

M2 Lab: Installing Linux Distribution

CITA 171: OPERATING SYSTEM USE & ADMIN

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2 OVERALL PROCEDURE

There are five steps to creating a fully functional virtualized Linux distribution computer:

1. Download a guest operating system ISO file from the Internet
2. Create a new virtual machine.
3. Boot the virtual machine from the ISO file and install the guest operating system.
4. Remove the ISO file and reboot the virtual machine.
5. Install VirtualBox Guest Additions to the guest operating system.

3 DOWNLOADING AND INSTALLING VIRTUALBOX APPLICATION

In this lab, Mint Linux distribution is used. Visit the [Linux Mint website](#) and download the Cinnamon version of the ISO file.

4 CREATING A NEW VIRTUAL MACHINE

Follow these steps to create a new virtual machine. A virtual machine is 100% software computer without an operating system.

1. Launch VirtualBox Manager
2. Click the New button. (See Figure 1).

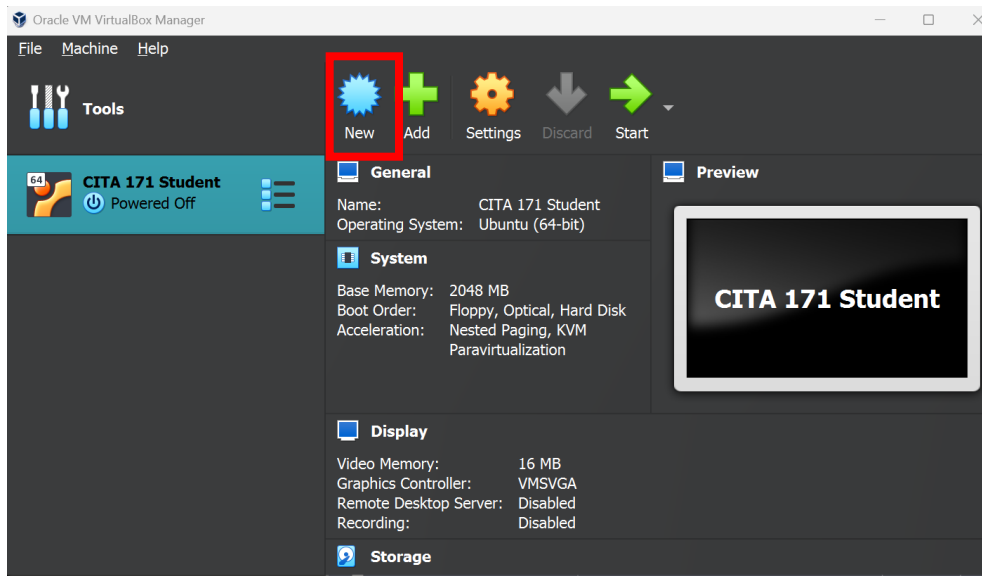


Figure 1 VirtualBox Manager

3. Enter the name of the virtual machine. (This name is not a computer's hostname.) The **Machine Folder** shows the location of the parent folder in which the virtual machine's vbox and vdi files will be created. (Refer to Unit 01 Lab 01.) Choose **Linux** as the **Type**. Choose **Ubuntu (64-bit)** as the **Version**. (If the exact version name is not available, choose the closest one. Check the distribution's website for the information.) See Figure 2 . Click **Next**.

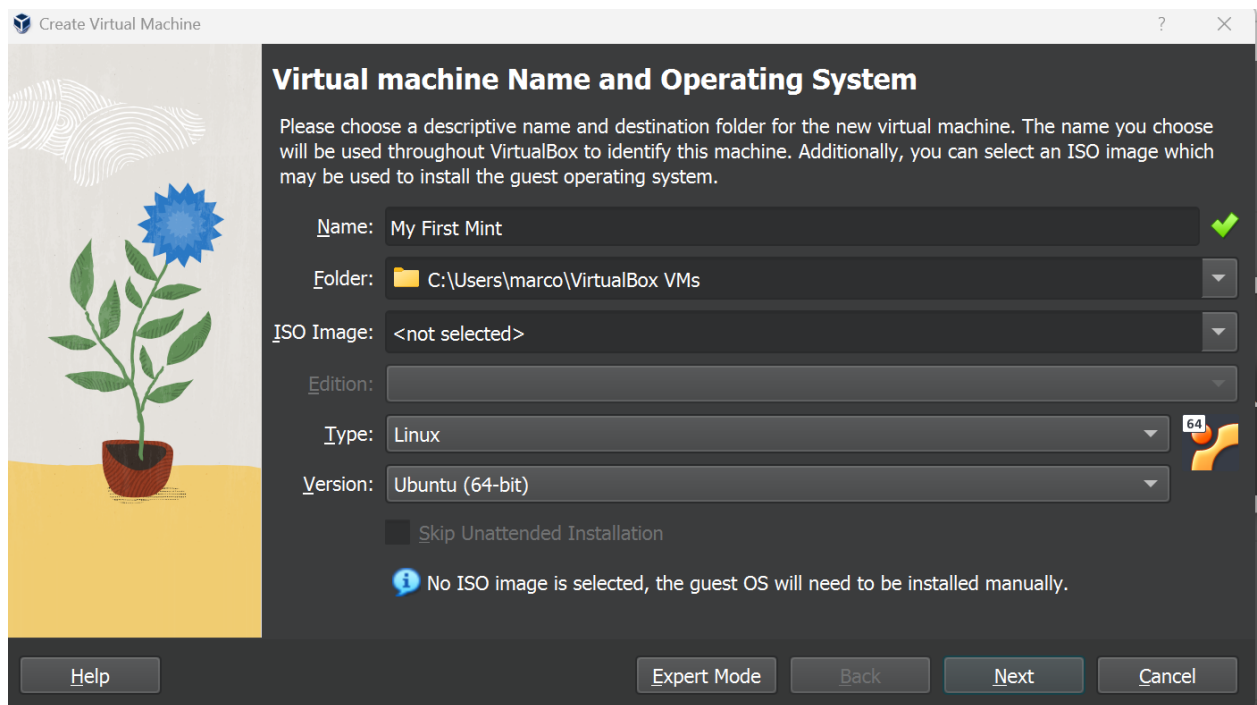


Figure 2 Choosing the VM Name and the OS Type

4. Choose the amount of RAM to give to the virtual machine. Do not give too much. See Figure 3. Change the size to 2048 MB. Click **Next**.

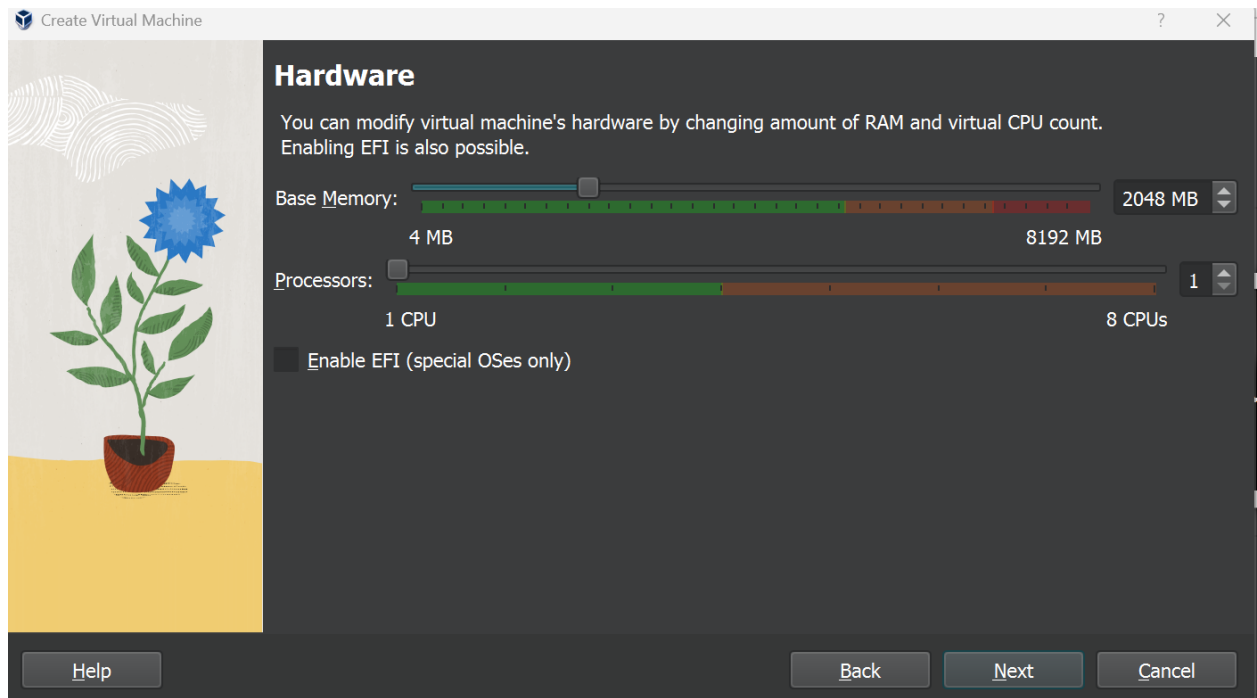


Figure 3 Selecting the Amount of Virtual Machine RAM

5. In this screen, keep the default setting (**Create a virtual hard disk now**) Change the disk size to 30 GB. See Figure 4. Click **Next**.

