

Installation Guide Setting Up Fedora Linux 38 in VirtualBox

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Overview

This installation guide covers the installation and configuration of **Fedora Linux** in a **VirtualBox** environment. It provides step-by-step instructions to help users create a reliable **Fedora** setup for cybersecurity labs, software testing, and Linux learning.

Objective

To enable users to install and configure **Fedora Linux 38** within **VirtualBox** successfully. By the end of this walkthrough, the user will have a fully functional Fedora environment, ready for practical cybersecurity labs, tool installations, or system administration practice.

Tools & Environment

- Host Operating System: Windows 10 (or similar)
- Virtualization Tool: Oracle VirtualBox 7.x
- Guest Operating System: Fedora Linux 38 (Workstation ISO)
- Processor: 2 cores (minimum)
- Memory: 4 GB RAM (recommended minimum)
- Storage: 50 GB free space on host OS (recommended minimum)
- Network: NAT (default VirtualBox configuration)
- Internet Connection: Required for system updates

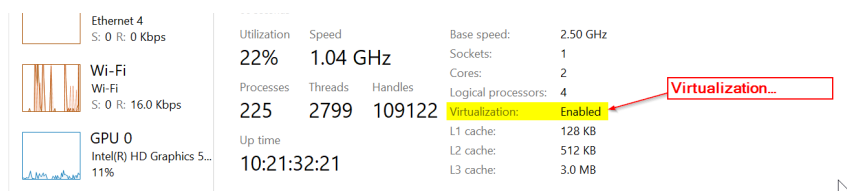
Note: All installations were performed in a test environment for demonstration and documentation purposes.

Prerequisites

Before starting the installation, make sure you have:

- A computer with at least 50 GB of free disk space and 8 GB of RAM.
- Virtualization is enabled in the BIOS or UEFI settings.
- Oracle VirtualBox 7.2.2 is installed on your host system.
- A stable internet connection is required for updates after installation.

Tip: To check if virtualisation is enabled on Windows, open Task Manager > Performance tab > CPU > look for “Virtualization: Enabled.”



Installing Fedora Linux 38 in VirtualBox - Step-by-Step Walkthrough

Task 1: Download Fedora 38

In this task, you'll obtain the official Fedora 38 Workstation installation image, which will be used to create a virtual machine later.

1. Visit the official Fedora archive: [Fedora 38 ISO Download](#).
2. Download Fedora Workstation
 - Locate and click the file named:
Fedora-Workstation-Live-x86_64-38-1.6.iso

Name	Last modified	Size	Description
Parent Directory	-	-	-
Fedora-Workstation-38-1.6-x86_64-CHECKSUM	2023-04-14 07:59	1.0K	
Fedora-Workstation-Live-x86_64-38-1.6.iso	2023-04-13 22:17	2.0G	

Note: The Fedora releases here are no longer supported or maintained, so they do not receive bug fixes or security updates. We do **not** recommend using these releases any more. For more information about Fedora's support cycle see the [life cycle](#) page.

3. The download will start automatically.

Allow the process to complete. The ISO file size is approximately **2 GB**.

Tip:

It's good practice to verify the integrity of the downloaded ISO file to ensure it hasn't been corrupted or tampered with.

*Follow the instructions here: **How to Verify Fedora ISO Integrity (Checksum Tutorial)***

Note:

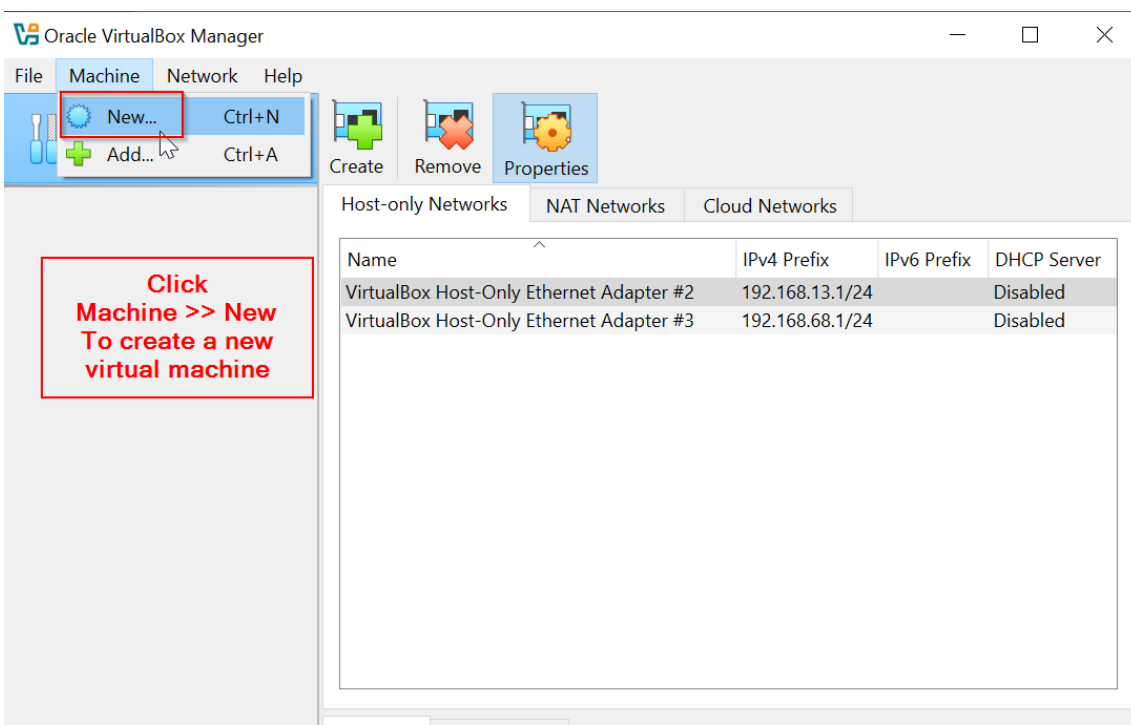
Always download Fedora ISOs from official Fedora repositories or mirrors. Avoid third-party sites, as unofficial ISOs may contain modified or unsafe files.

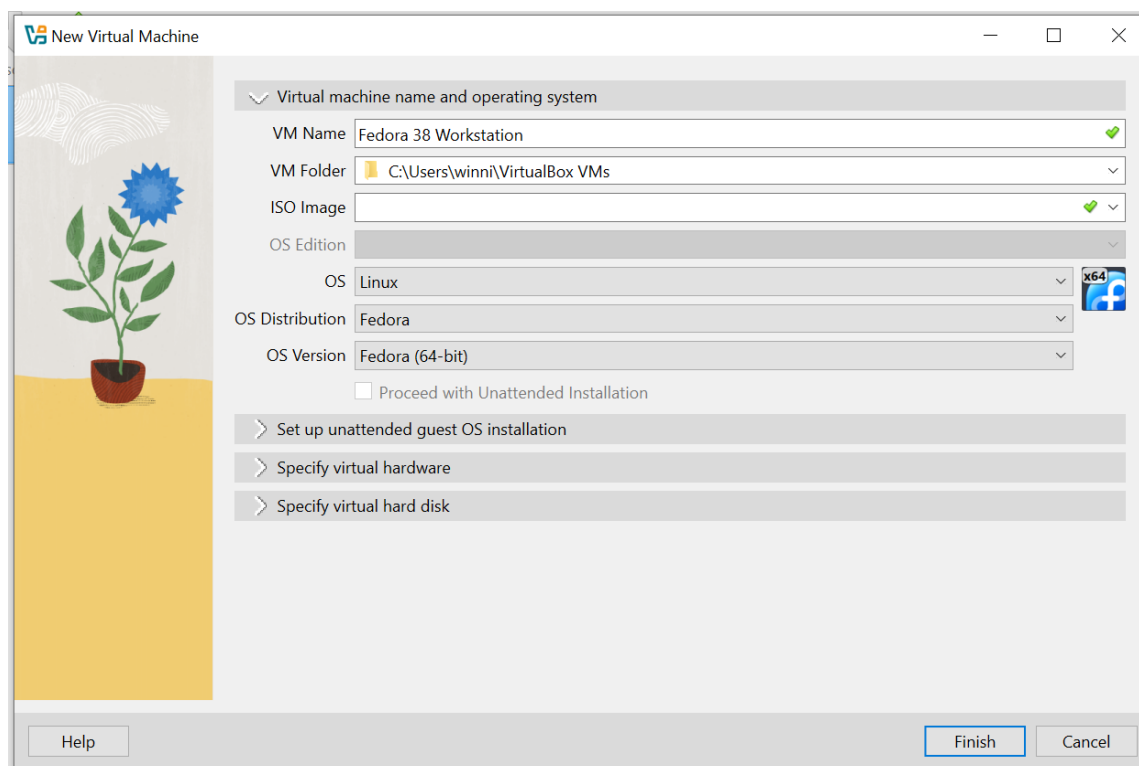
Task 2: Create and Configure a Virtual Machine

In this task, you'll create a new virtual machine in **Oracle VirtualBox** to install **Fedora 38 Workstation**.

