power button. Now click on Settings in the lower-left corner.

From the left window pane, click on Power. Under Saving Options, for the Screen Blank, pull down the window, and from the context menu, select Naver.
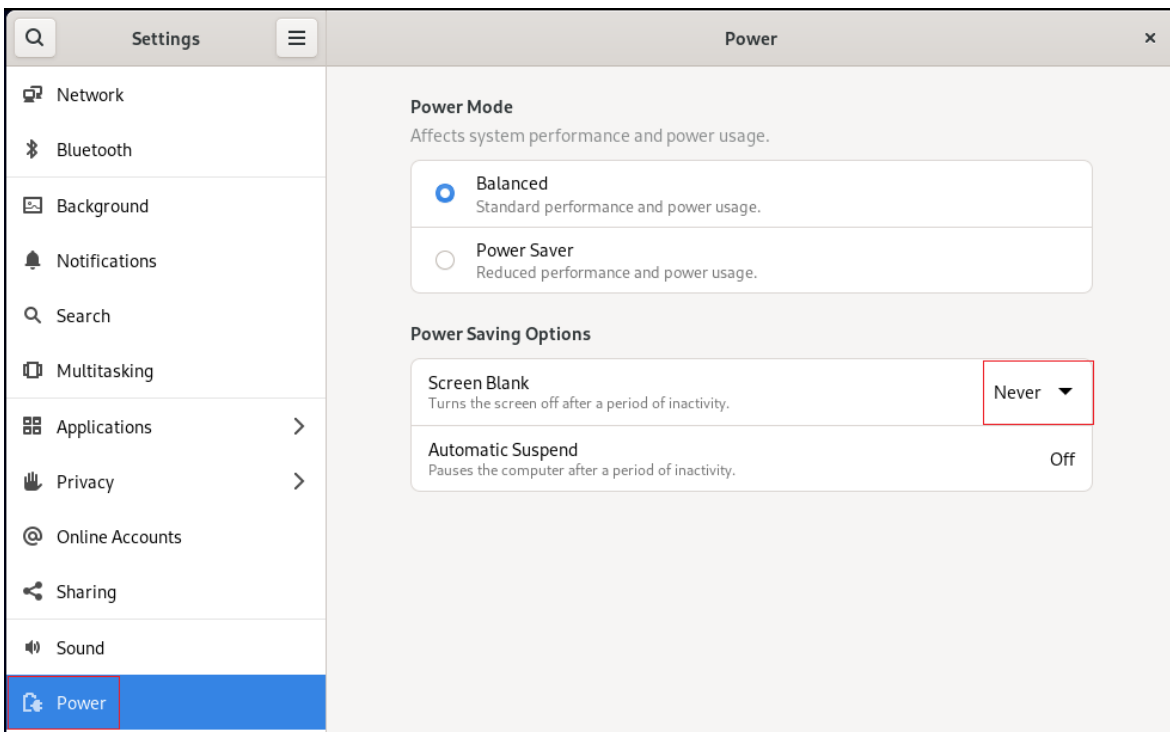
If you're ready to take a break before proceeding on to your next lab, you can shut down your Fedora Workstation using the control panel in the top right corner to access the power button. This is the only correct option for shutting your virtual machine!
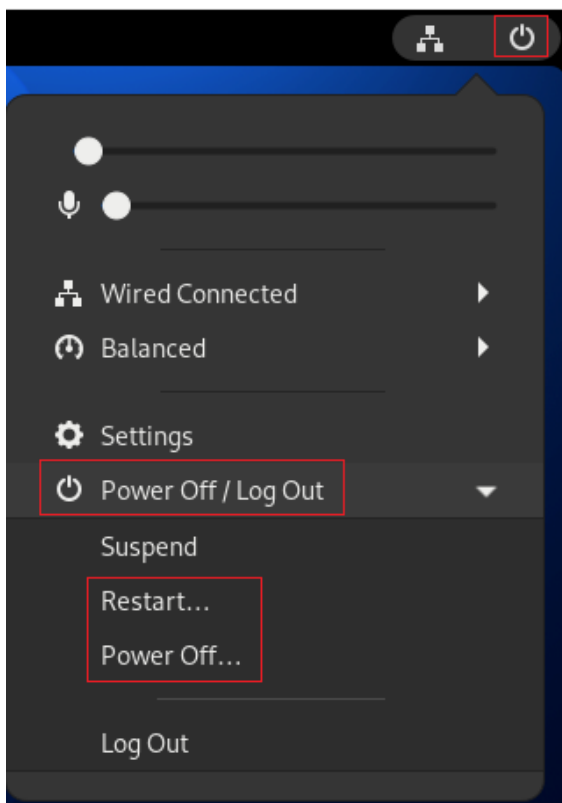
If you would like to keep working, proceed to the next Lab.

End of End 1ab!