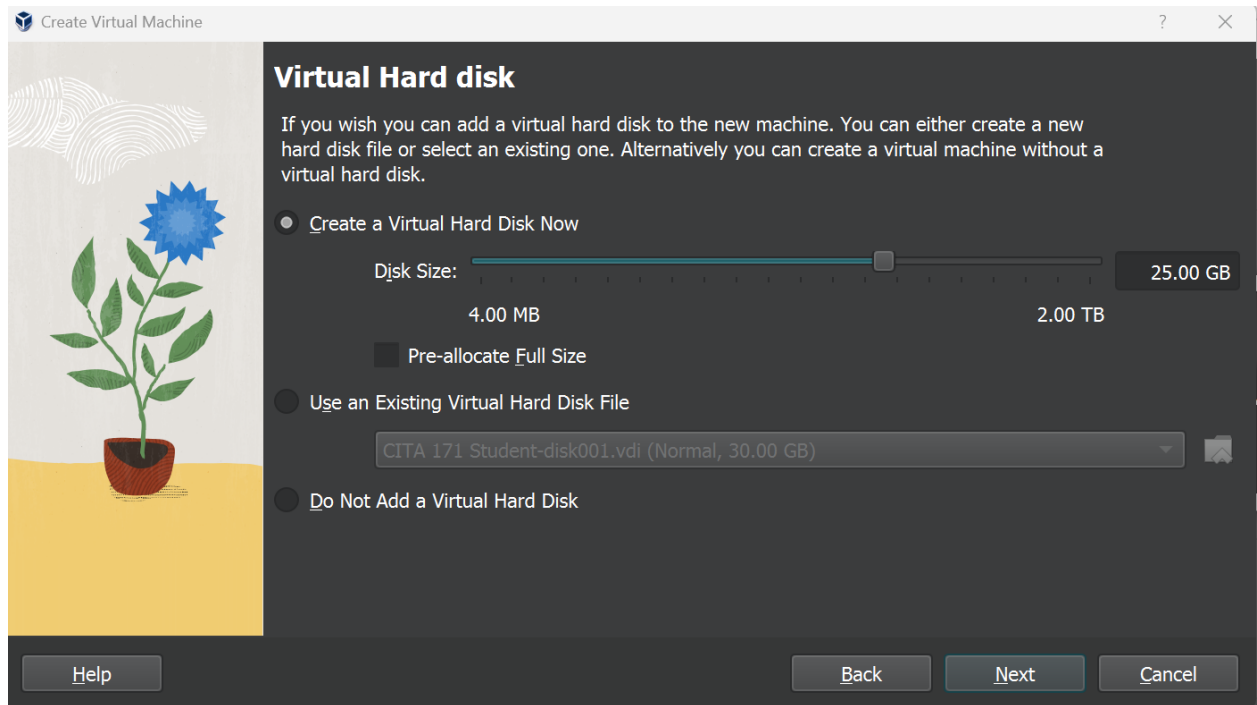


Figure 4 Choosing to Create a New Virtual Disk and Size

6. The virtual machine is created. See Figure 5.

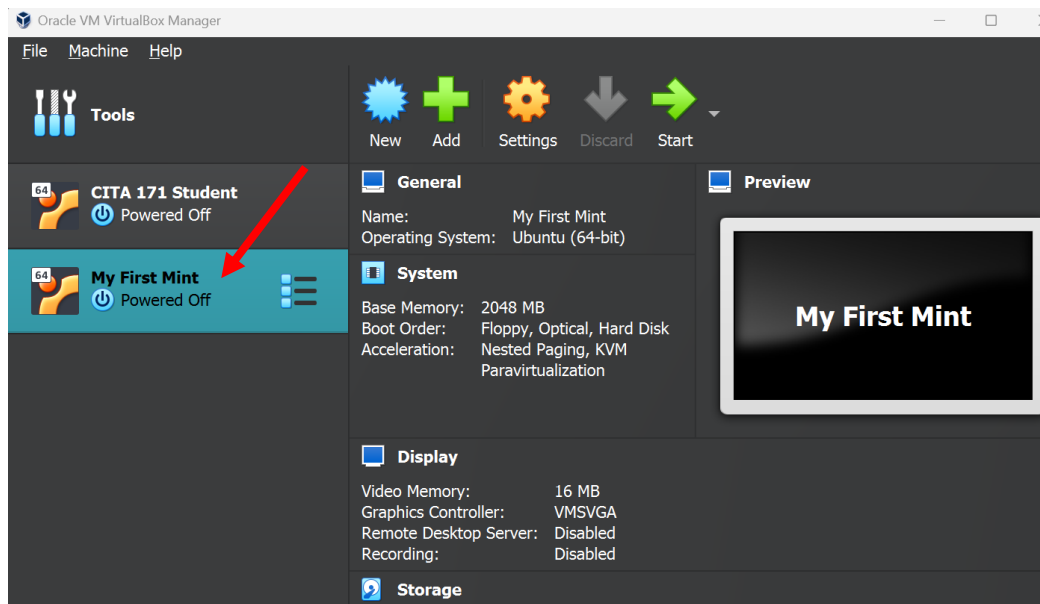


Figure 5 Created New Virtual Machine

5 INSTALLING THE GUEST OPERATING SYSTEM

At this point, the virtual machine does not boot because there is no guest operating system. The next step is to boot the virtual machine from the downloaded ISO file so that the guest operating system can be installed.

1. Make sure the new virtual machine is selected. Click the **Settings** button. See Figure 6.

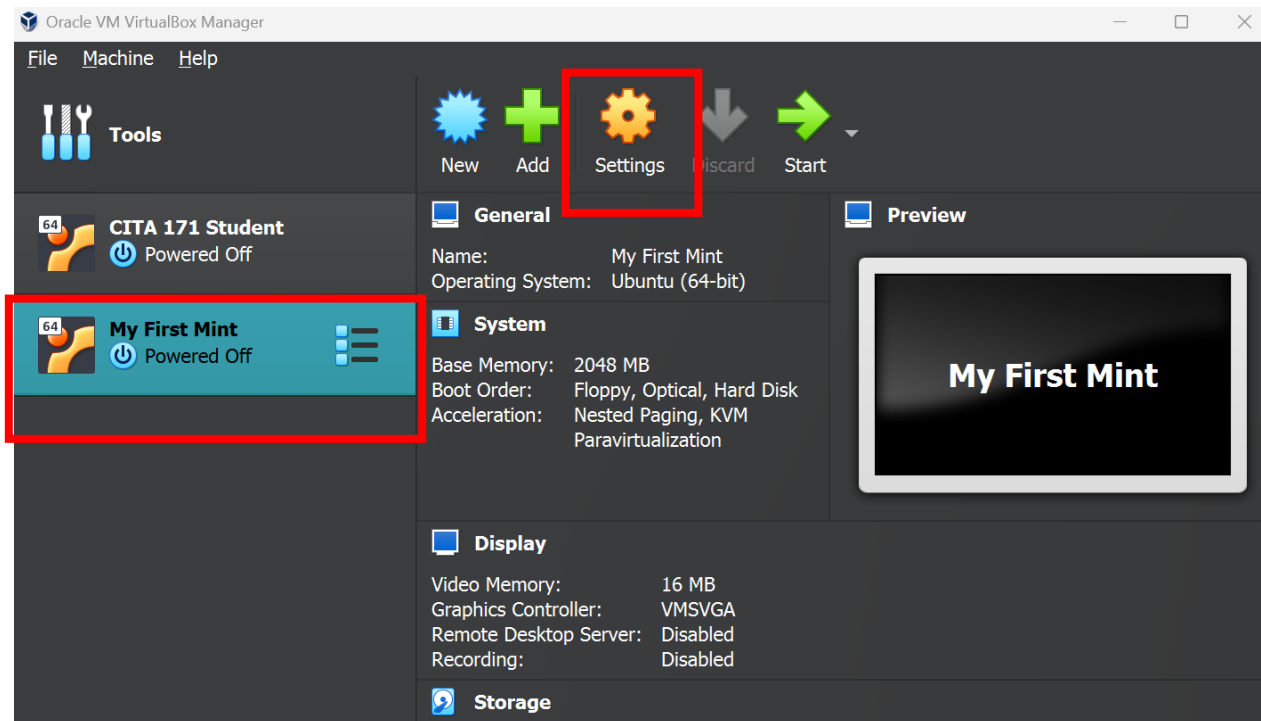


Figure 6 Choosing the Settings Button

2. Select **Storage**. Click **Empty**. Finally click the icon next to **Optical Drive**. See Figure 7. Select **Choose a disk file**. Navigate to the ISO file and select. Click **Open**. See Figure 8.