VirtualBox allows you to run Fedora as a guest operating system without affecting your host computer.

1. Open Oracle VirtualBox and click New.
 - Launch *Oracle VirtualBox Manager* from your **Start Menu**, **Applications**, or desktop shortcut.
 - The main VirtualBox interface will appear.
2. Create a New Virtual Machine.
 - Click **Machine** > **New** (or the **New** button on the toolbar).
 - This will open the **New Virtual Machine wizard**.





3. Specify the following details in the following sections of the installation wizard:

Virtual machine name and operating system

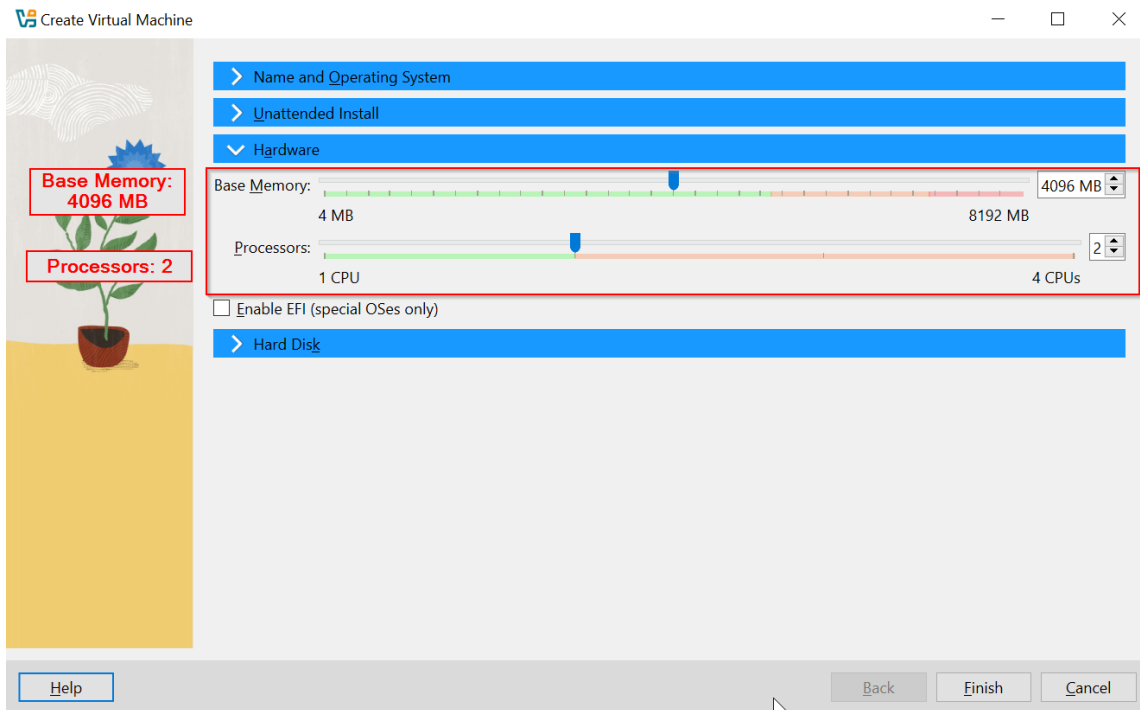
- **VM Name:** Fedora 38 Workstation (or any name you choose)
- **ISO Image:** Choose the path to the destination where your iso image is stored.
- **OS:** Linux
- **OS Distribution:** Fedora
- **OS Version:** Fedora (64-bit)

Hardware

- Base Memory: 4096 MB (Allocate 4 GB of RAM)
- Processors: 2 (Allocate 2 CPUs)

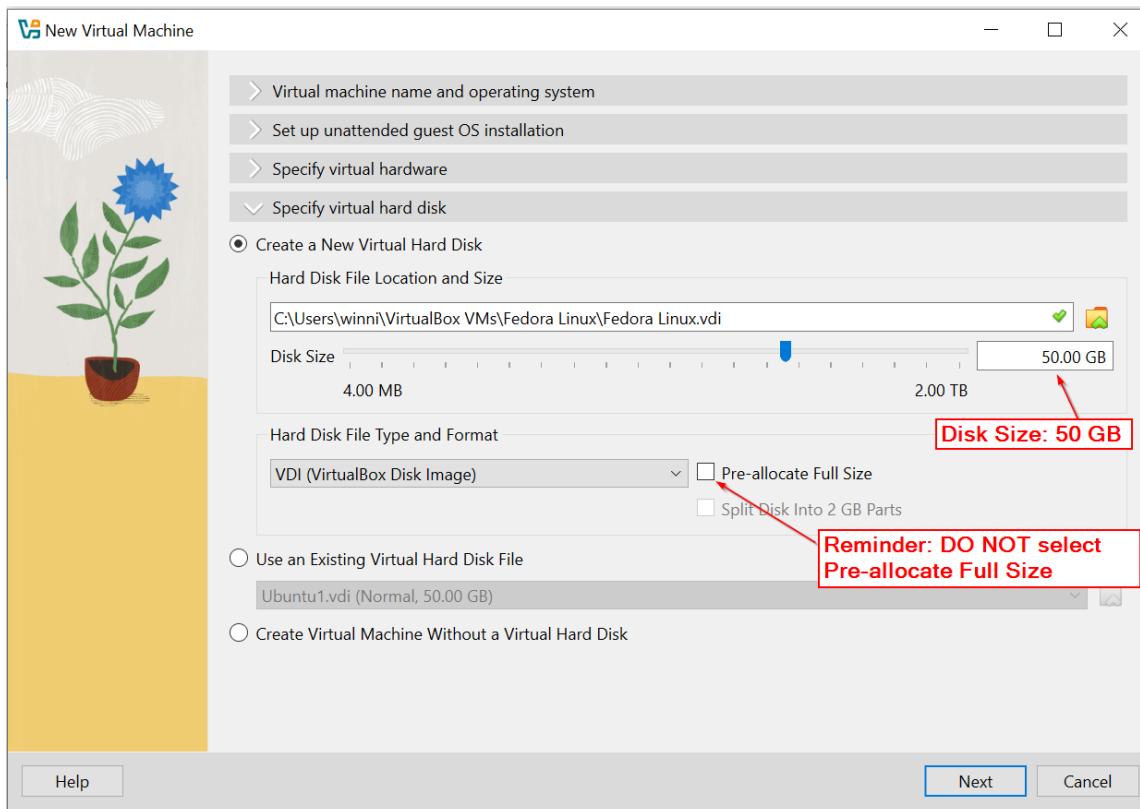
Warning:

Do not assign all available RAM or CPU cores to the virtual machine. Always leave enough resources for your host operating system to function properly.



Hard Disk

- Choose Create a Virtual Hard Disk Now
- Disk Size: **50 GB**



4. Finish

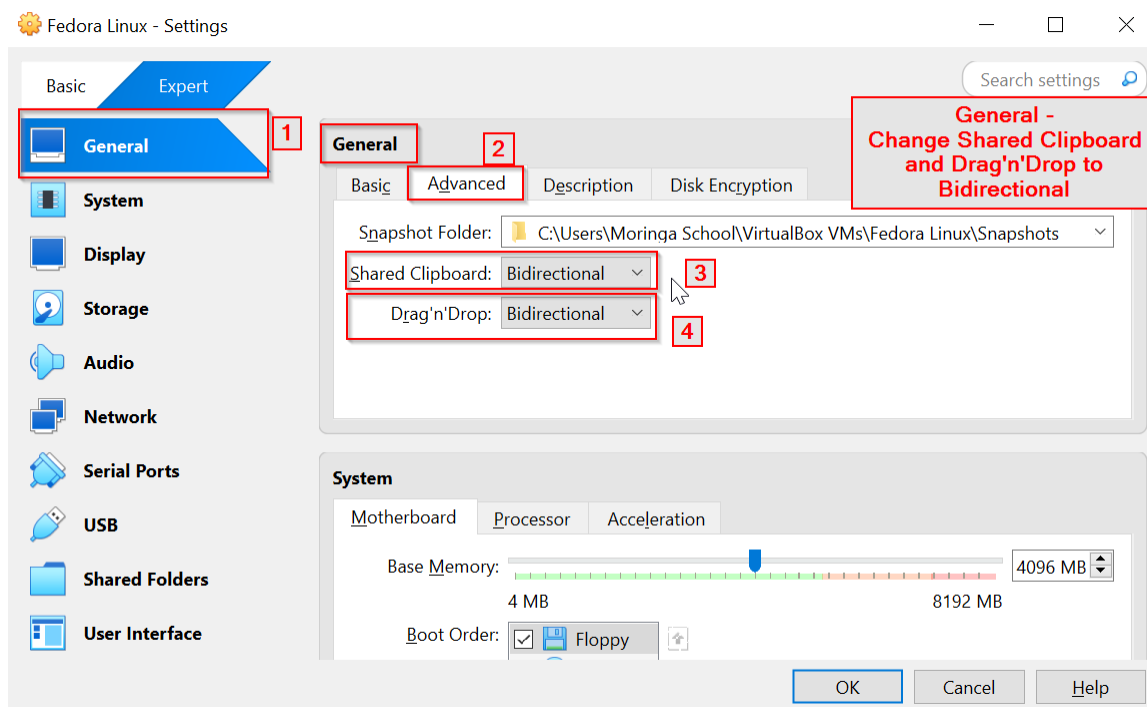
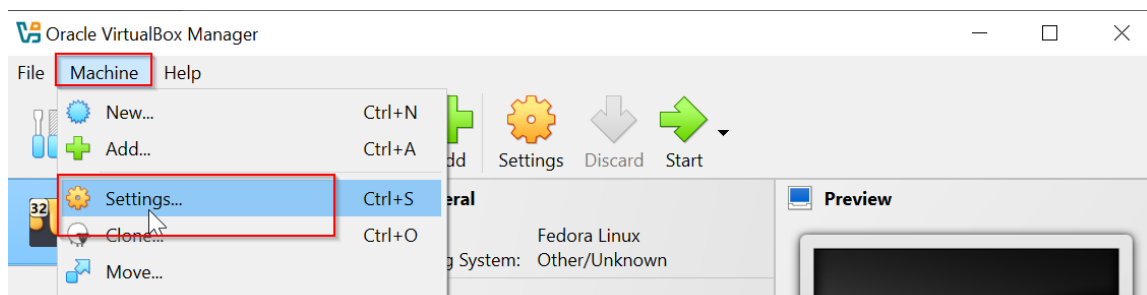
Click on **Finish** to complete the New Virtual Machine setup.

