Cloud and Virtualization Concepts

Lab 1: Create a Virtual Machine

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Contents

Introduction

In this lab, *Cloud and Virtualization Concepts Lab 1: Create a Virtual Machine,* we use *VMware Workstation* to create a virtual machine using a downloaded ISO of *Lubuntu* Linux. We will work through the various hardware settings that you will need to set prior to your installation.

Once the operating system is installed, we will make adjustments to the virtual machine hardware.

Objectives

- Create a virtual machine
- Install Linux Lubuntu operating system on the new virtual machine
- Modify virtual hardware settings

Lab Topology

Lab Settings

The information in the table below will be needed in order to complete the lab. The task sections below provide details on the use of this information.

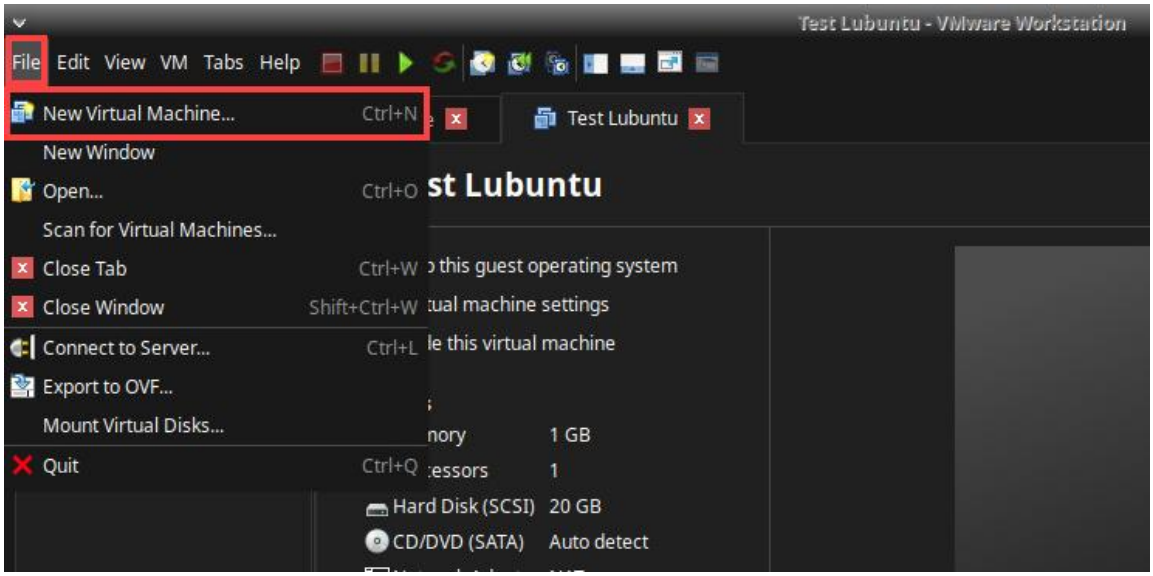
Virtual Machine	IP Address	Account (if needed)	Password (if needed)
workstation	192.168.14.1	sysadmin	Train1ng$

1 Build a Virtual Machine with the Workstation Wizard

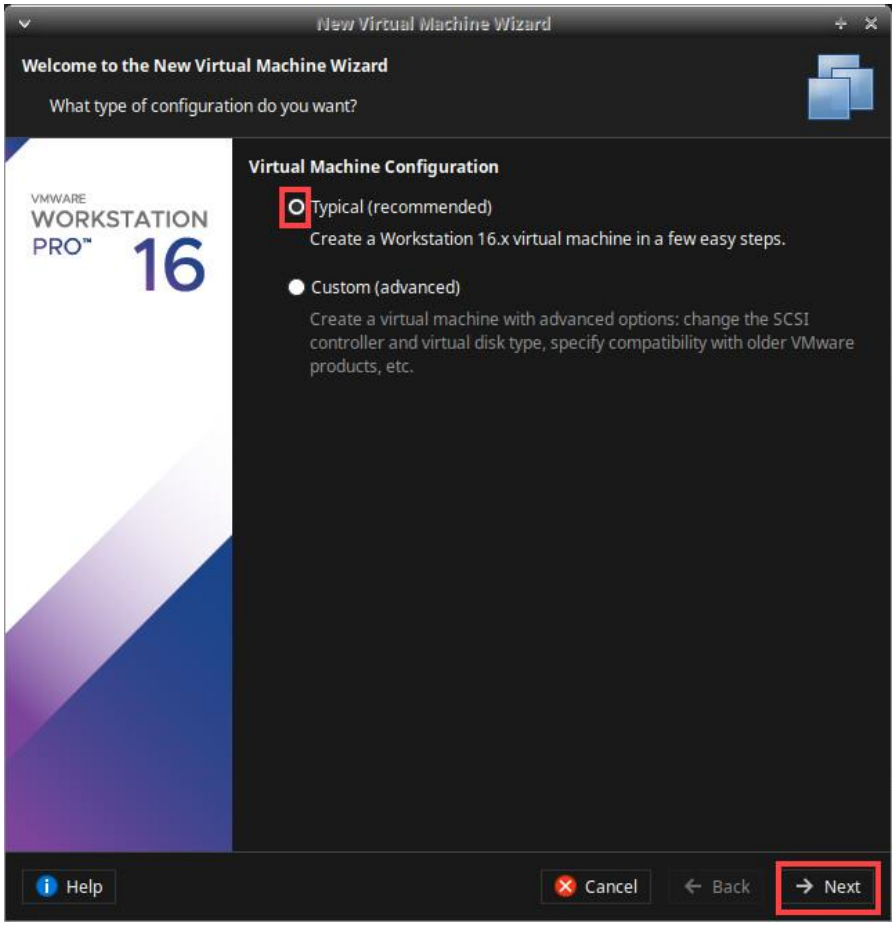
Create and configure a Linux-based operating system as a virtual machine. In this task, you will become familiar with how to deploy and install a virtual machine from an ISO image file, along with identifying and making modifications to multiple virtualized hardware specifications.