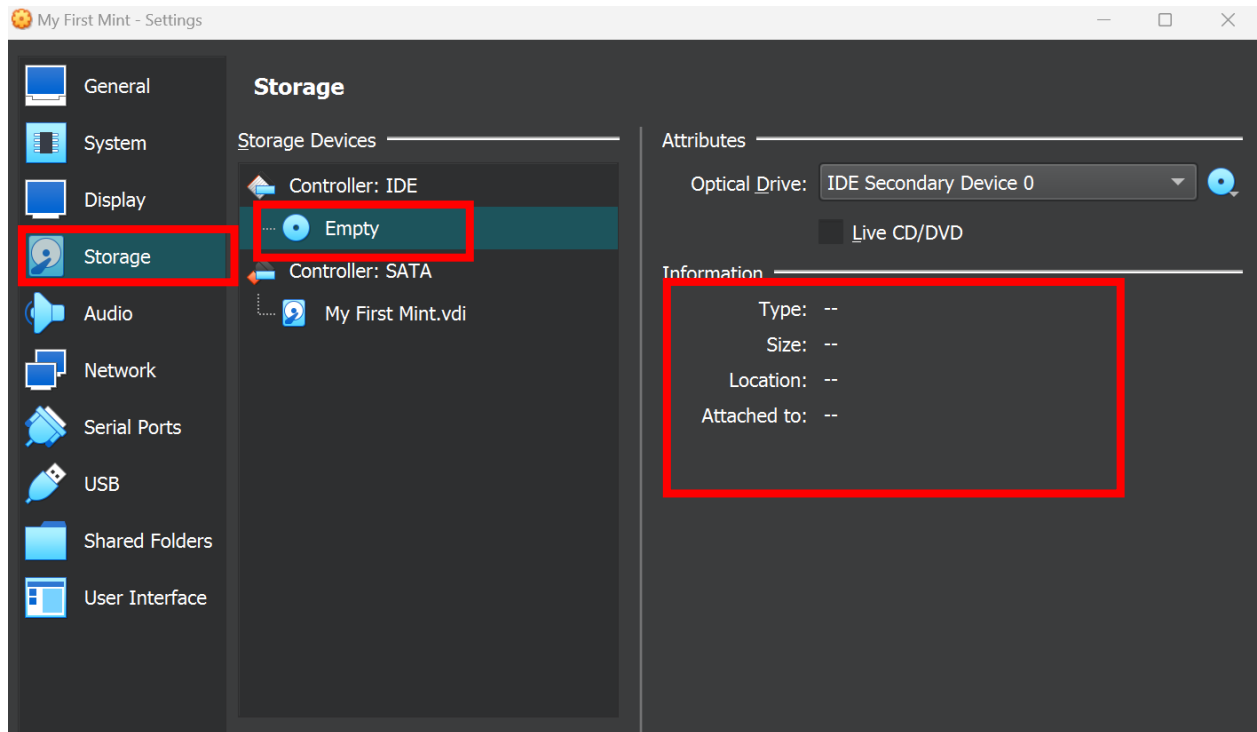


Figure 7 Preparing to Attach the ISO File

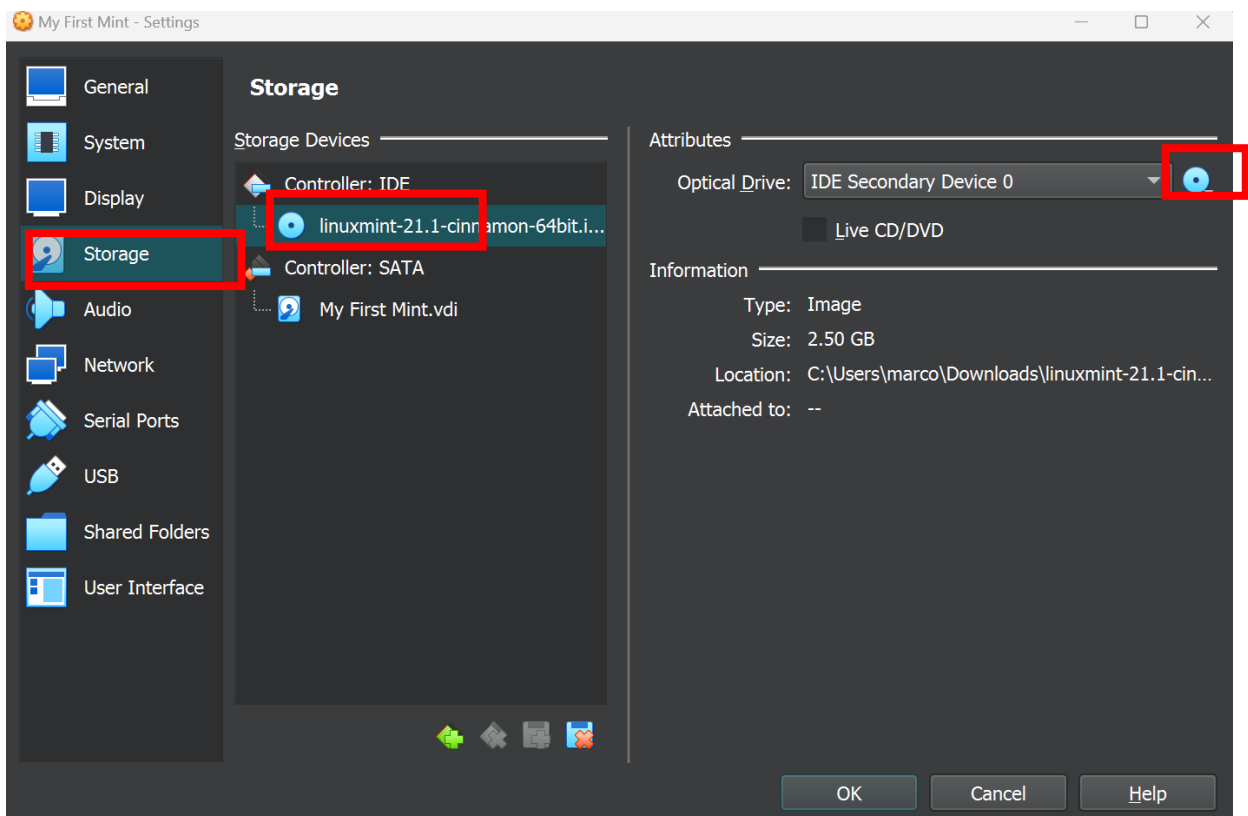


Figure 8 Attached ISO File

3. Click **System**. Uncheck Floppy. See Figure 9. Click **Ok**.

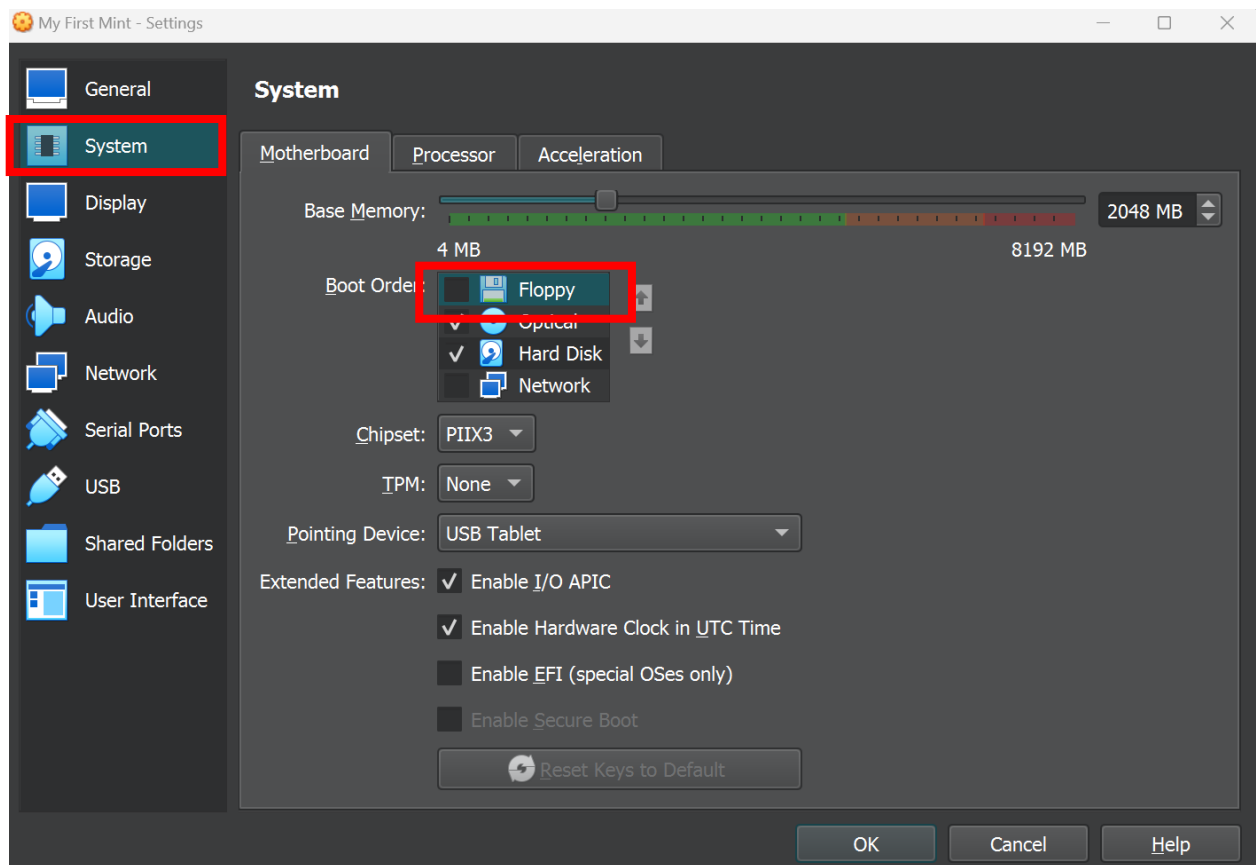


Figure 9 Removing Floppy from the Boot Order

4. Make sure the virtual machine is still selected. Click the **Start** button to boot the virtual machine. See Figure 10. The virtual machine automatically boots into the **LiveCD mode**. In the LiveCD mode, the operating system programs are copied and executed only in the RAM. No information is written to the virtual disk. In this mode, the user can test drive the distribution before installing it. If the virtual machine is shut down while in the LiveCD mode, the virtual machine will not boot next time because the operating system is not on the virtual disk.