Optional Task: Improve VM Performance and Usability

Before launching Fedora, make two small configuration tweaks in VirtualBox to improve user experience.

1. Enable Bidirectional Clipboard

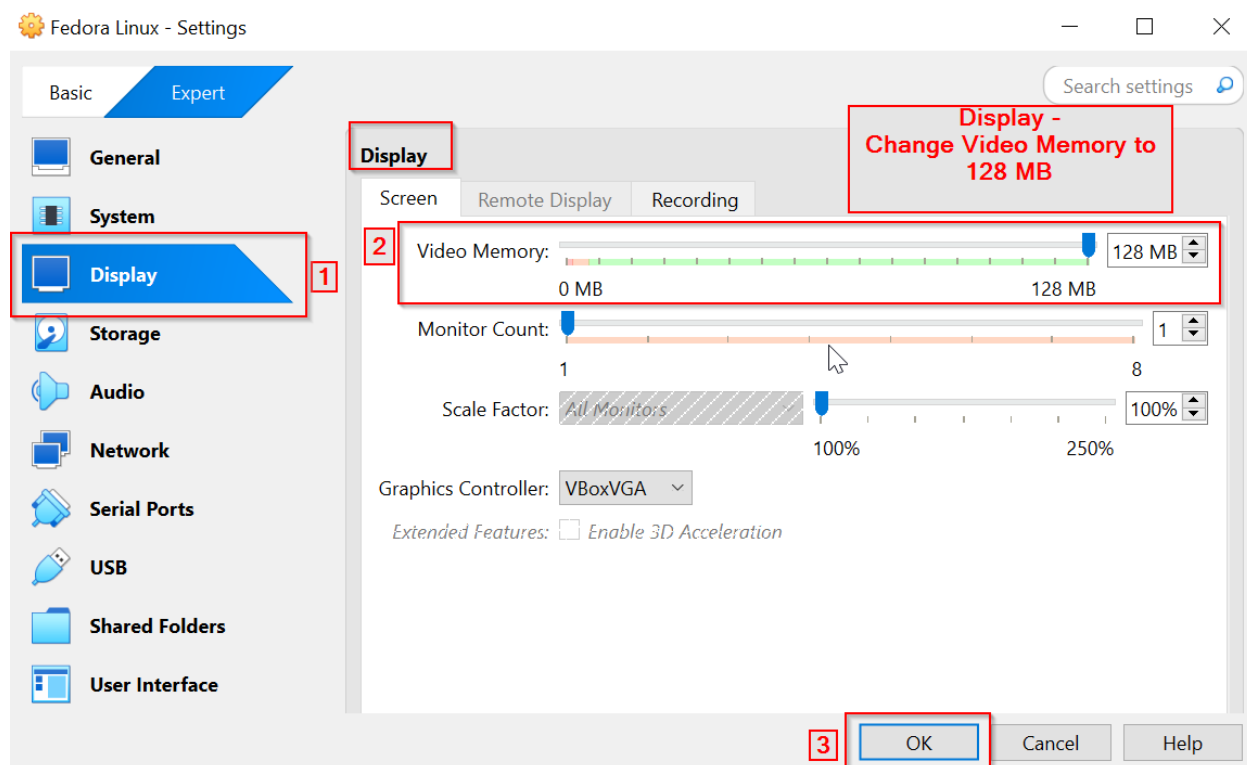
- In the VirtualBox Manager, select your Fedora VM and click **Settings** > **General** > **Advanced**.
 - Under **Shared Clipboard**, select **Bidirectional**.
 - Under **Drag and Drop**, select **Bidirectional**.
- This allows you to copy, paste, and move text or files between your host and Fedora VM.*



2. Increase Video Memory

- Go to **Settings > General > Screen**.
- Under **Video Memory**, drag the slider to **128 MB**.
- **Click OK** to save changes.

This provides smoother graphics and avoids display issues during installation or when resizing the VM window.

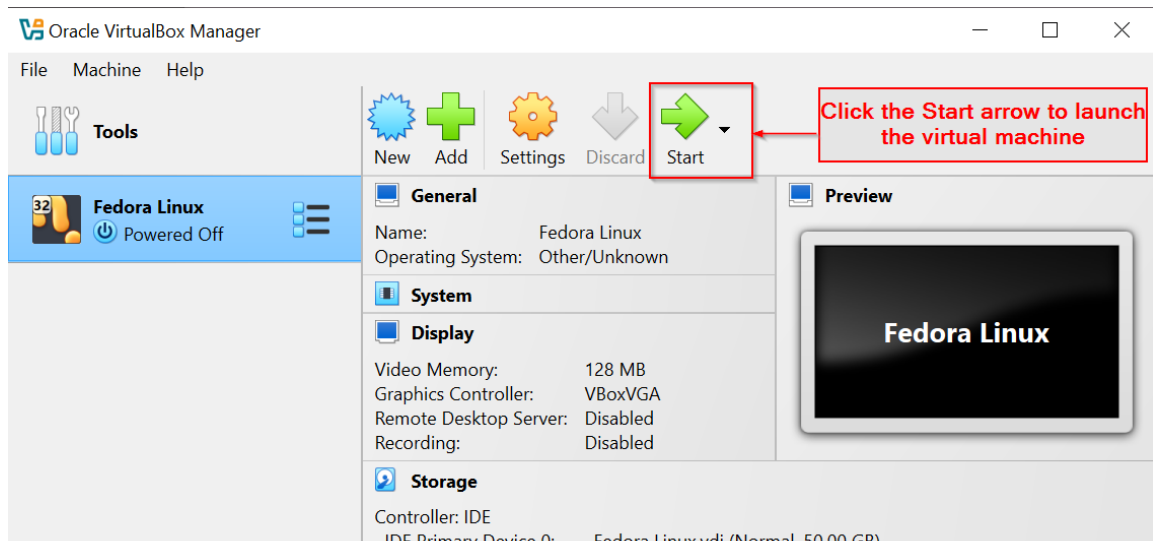


Task 3: Launch the Fedora Virtual Machine

In this task, you'll start the Fedora 38 virtual machine from the ISO image you configured in VirtualBox. This process will boot Fedora into a live environment and begin installation.

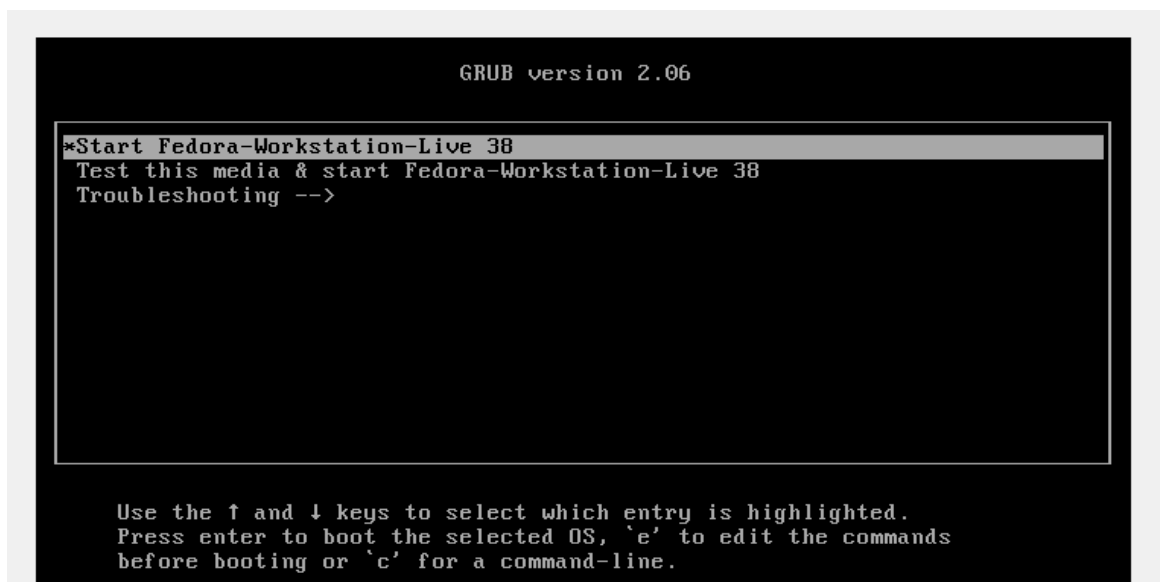
1. Start the Virtual Machine.