1. Open the *VMware Workstation* application. On the desktop, double-click the **VMware Workstation** icon. Wait a few seconds for the program to load.

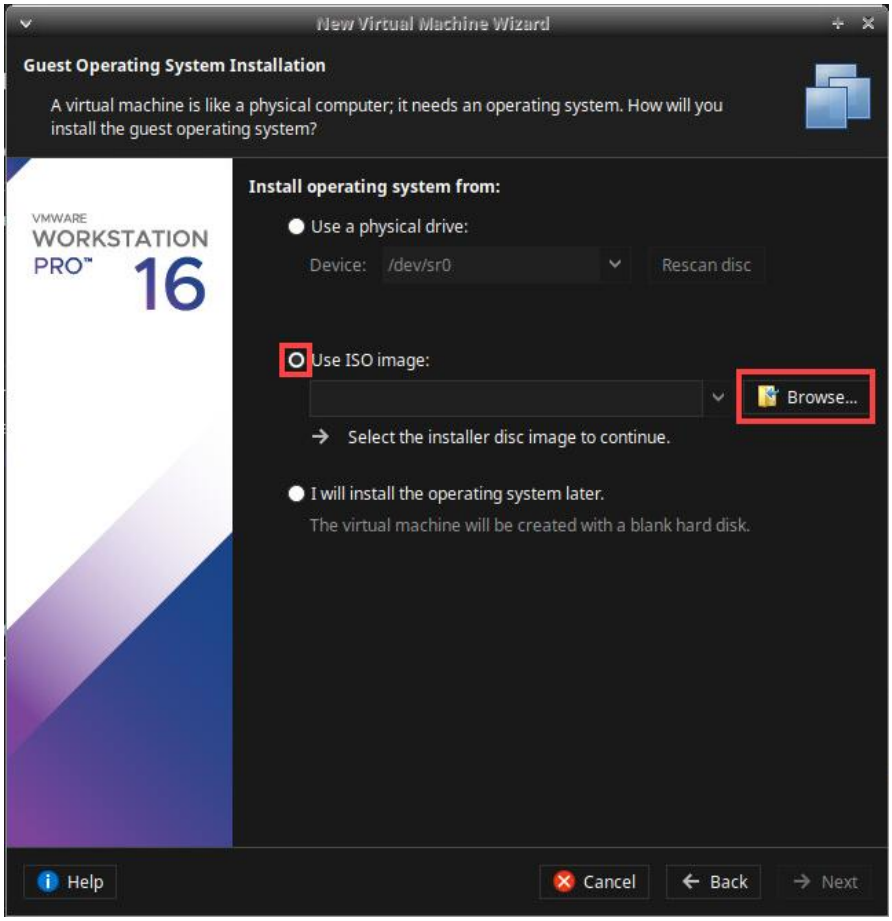
2. In the *VMware Workstation* window, click the **File** tab and then select **New Virtual Machine** from the dropdown menu.



3. Select a VM configuration method. Choose the **Typical (recommended)** option underneath *Virtual Machine Configuration*. Click **Next**.

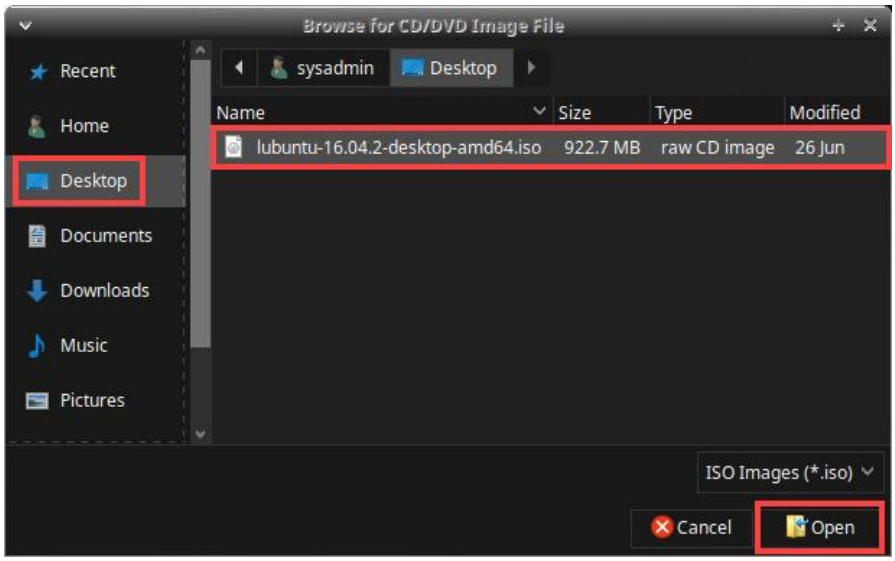


4. To install the guest operating system using an ISO image, select **Use ISO image** and then click the **Browse** button.