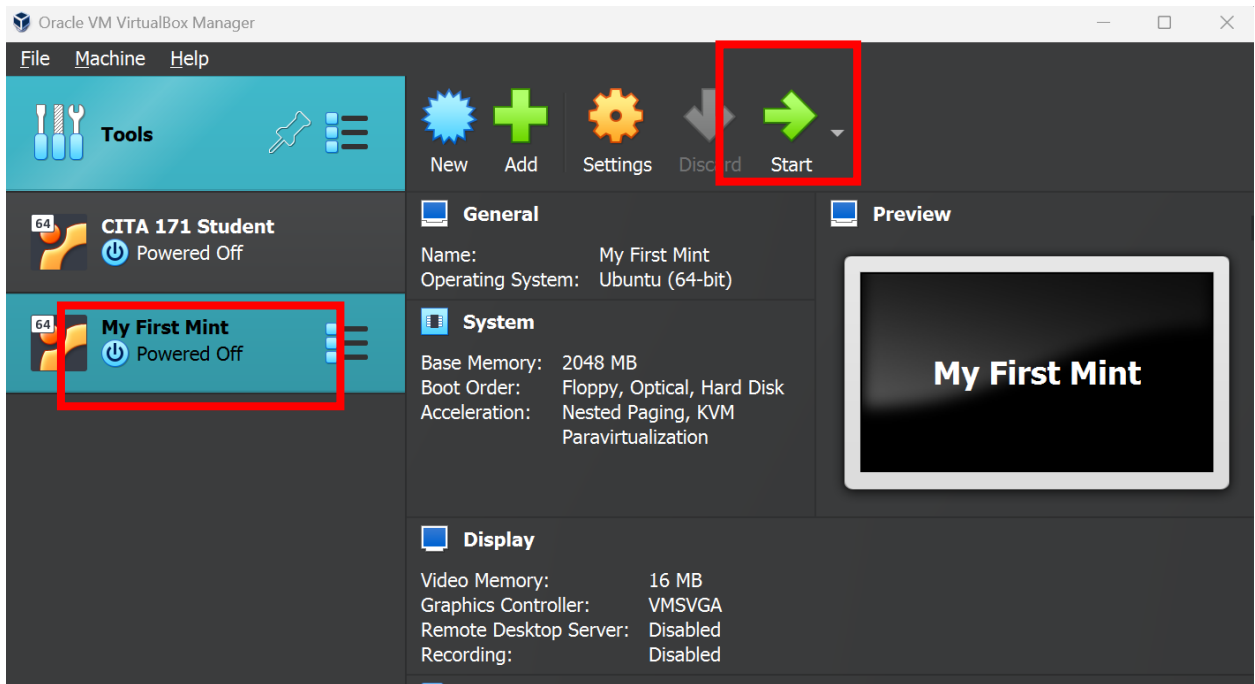


Figure 10 Starting the Virtual Machine

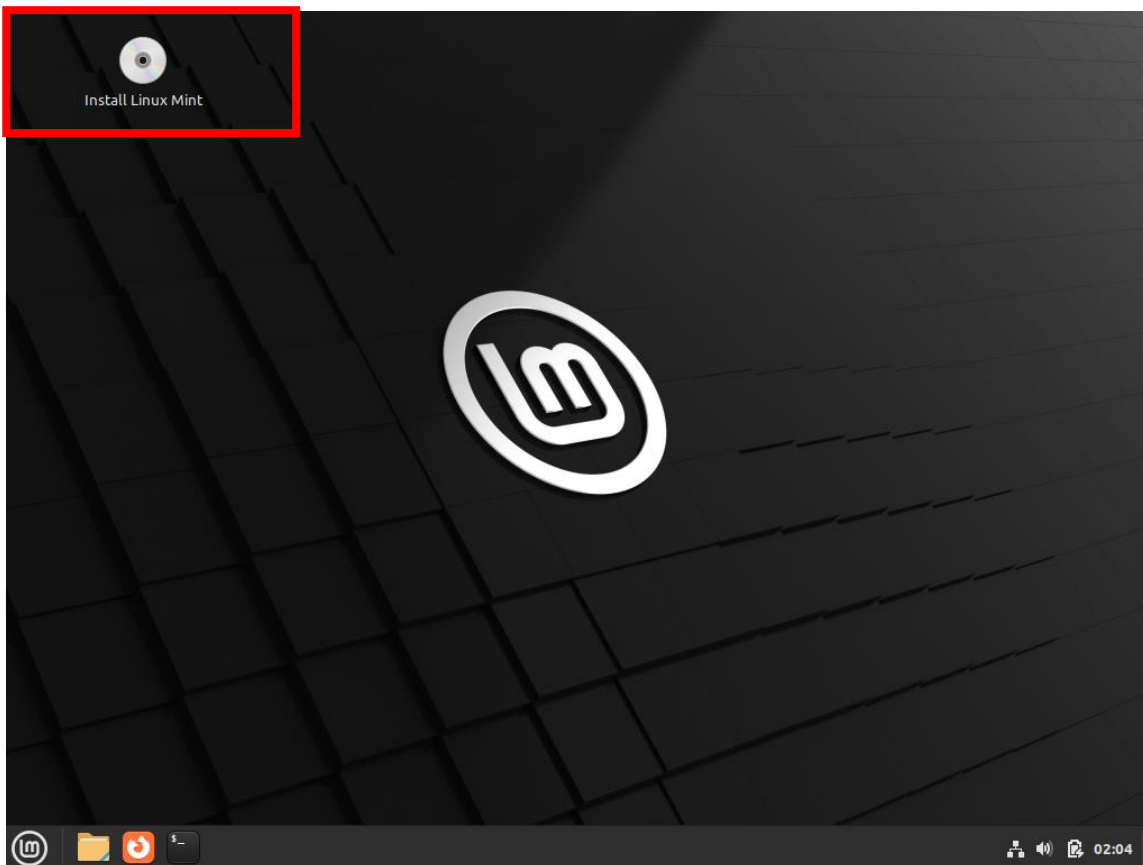


Figure 11 LiveCD Mode

5. To install the operating system on the virtual disk, double click the Install Linux Mint icon. See Figure 11.
6. In this screen, keep the default language (**English**). See Figure 12. Click **Continue**.

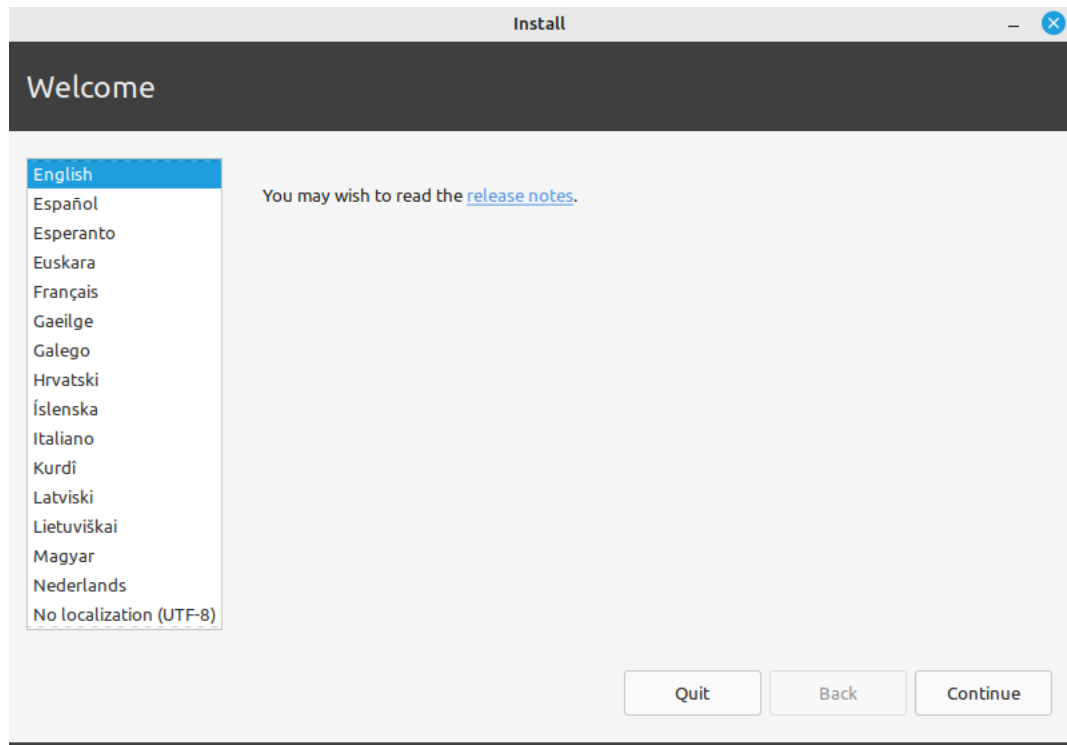


Figure 12 The Language to Use During the Installation

7. In this screen, keep the default keyboard layout settings (English (US)). Type some random words to check if those words correctly appear. See Figure 13. Click Continue.