- In the VirtualBox Manager window, select the Fedora VM you've just created.
- Click the **Start** arrow on the toolbar to launch it.



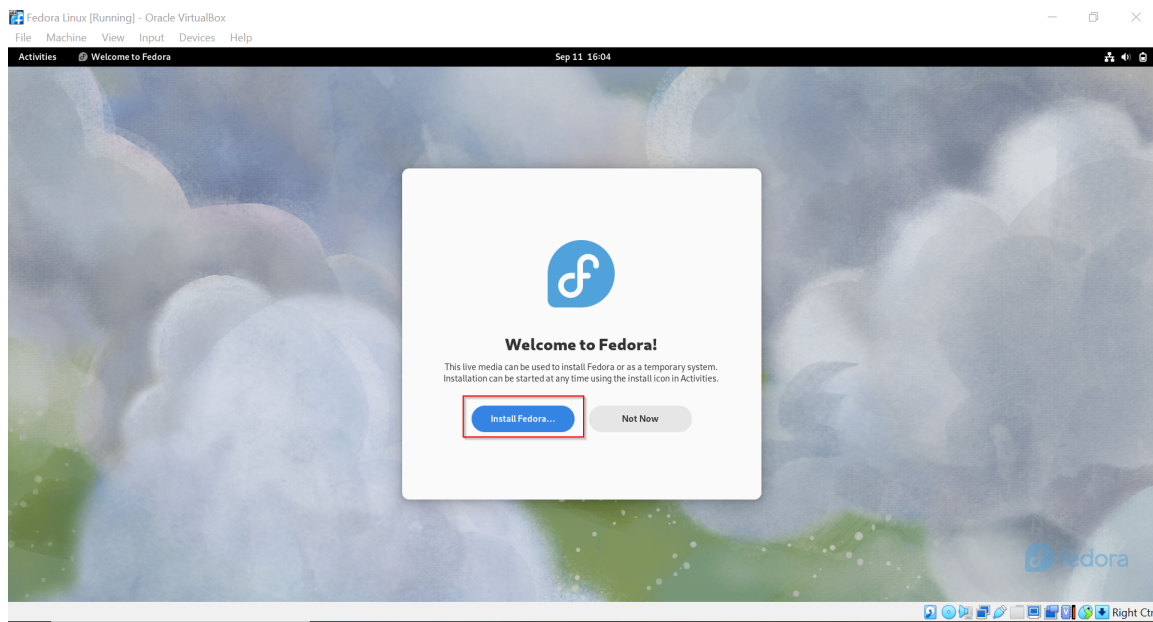
2. Fedora boot menu

- The VM will load the Fedora boot menu. Use the up arrow to select **Start Fedora-Workstation-Live 38**

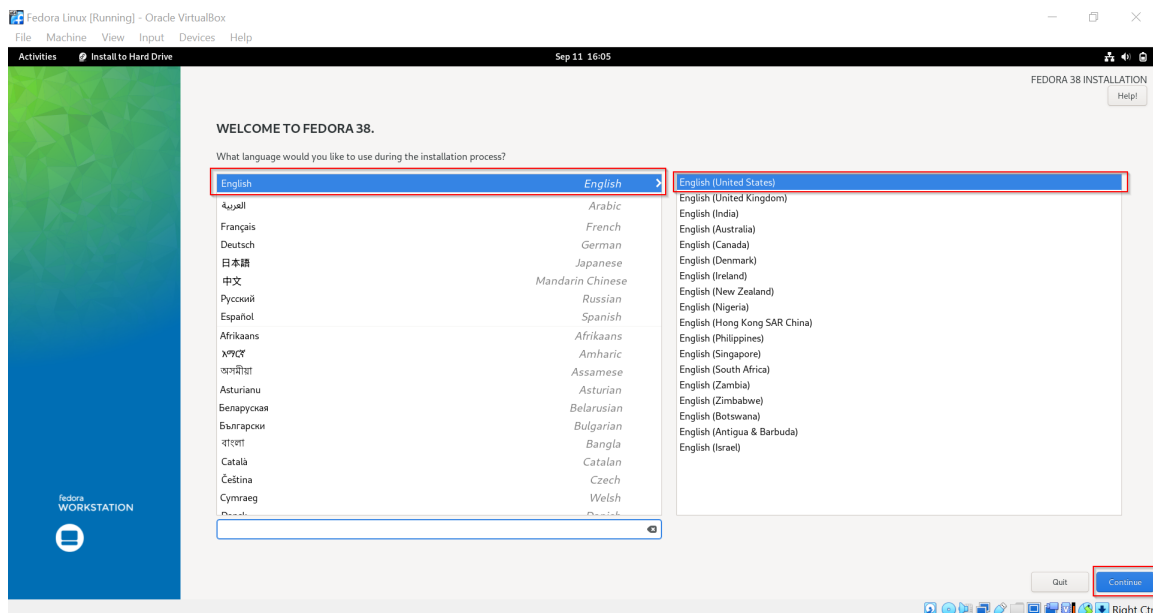


3. Install Fedora

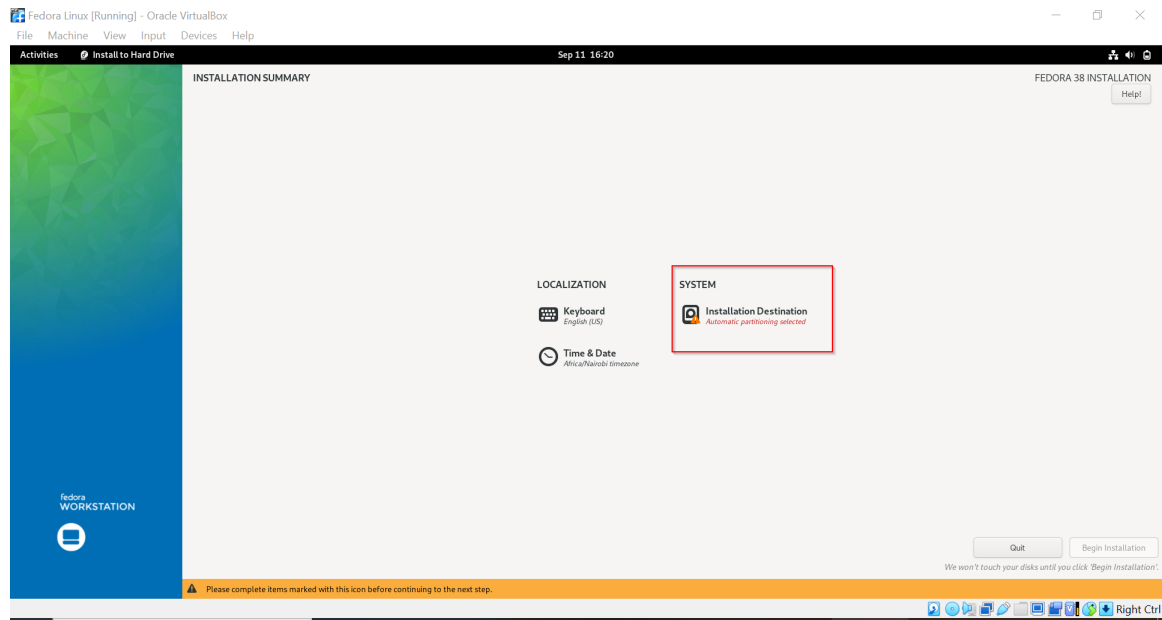
- When the GUI launches, select **Install Fedora** from the "Welcome to Fedora!" dialogue box.