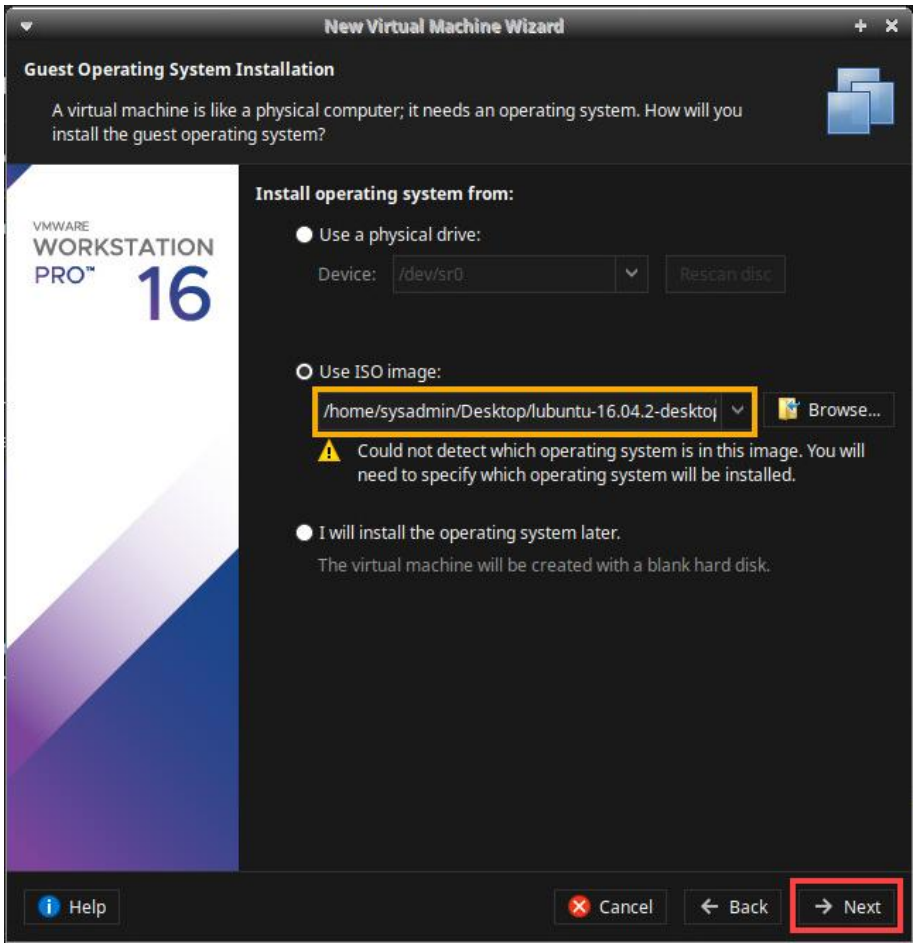


An ISO image is a file version of an optical disk. Many software distributions that are used to boot up machines, such as operating systems, are available for download in .iso format, which can then be written to a physical disk.

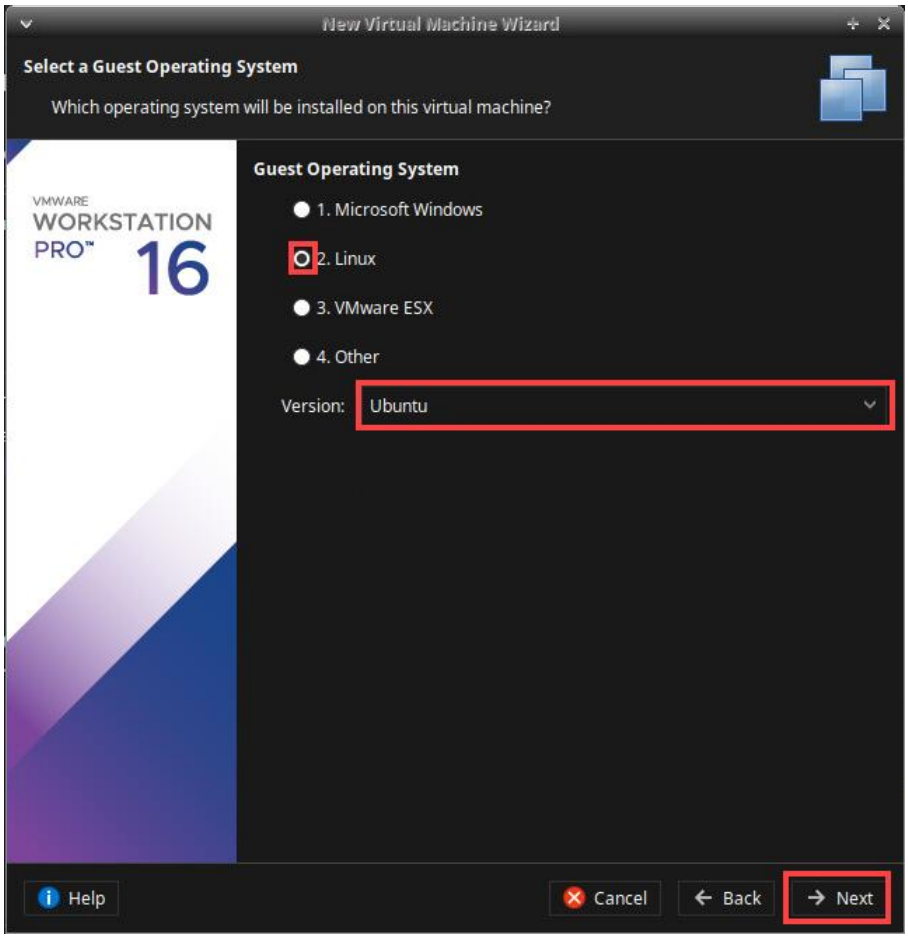
5. In the *Browse for CD/DVD Image File* window, select **Desktop** from the left pane, then select the ISO image file **lubuntu-16.04.2-desktop-amd64.iso** on the right. This is the file the operating system will be installed from. Click **Open**.