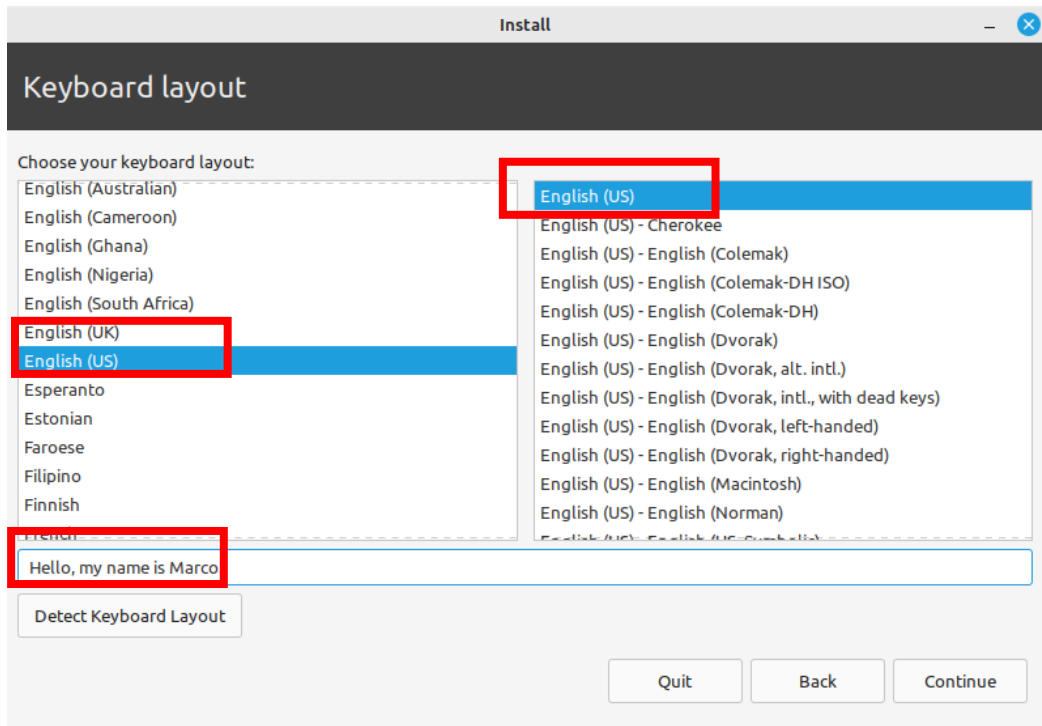


Figure 13 Testing the Keyboard

8. In this screen, check the checkbox to install proprietary (not open-source) codecs if it is allowed in the country you live. See Figure 14. Click **Continue**.