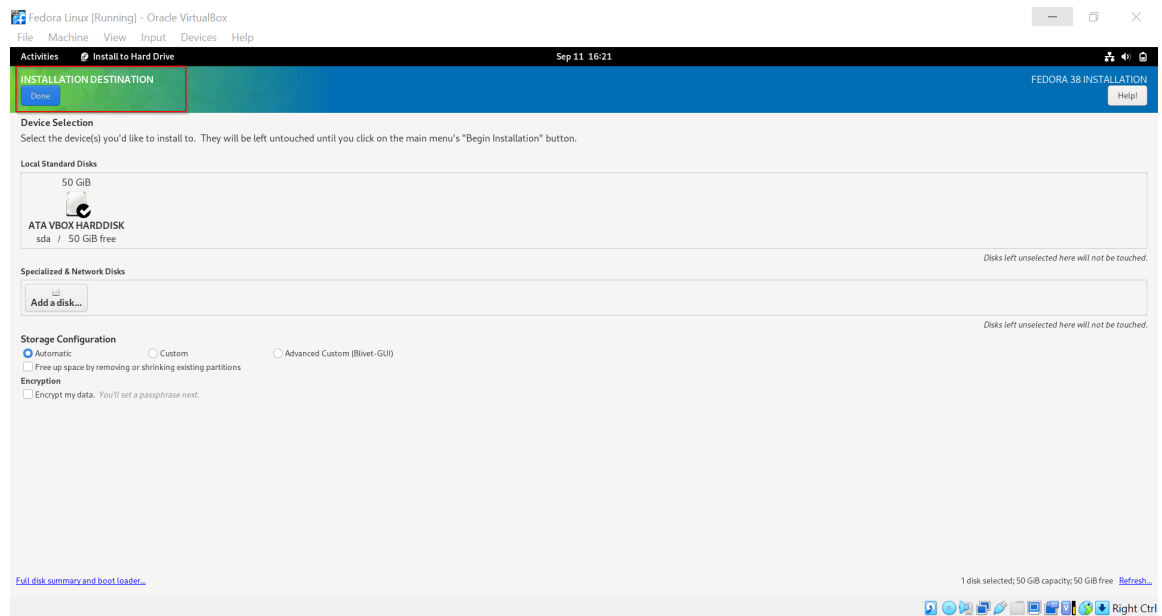
- In the **WELCOME TO FEDORA 38** page, choose English as your language, then click on **Continue**.



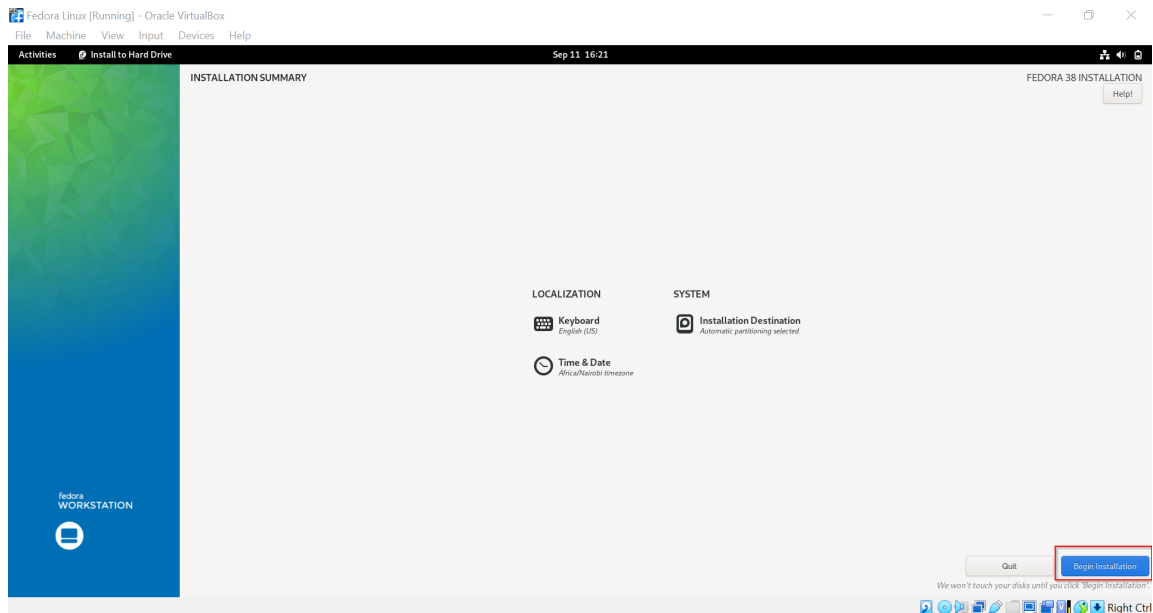
- On the **Installation Summary** page, under **SYSTEM**, click **Installation Destination**.



- Leave the default and click **DONE**.

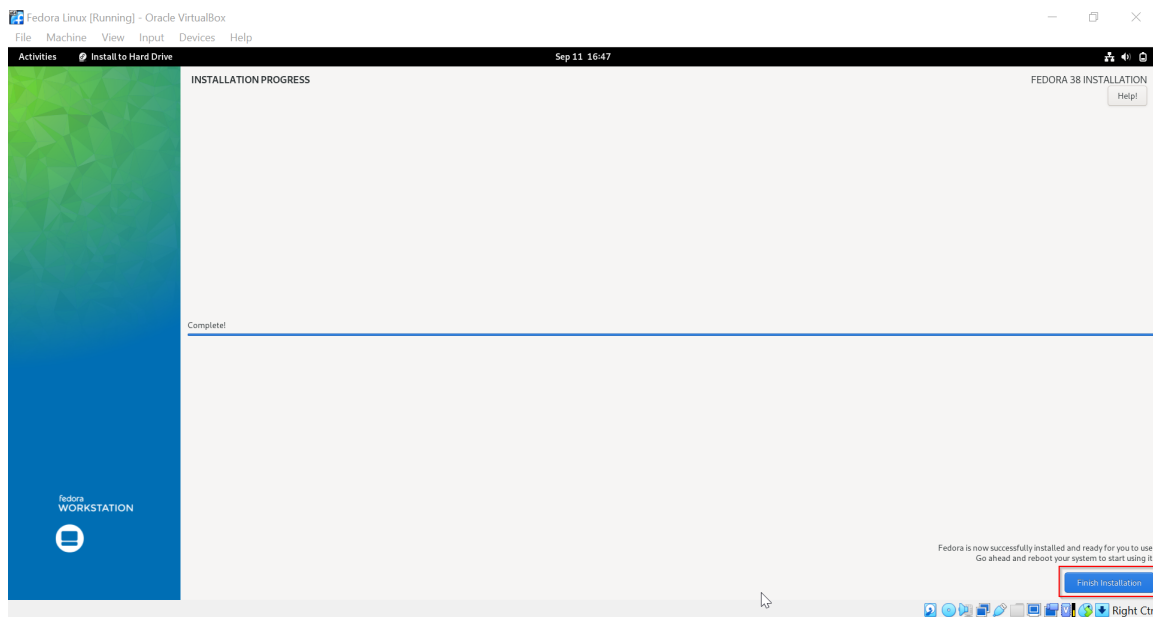


- Click **Begin Installation**.

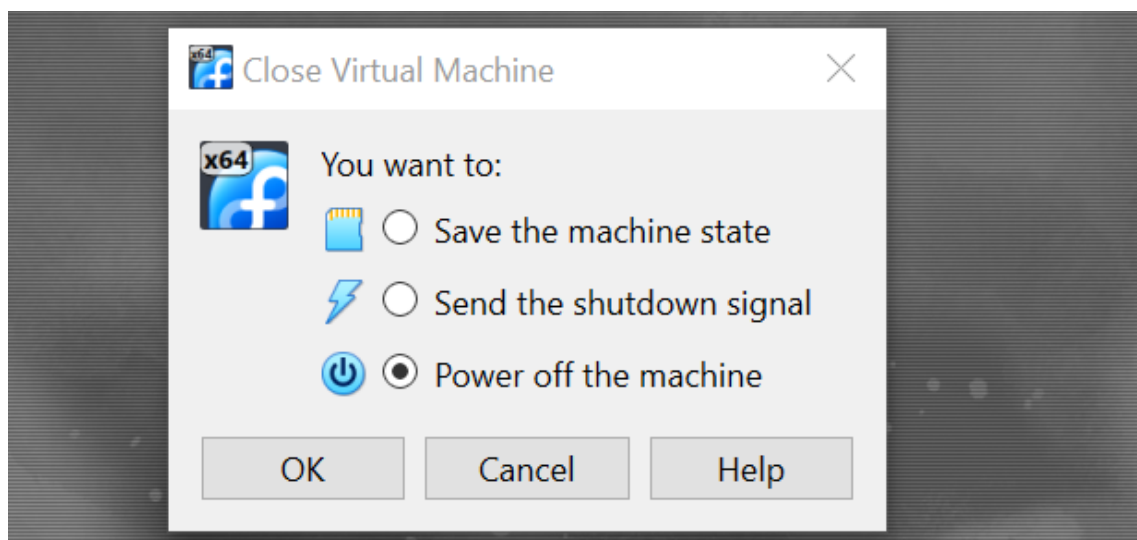


4. Finish Installation

- Once the installation is complete, click **Finish Installation**.