6. The ISO file path should be displayed in the box under the *Use ISO image:* option. Click **Next**.

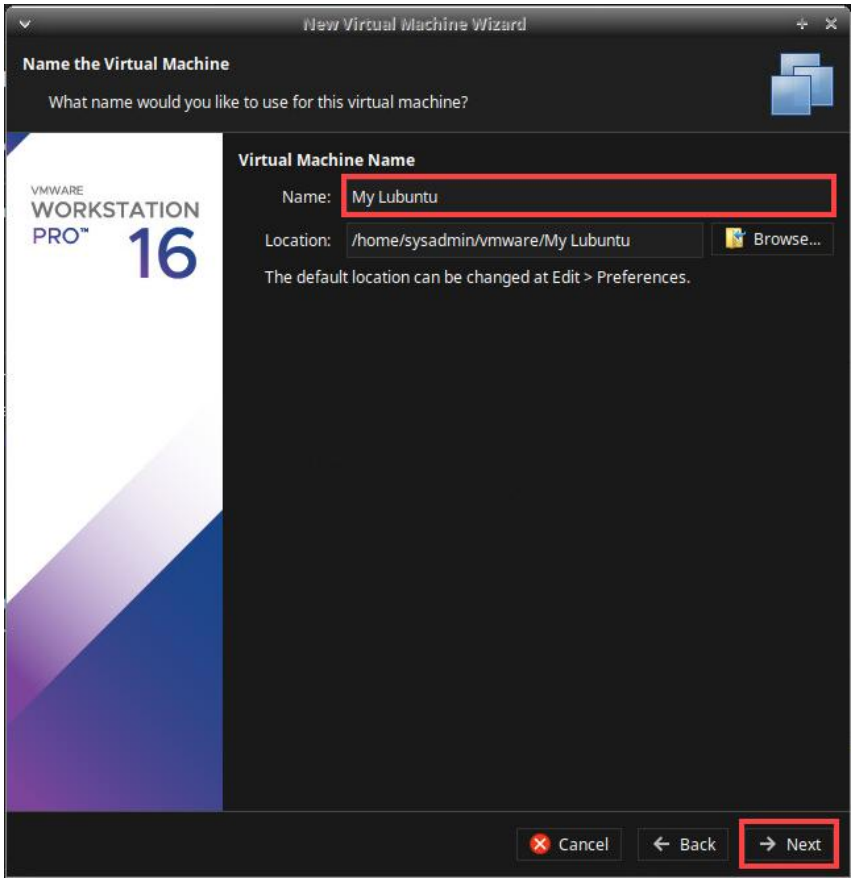


7. On the *Select a Guest Operating System* step, select **Linux** and leave the default selection of **Ubuntu**. Click **Next**.