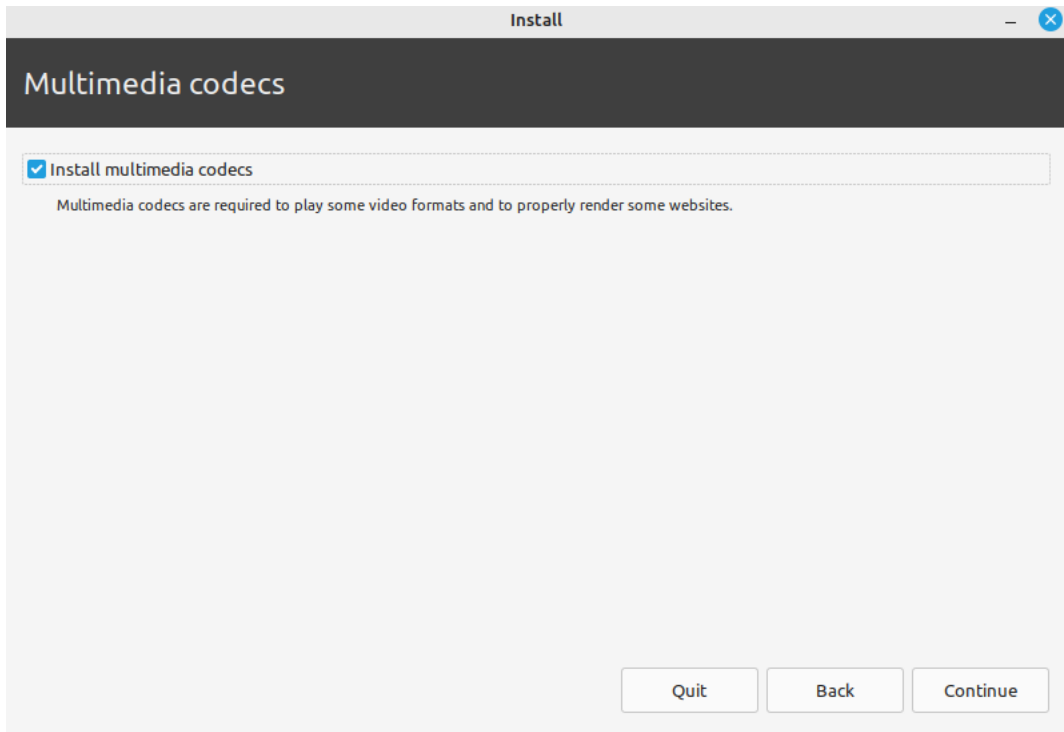


Figure 14 Choosing to Install Proprietary Codecs

9. In this screen, keep the default (**Erase disk and install Linux Mint**). See Figure 15. Click **Install Now**.

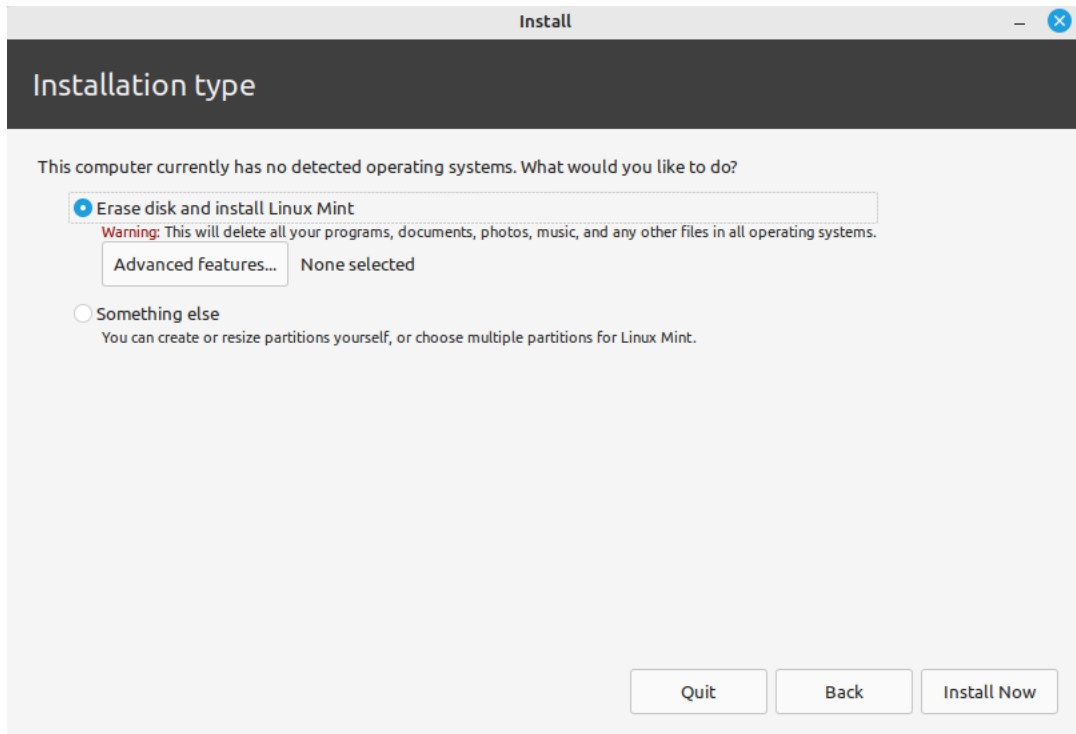


Figure 15 Choosing to Install Mint on the Entire Space on the Virtual Disk

10. The final warning is shown. See Figure 16. Click **Continue**.

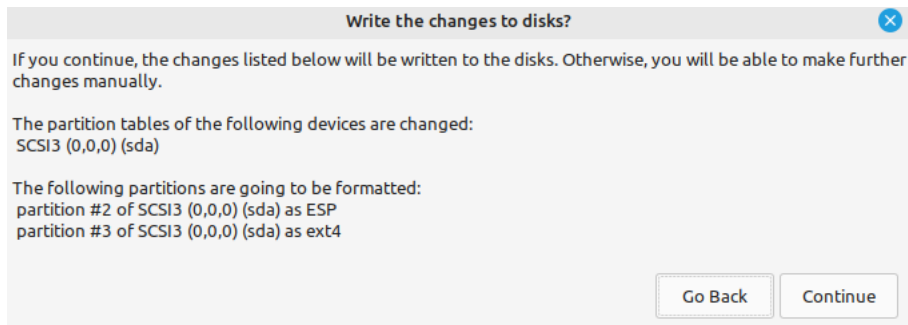


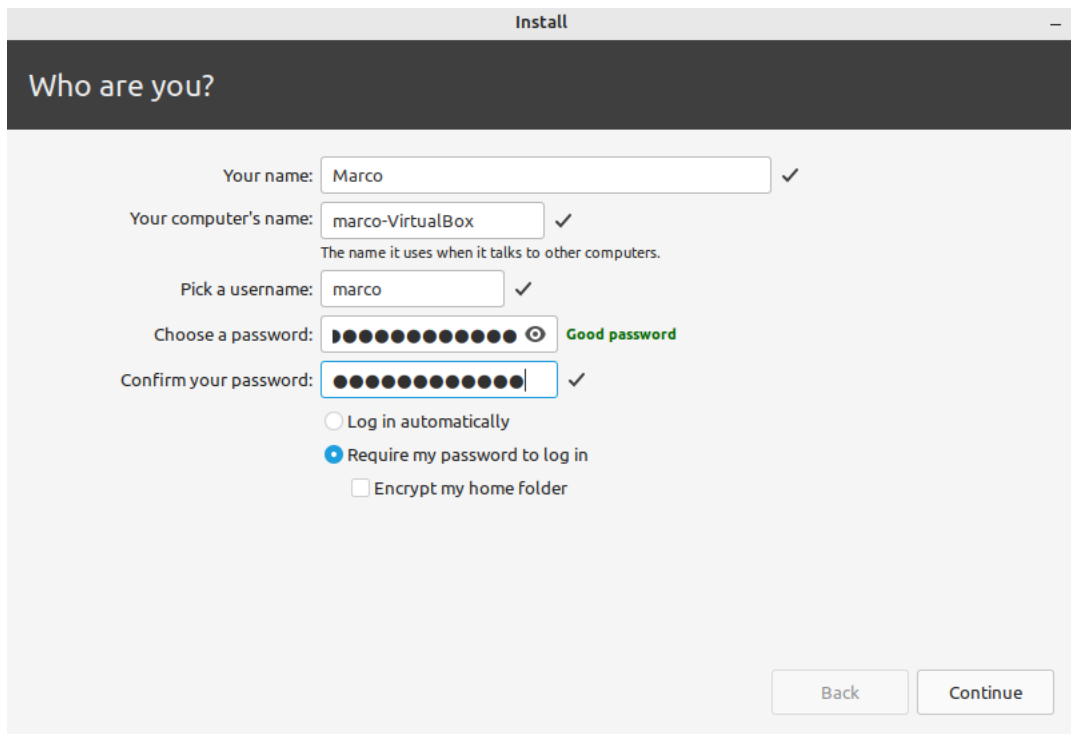
Figure 16 The Final Warning before Destroying the Current Contents of the Virtual Disk

11. In this screen, keep the current geographic location. See Figure 17. Click **Continue**.



Figure 17 Choosing the Geographic Location

12. In this screen, choose the full name, the user name, and the strong password of the primary user of this computer. Also select the hostname (computer name), which may or may not be the same as the virtual machine name in Figure 2; however, the hostname may not contain spaces and special characters other than the minus sign and the underscore symbols. Keep other default settings. See Figure 18. Click **Continue**. The installation starts. During the installation, some features of the distribution are explained. See Figure 19.



The image shows the 'Who are you?' screen of the Linux Mint installer. It is a window titled 'Install'. The screen has a dark header with the text 'Who are you?'. Below the header, there are several input fields and checkboxes. The first field is 'Your name:' with the value 'Marco' and a checkmark. The second is 'Your computer's name:' with the value 'marco-VirtualBox' and a checkmark, with a note 'The name it uses when it talks to other computers.' below it. The third is 'Pick a username:' with the value 'marco' and a checkmark. The fourth is 'Choose a password:' with a masked password and a checkmark, with a green 'Good password' message to its right. The fifth is 'Confirm your password:' with a masked password and a checkmark. Below these fields are three checkboxes: 'Log in automatically' (unchecked), 'Require my password to log in' (checked), and 'Encrypt my home folder' (unchecked). At the bottom right are 'Back' and 'Continue' buttons.

Install

Who are you?

Your name: Marco ✓

Your computer's name: marco-VirtualBox ✓
The name it uses when it talks to other computers.

Pick a username: marco ✓

Choose a password: [masked] ✓ Good password

Confirm your password: [masked] ✓

☐ Log in automatically
☒ Require my password to log in
☐ Encrypt my home folder

Back Continue

Figure 18 Creating the First User and Assignment the Hostname

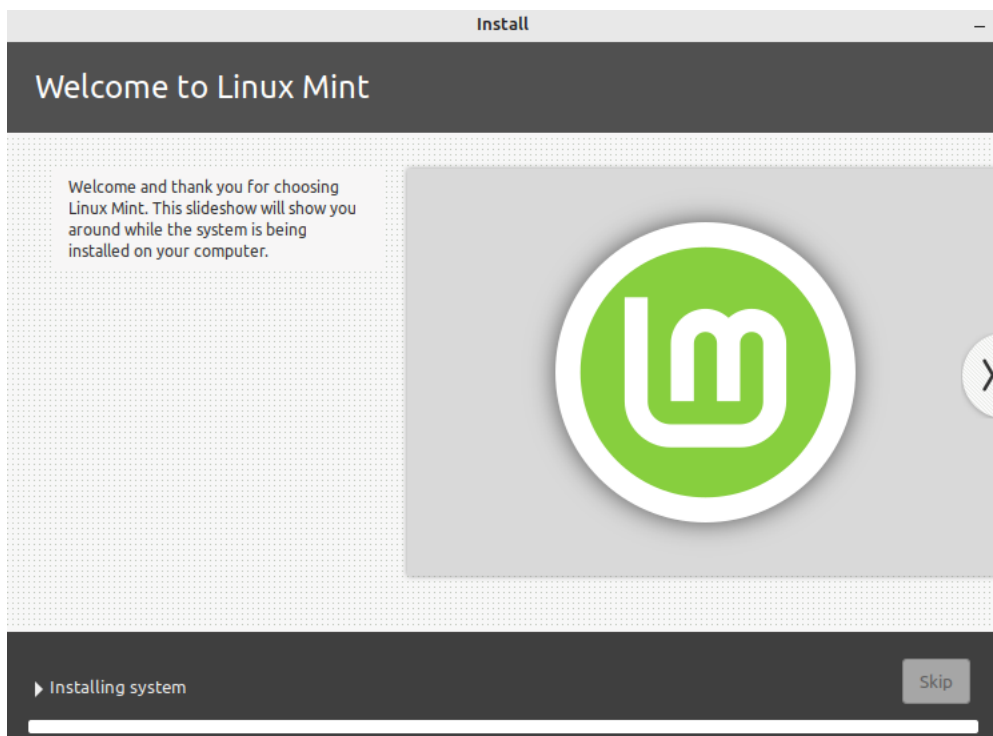


Figure 19 Previewing the Distribution Features

13. The installation is complete. See Figure 20. **Click Restart Now.**

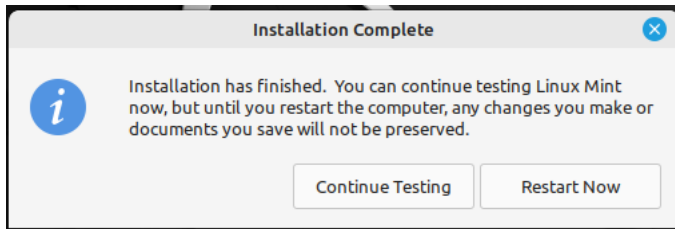


Figure 20 Restarting the Virtual Machine

14. In this screen, press Enter. VirtualBox Manager automatically detaches the ISO file. The installation is complete. See Figure 21.