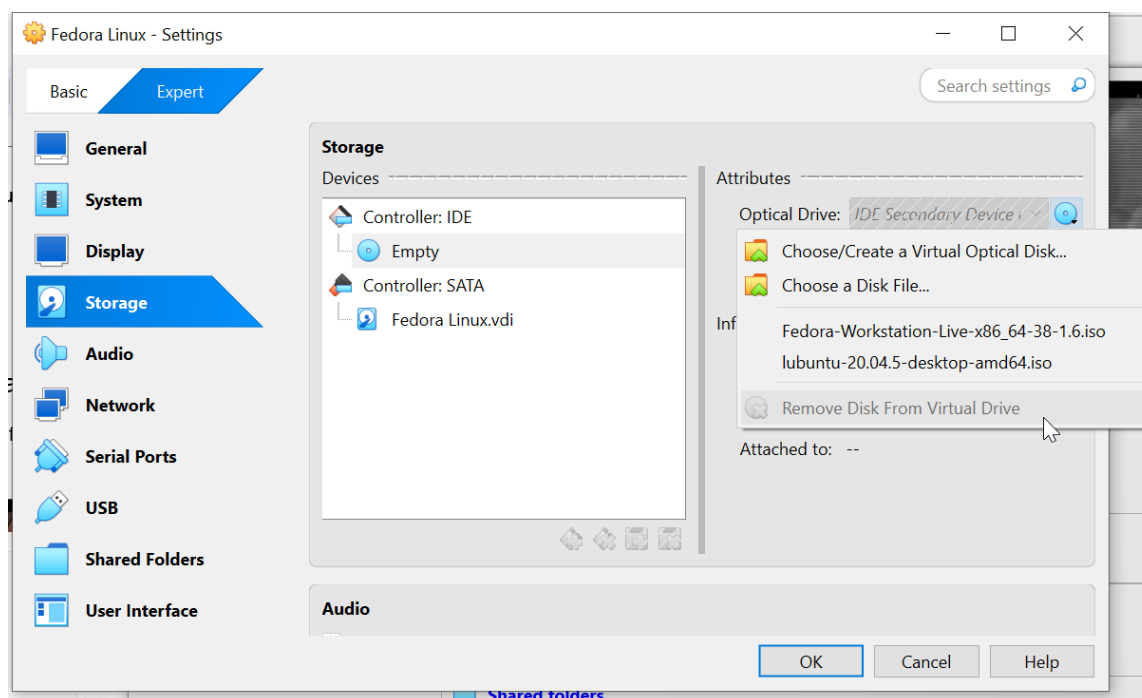
- Close the window and shut down the VM. (Click on File > Close. In the pop-up that appears, choose **Power off the machine**).



5. Detach the Fedora ISO

You need to detach the Fedora ISO to prevent the installer from reloading during the next boot. To do this:

- Go to **Settings > Storage**.
- Under Controller: IDE, click the Fedora ISO.
- Under *Attributes > Optical Drive* (click on the disk image) > Click **Remove Disk From Virtual Drive**.
- Click **OK** to save.



Task 4: Post-installation Configuration

In this task, you'll complete Fedora's initial setup, update the system, and prepare the environment for future labs and configurations.

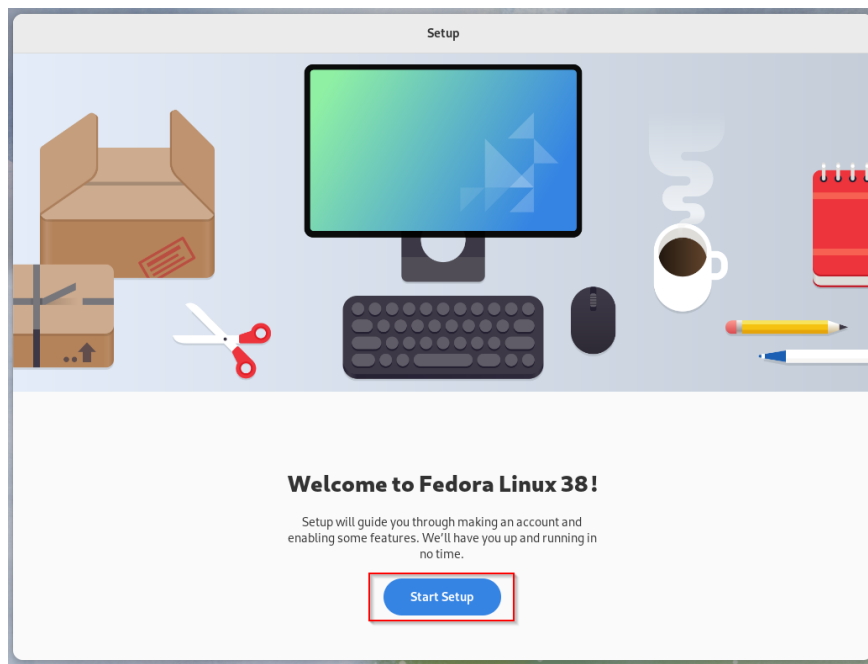
1. Restart the Fedora Virtual Machine.

- In VirtualBox, select your Fedora VM and click **Start**.
- Fedora will boot into the new installation.

2. Complete the Initial Setup Wizard.

- Welcome to Fedora Linux 38

Click **Start Setup**.

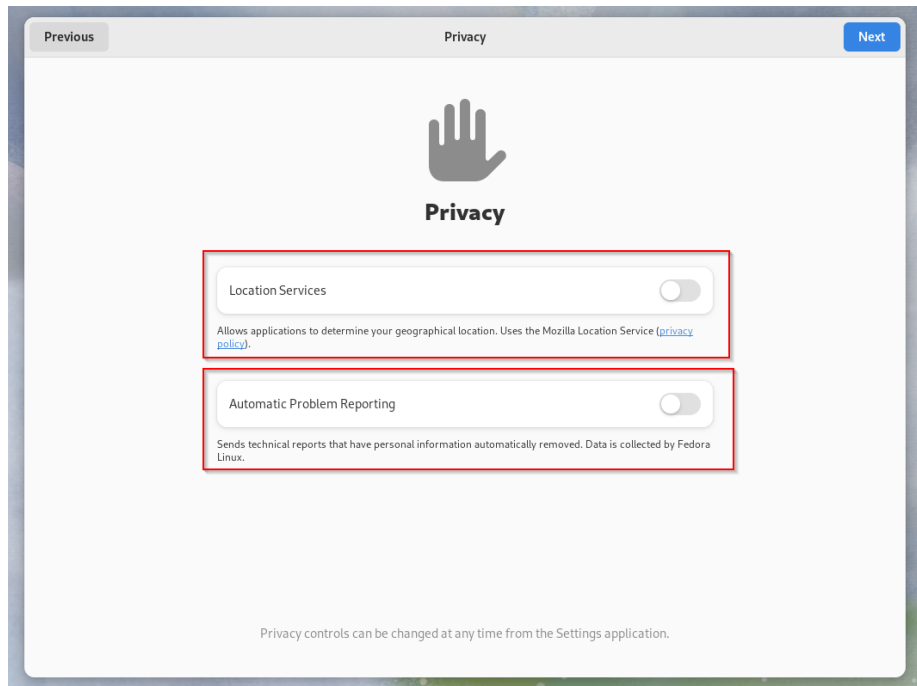


- Privacy

Turn Off:

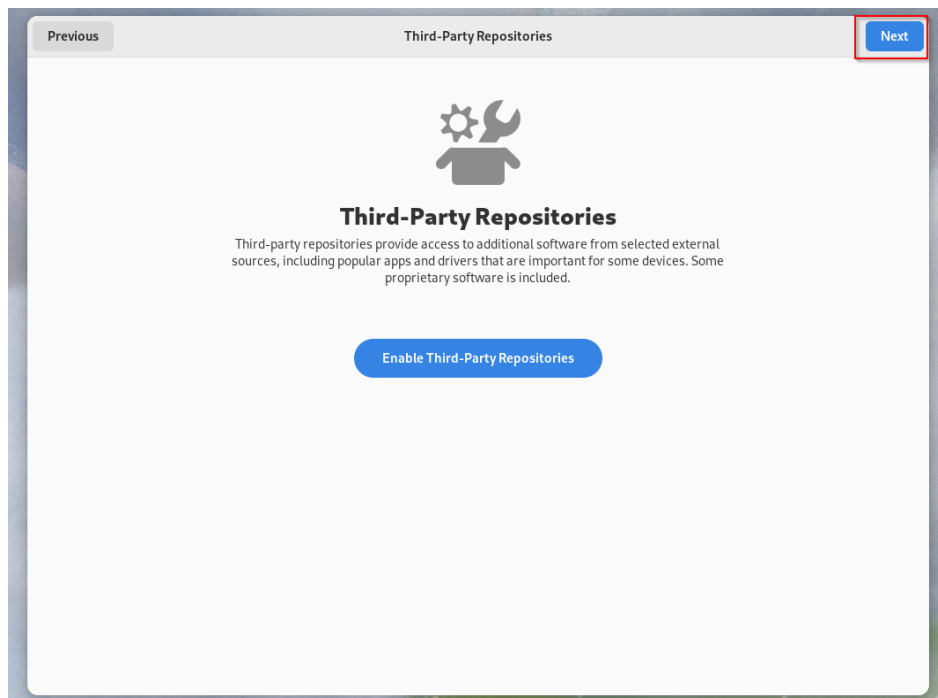
- Location Services
- Automatic Problem Reporting

Then click **Next**.