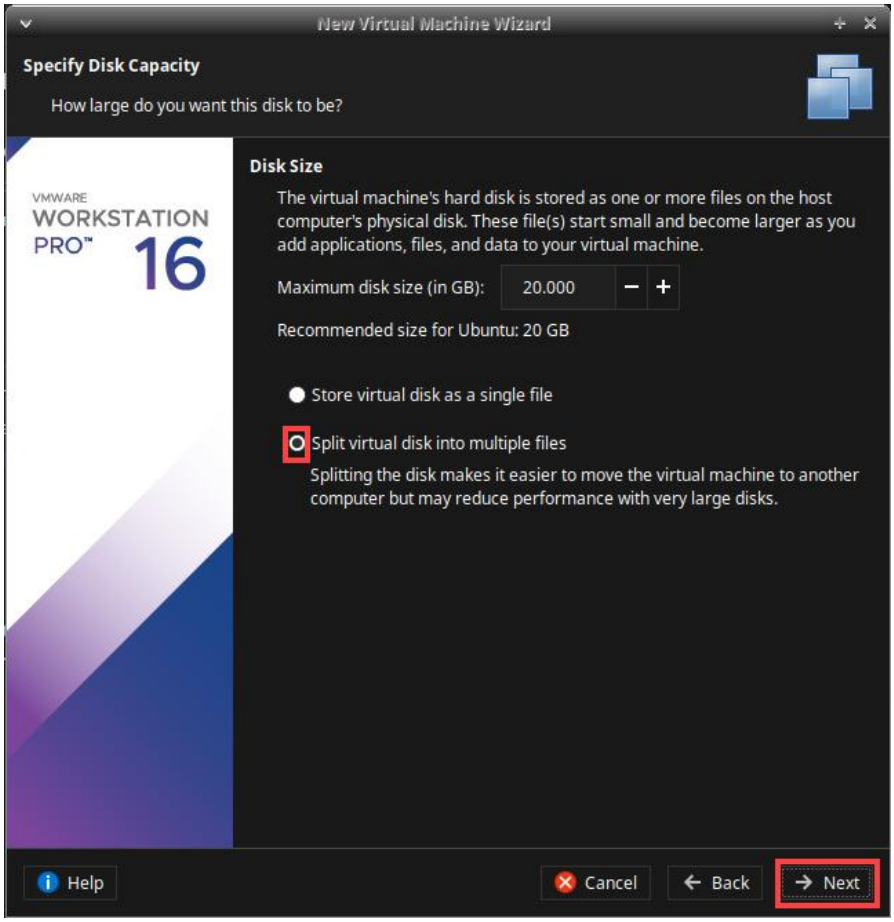


Remember that the guest operating system is the virtual machine's operating system (OS).

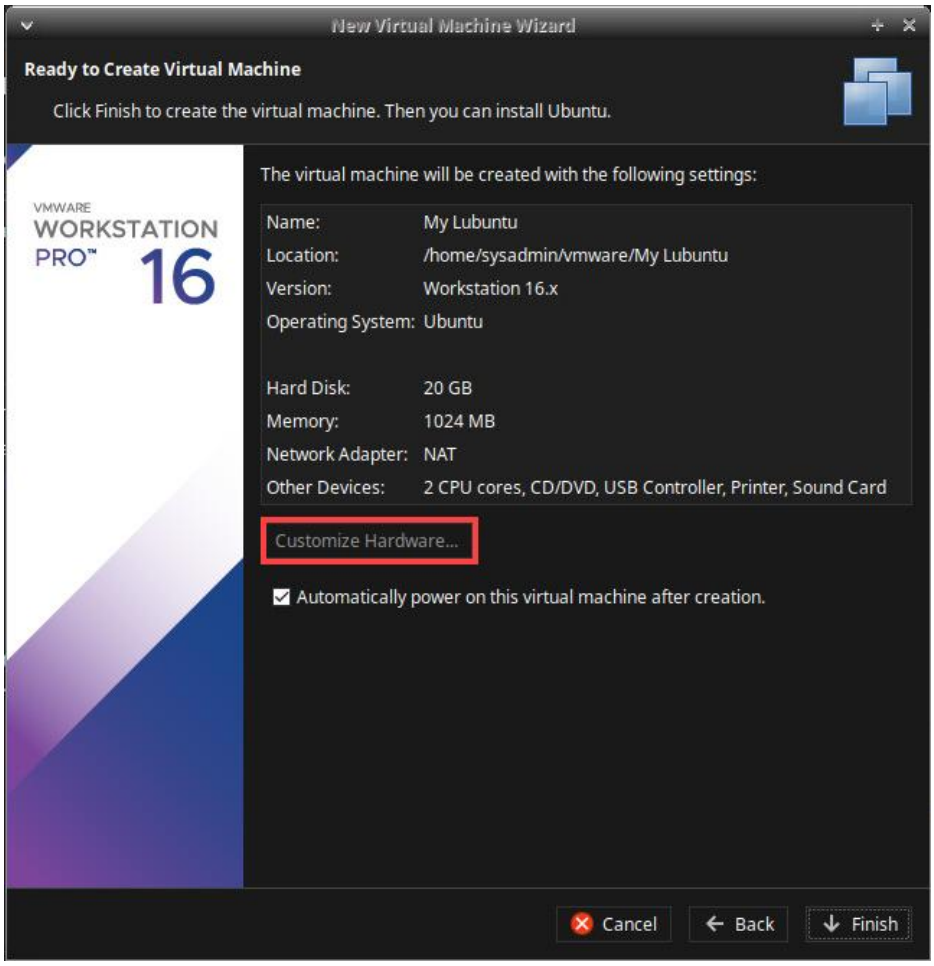
8. On *the Name the Virtual Machine* step, type `My Lubuntu` in the *Name* field. Leave the default location configured to */home/sysadmin/vmware/My Lubuntu* and then click **Next**.