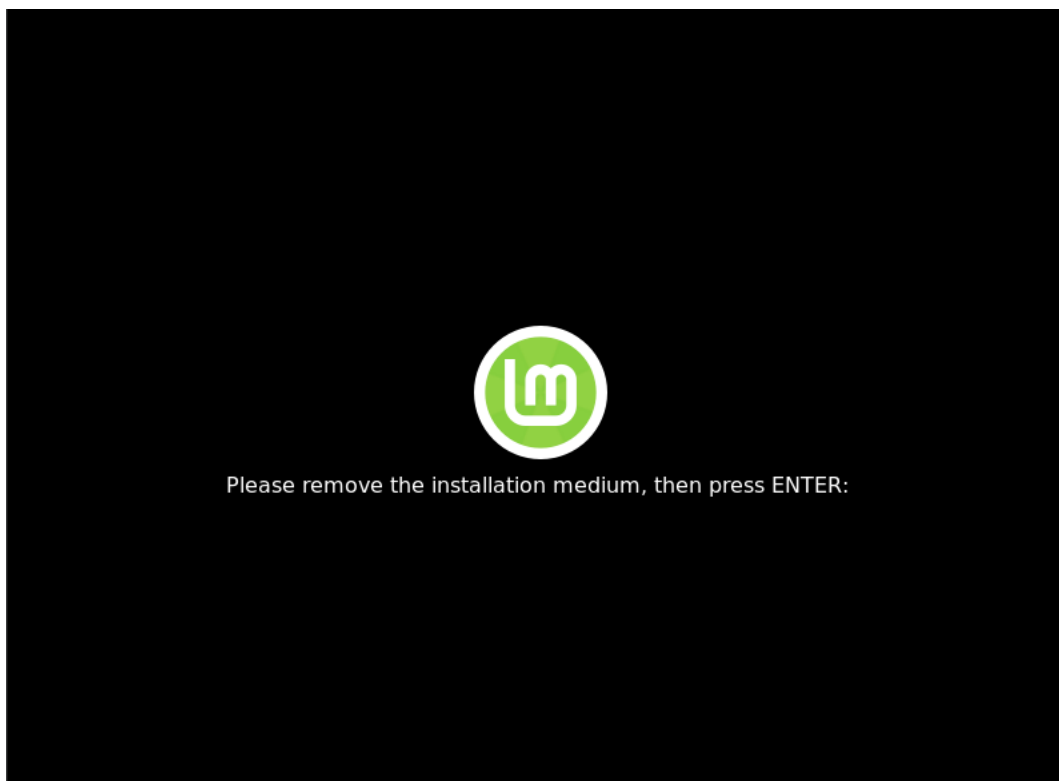


Figure 21 The Installer Asking to Remove the ISO File

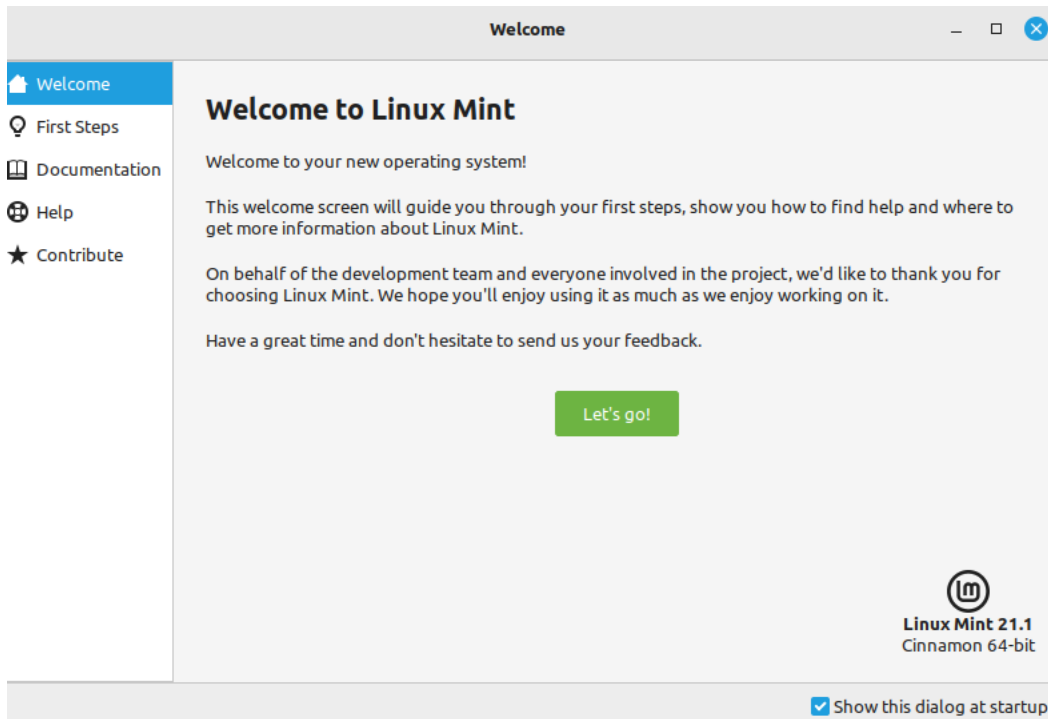


Figure 22 The End of Installation

6 INSTALLING VIRTUALBOX GUEST ADDITIONS

VirtualBox Guest Additions is an optional installation to enhance the user experience. The installation also fixes the issue of the virtual machine screen not properly scaling to fit the virtual machine window. See Figure 23.

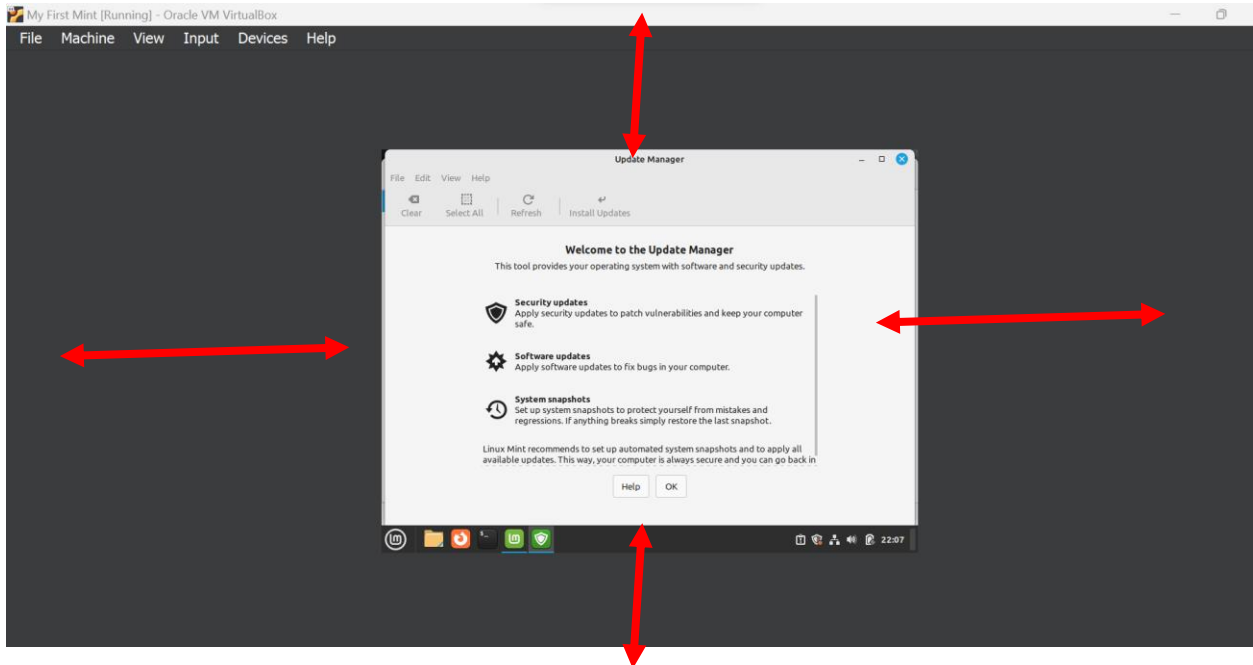


Figure 23 The Virtual Machine Screen Not Scaling

Follow these steps to install the VirtualBox Guest Additions

1. Click the Devices menu. See Figure 24. Click **Insert Guest Additions CD Image**.

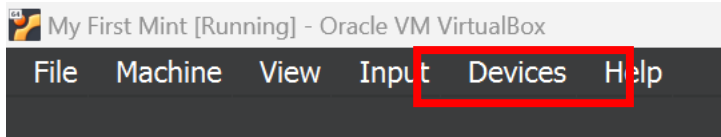


Figure 24 The VirtualBox Devices Menu

2. A dialog box appears. See Figure 25. Click **Run**.

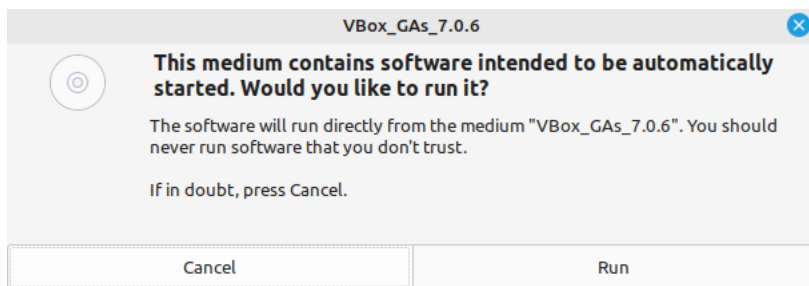


Figure 25 The Guest Additions Installation

3. Another dialog box appears. Enter the password used to log in. See Figure 26. Click **Authenticate**. The installation starts. When the installation is complete, press Enter. See Figure 27.