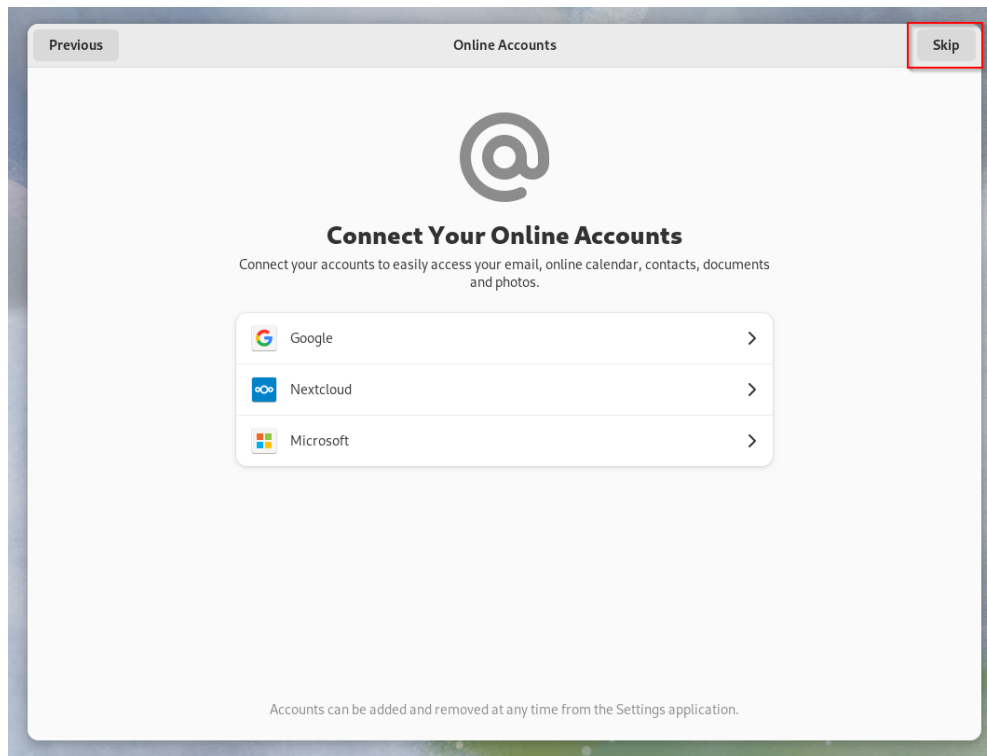
- Third-Party Repositories

Click **Next**. (Do this if you will not require third-party repositories)



- Online Accounts

Click **Skip**.



- About You

Enter:

- Full Name
- Username

Click **Next** to continue.

- Password

Create a strong password, then click **Next**.

Previous Password Next



Set a Password

Be careful not to lose your password.

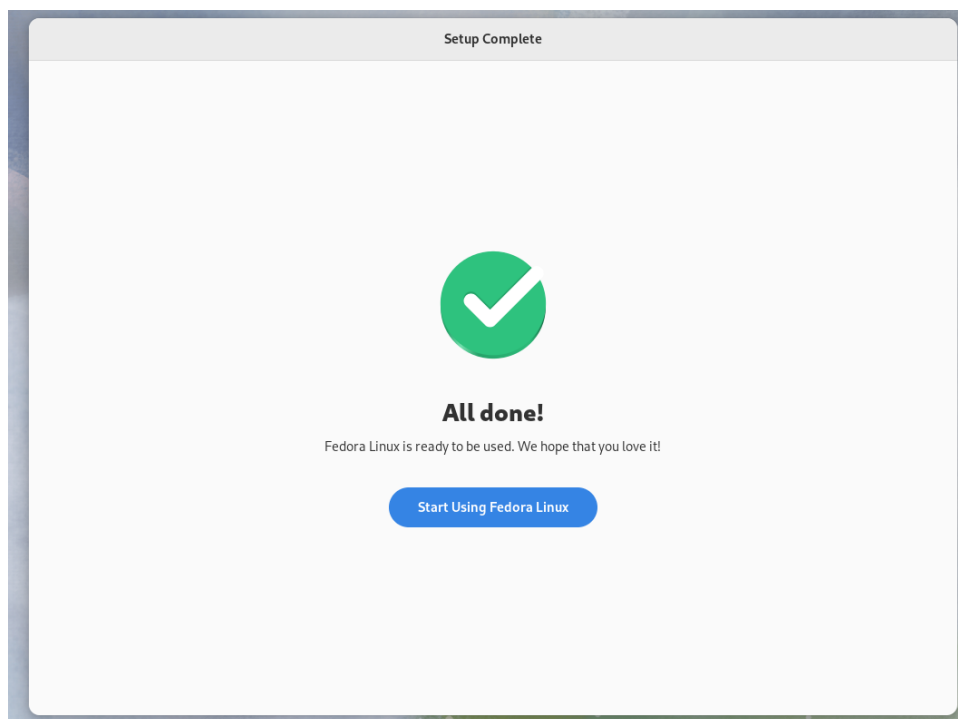
Password
••••••••

Confirm Password
••••••••

Adding more letters, numbers and punctuation will make the password stronger.

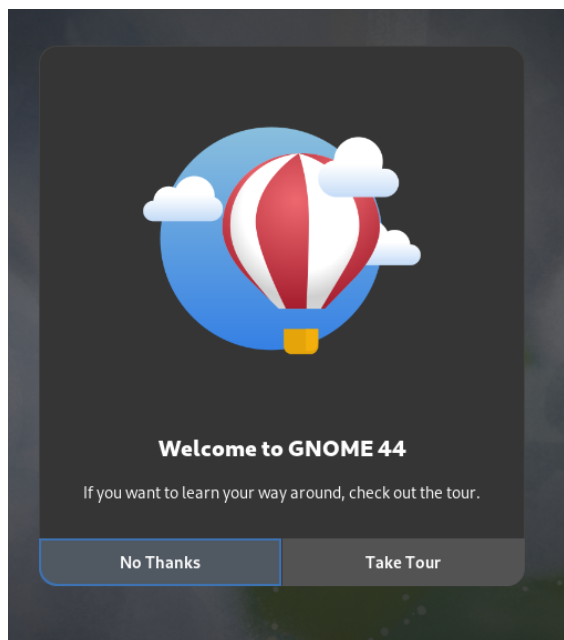
- Setup Complete

The initial setup is complete. Click on ***Start Using Fedora Linux.***



- **Optional:**

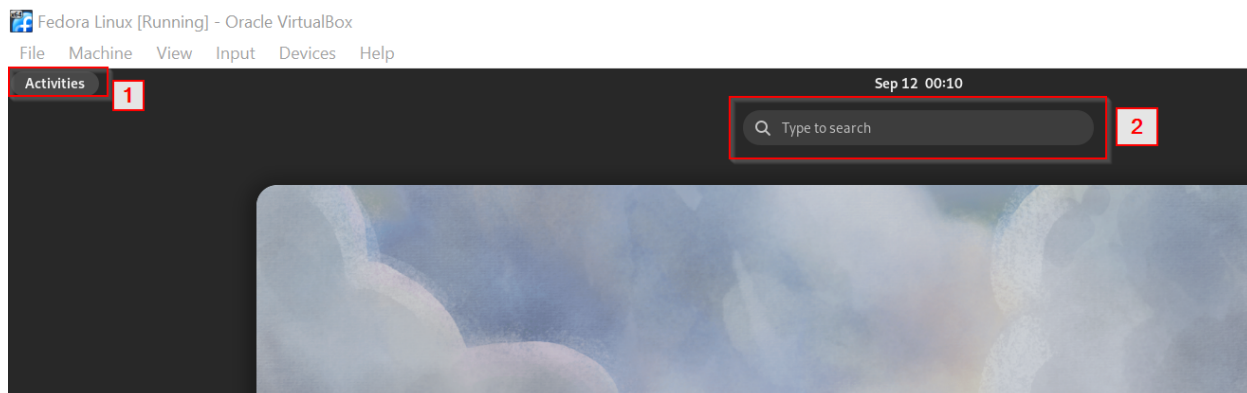
On the Welcome to GNOME44 screen, you may accept or decline the tour of the GUI.



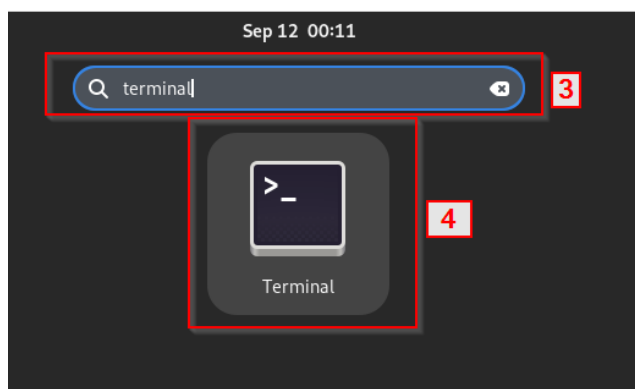
3. Launch a Terminal

To open the terminal:

- Select **Activities** in the top-left corner.
- In the **search box**, type **Terminal**.