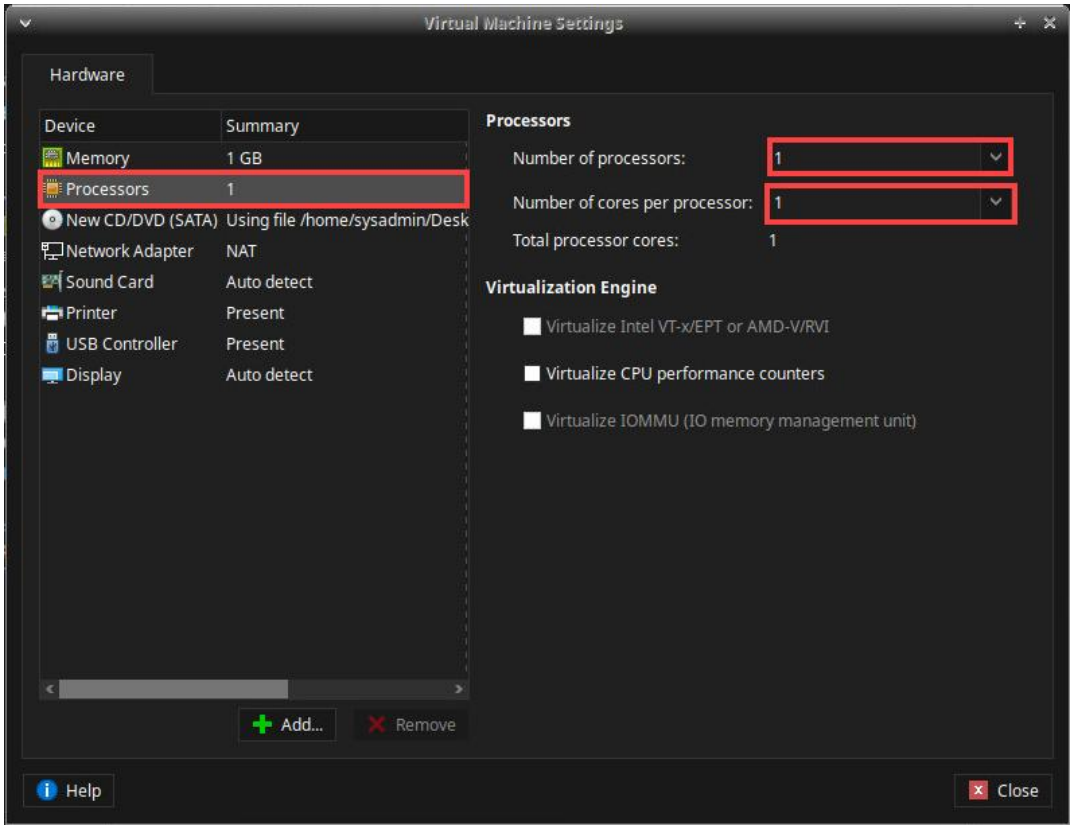
9. On the *Specify Disk Capacity* window, select **Split virtual disk into multiple files**. Notice that the benefit and disadvantage of using a split disk is noted below the option. Click **Next**.



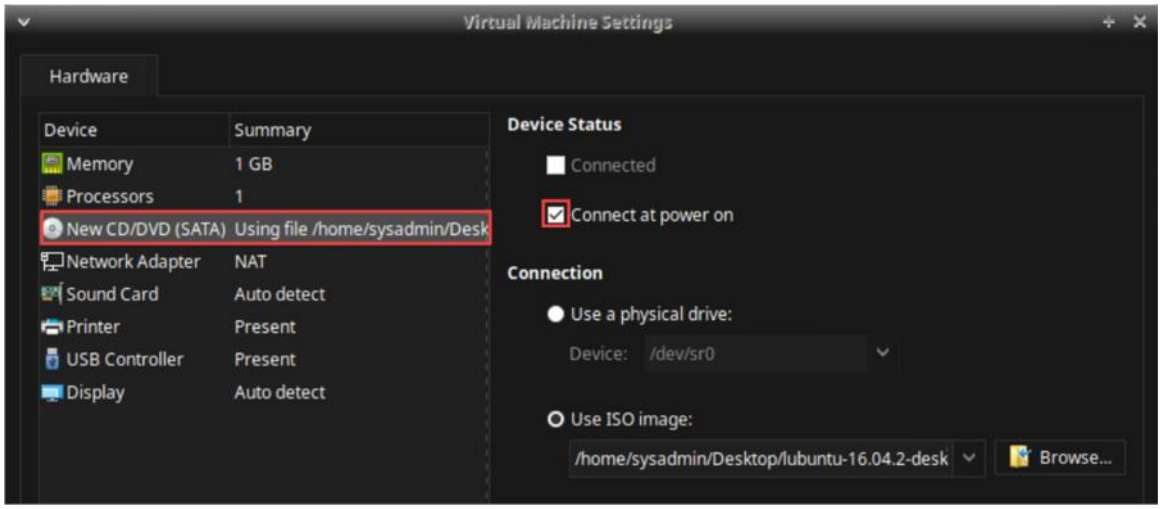
10. Customize the VM's hardware. Click the **Customize Hardware** button on the *Ready to Create a Virtual Machine* step.