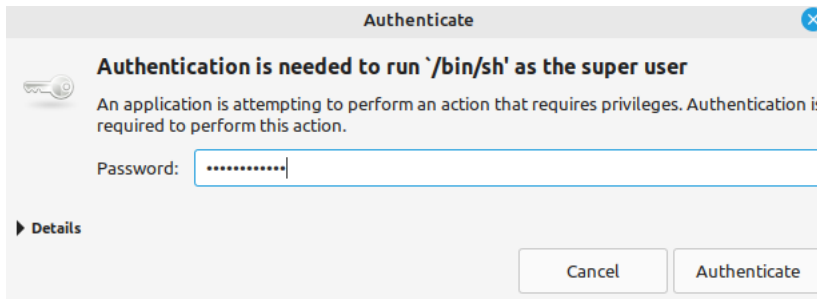


Figure 26 The Guest Additions Installation Authorization

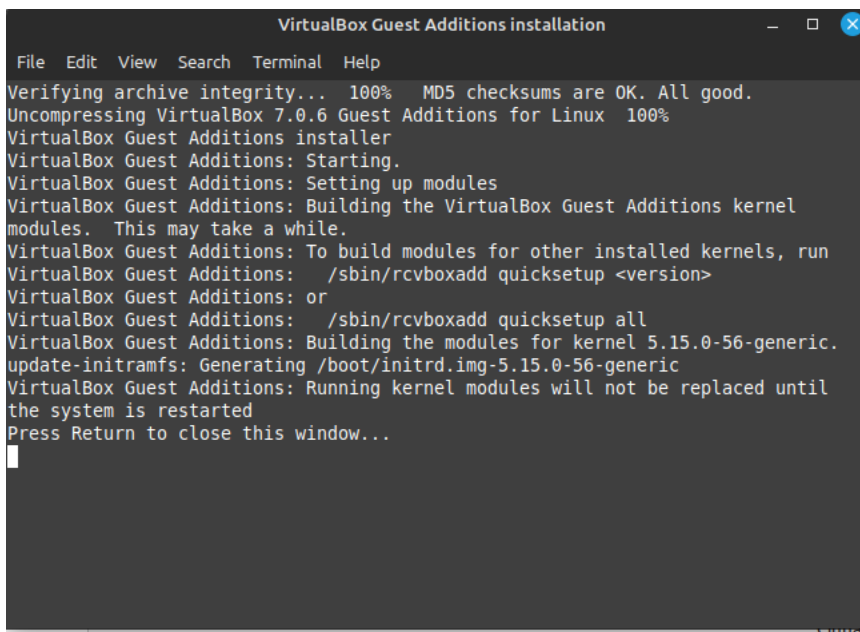


Figure 27 The Guest Additions Installation Completed

4. Click the menu button and then click the red shutdown button. See Figure 28.

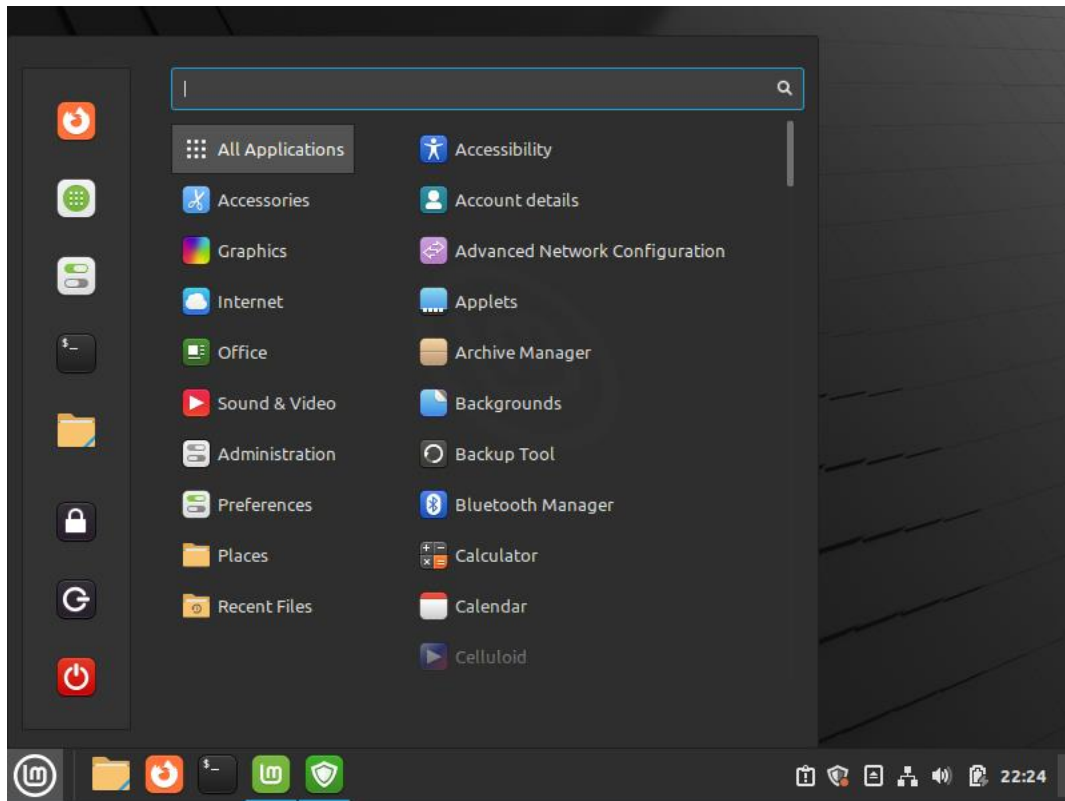


Figure 28 The Menu and Shutdown Buttons

5. Click the Restart button.

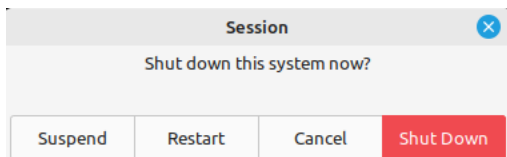


Figure 29 The Restart Button

6. Log in. Unmaximize and maximize the virtual machine windows. See Figure 30.

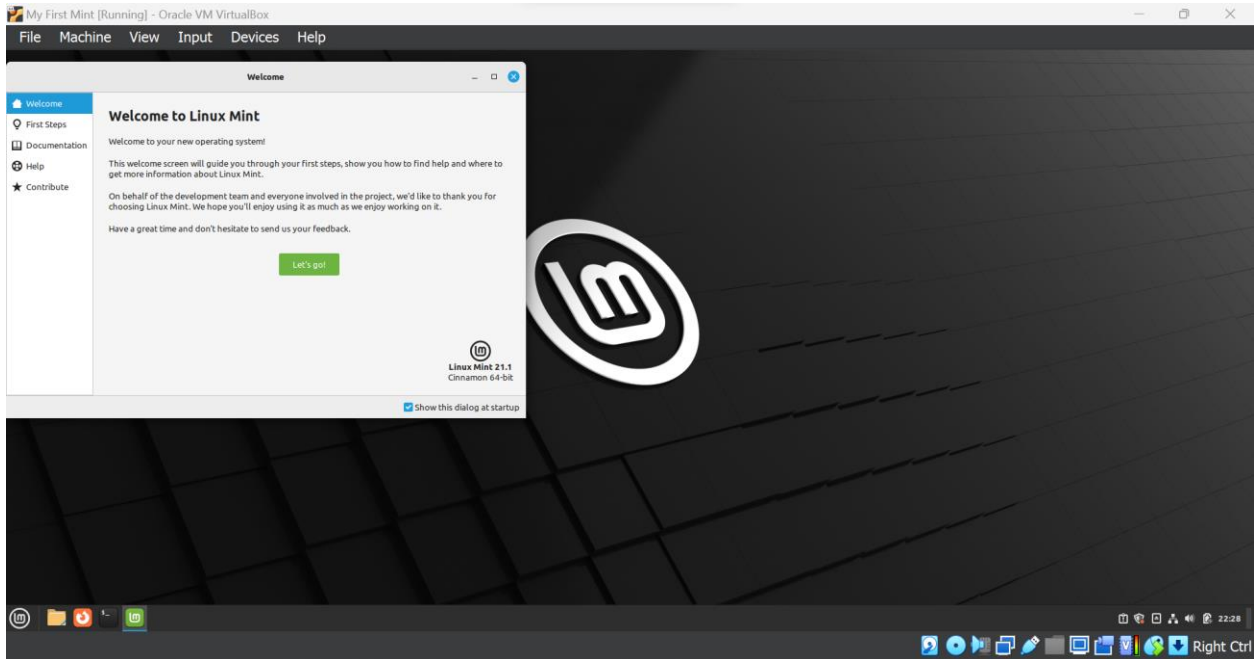


Figure 30 Maximized Virtual Machine Window