- Click on **Terminal** to launch the application.



4. Update the System

- Before installing any additional software, update Fedora to ensure it is fully patched and secure.

Note:

Fedora is a Red Hat-based distribution, which means it doesn't use apt for package management (like Ubuntu or Debian).

Instead, Fedora uses dnf, which has a similar syntax to apt but uses slightly different commands.

- Run the following command to update all packages:

sudo dnf upgrade -y

Since this is the first update on a new system, the process may take several minutes to complete.

- Once the update completes, reboot the system to apply changes:

sudo reboot now

Task 5: Install VirtualBox Guest Additions

In this task, you'll install VirtualBox Guest Additions to improve Fedora's integration with your host system.

These tools enable features such as full-screen display, bidirectional clipboard sharing, and drag-and-drop support.

1. Check the Current Kernel Version

- Open a terminal and list the current kernel version by running the following in the terminal:

uname -r

You'll need this information to install the correct kernel headers.

2. Install the Required Dependencies

Install the packages needed to compile and build the Guest Additions module:

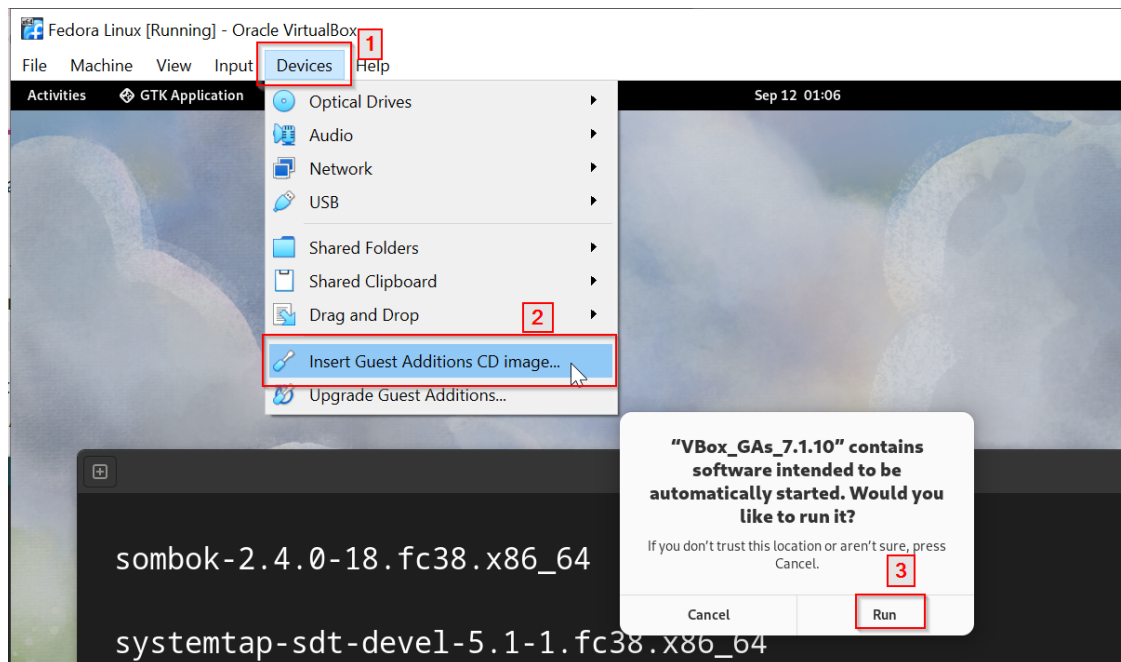
sudo dnf install gcc make perl kernel-devel-\$(uname -r) -y

3. Insert the Guest Additions CD Image

In the Fedora VM window, go to the **VirtualBox menu** and select:
Devices > Insert Guest Additions CD image...

VirtualBox will automatically mount the CD image inside the Fedora environment.

- If a prompt appears, click **Run** and enter your password.



- If no prompt appears, you can manually mount and run it using:

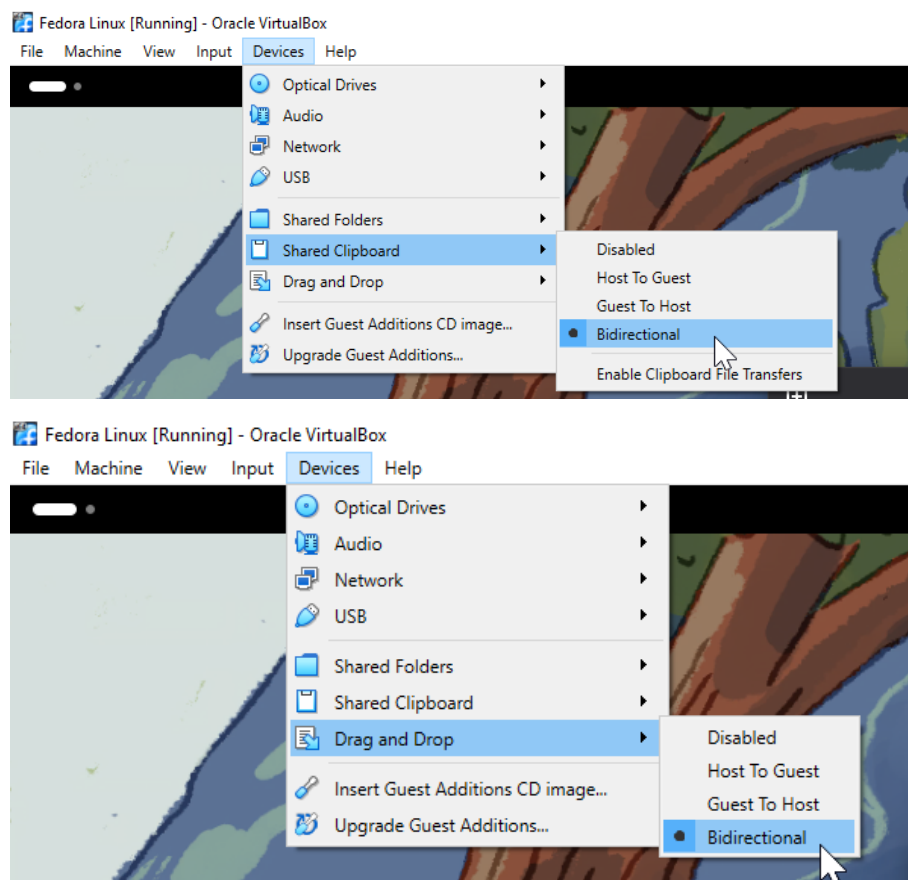
`sudo /run/media/$USER/VBox_GAs*/VBoxLinuxAdditions.run`

Wait for the installation to complete. This may take a few minutes.

4. Confirm Clipboard and Drag-and-Drop Settings

- With the virtual machine still running, go to the **Devices** menu, and confirm that **bidirectional** is set for both the **Shared Clipboard** and **Drag and Drop** options.

This ensures that you can copy text and move files between your host machine and the Fedora VM.



5. Reboot the System

Once installation finishes, reboot Fedora to apply the changes: **sudo reboot now**

6. Verify Guest Additions Functionality

After logging back in:

- Try copying text from your host system and pasting it inside Fedora.
- Switch to Full Screen Mode (Host Key + F, usually Right Ctrl + F) — Fedora should resize automatically.
- Optionally, drag and drop a small file between host and guest to confirm the feature works.



Tip:
If Fedora doesn't resize automatically or clipboard sharing doesn't work, reinstall the Guest Additions or confirm your Video Memory is set to 128 MB under Settings > Display > Screen.



Warning:

Avoid shutting down the VM during installation since this can corrupt the Guest Additions and require reinstallation.

Fedora is now fully integrated with your host environment. You can use full-screen mode, share your clipboard, and drag-and-drop files easily, thus improving your workflow for labs, documentation, and everyday tasks.

Verification

Confirm that Fedora and VirtualBox integration are working properly.

1. Check Fedora and Kernel Version

cat /etc/os-release

uname -r

You should see Fedora 38 and a valid kernel version.

2. Test Internet Connectivity

ping -c 4 [google.com](https://www.google.com)

If you receive replies, the network connection is working.

3. Verify Guest Additions

- Switch to Full Screen Mode (Host + F). The display should resize automatically.
- Test copy and paste between your host and Fedora VM.

If these work, Guest Additions are correctly installed.

 **Tip:**

If full-screen mode or copy/paste doesn't work, reinstall Guest Additions and confirm your Video Memory is set to 128 MB under Settings > Display > Screen.

Fedora 38 is now fully installed, configured, and ready for use in VirtualBox.