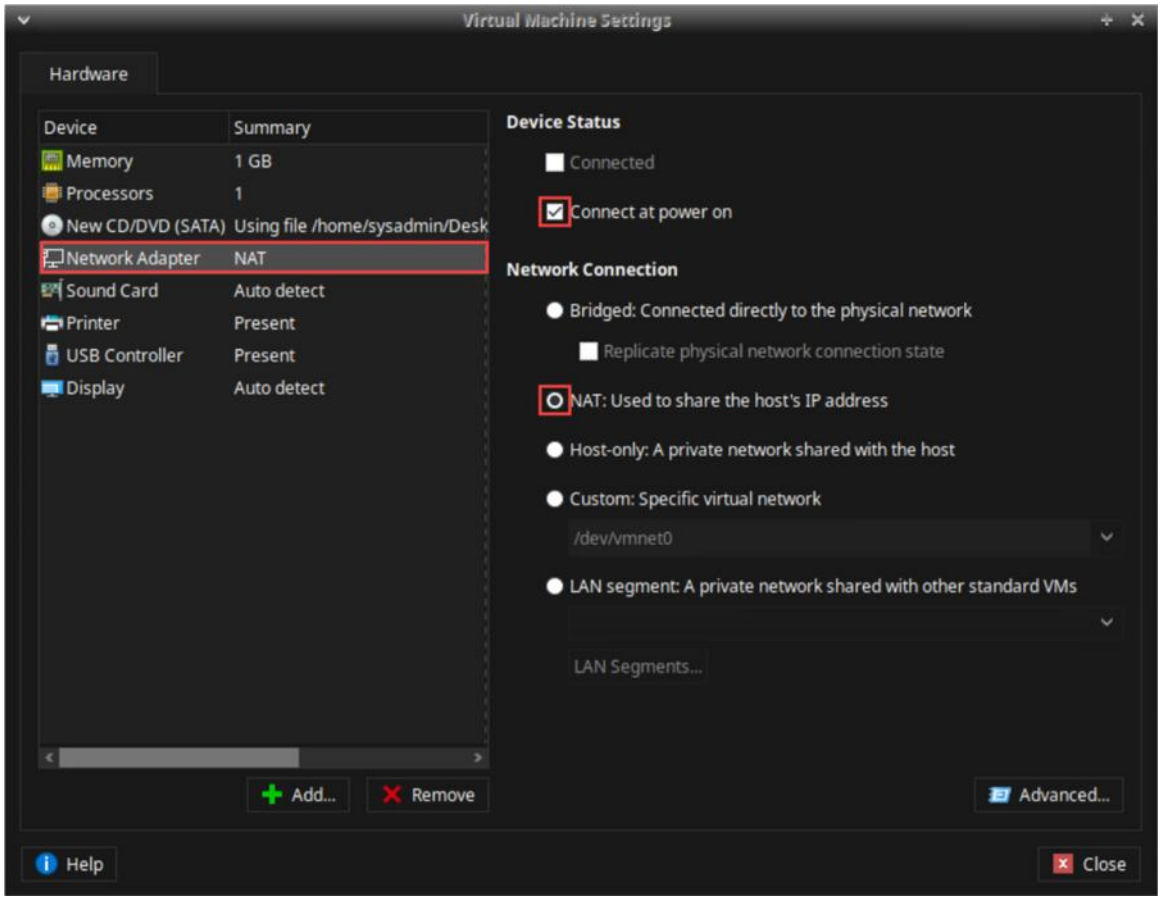
11. In the *Virtual Machine Settings* window, select **Processors** underneath the *Device* column. In the right pane, verify that the *Number of processors* setting is set to **1** and *Number of cores per processor* is set to **1**.



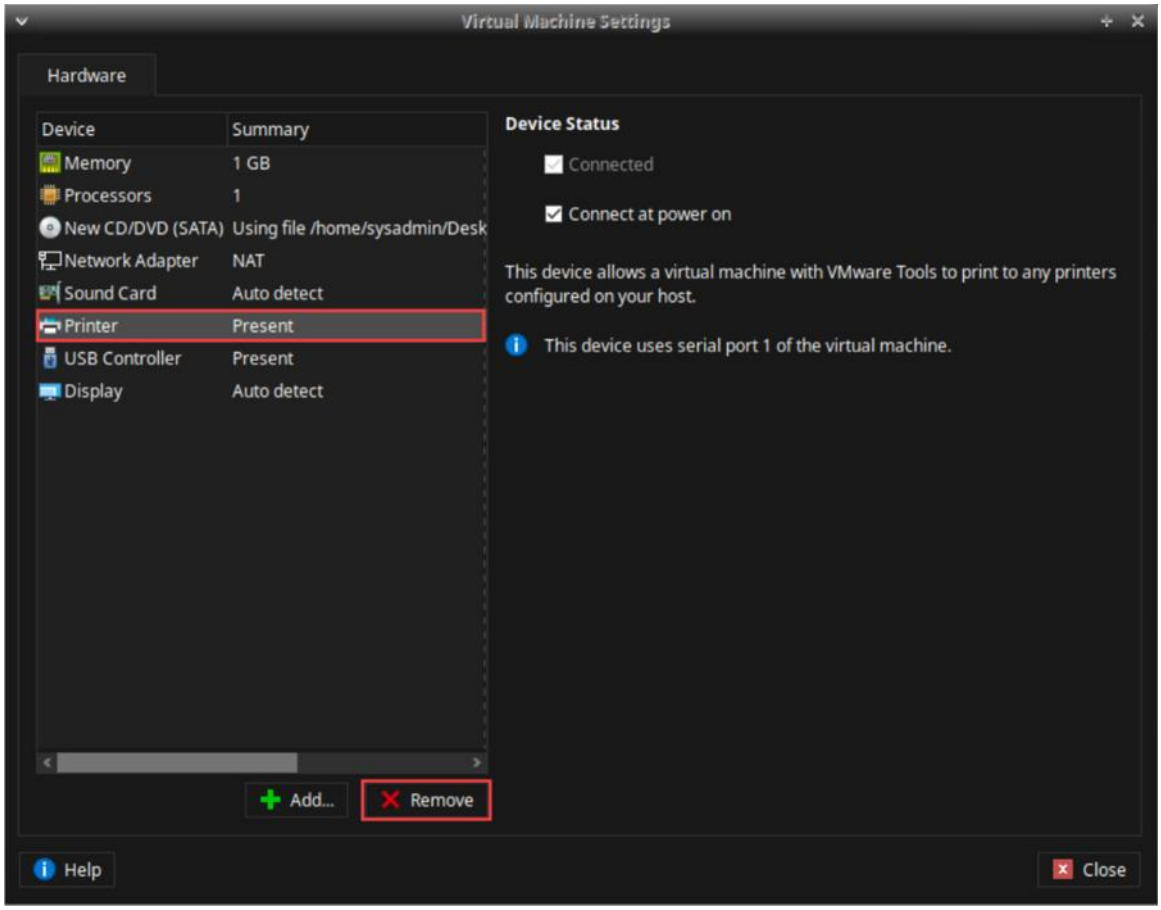
12. Select **New CD/DVD (SATA)** as the next device. In the right pane, verify that *Device Status* is set to **Connect at power on**.



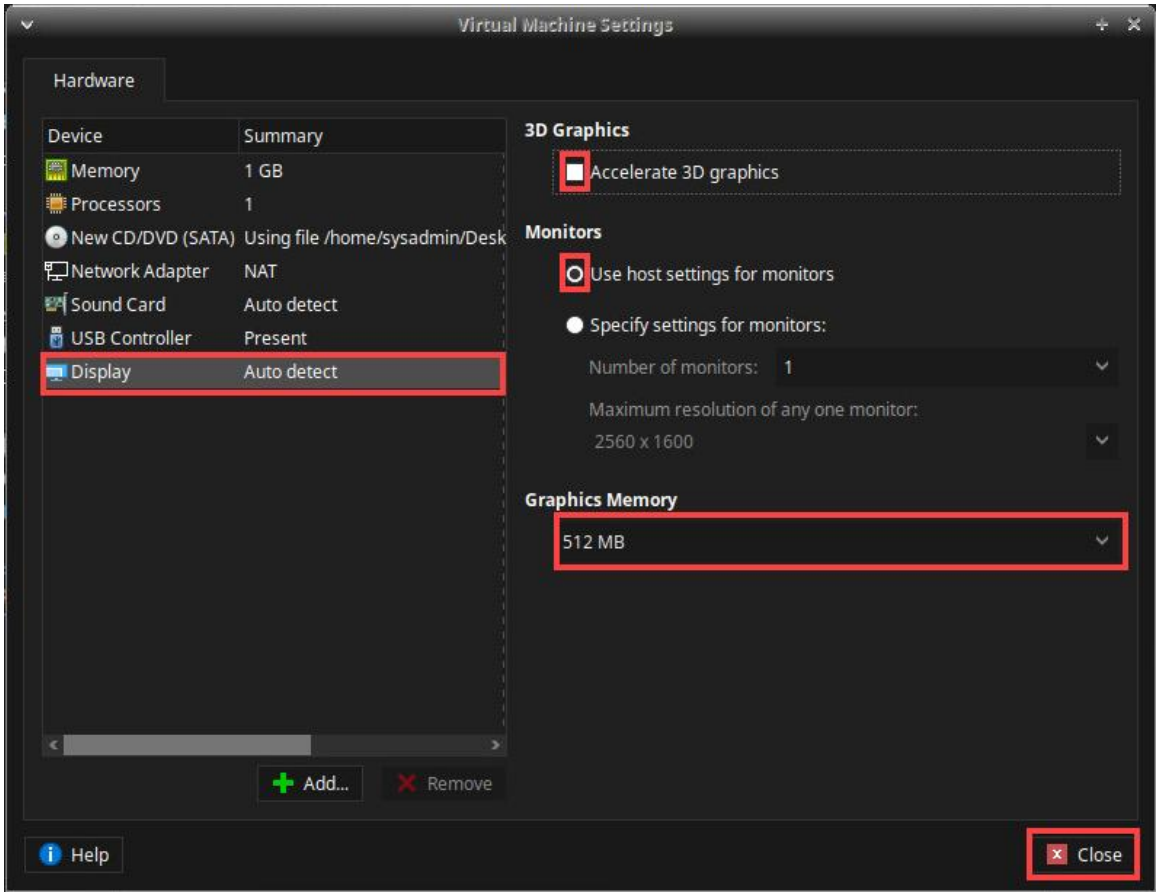
13. Select **Network Adapter**. In the right pane, verify that *Device Status* is set to **Connect at power on**. Verify that **NAT: Used to share the host's IP address** is selected under *Network Connection*.



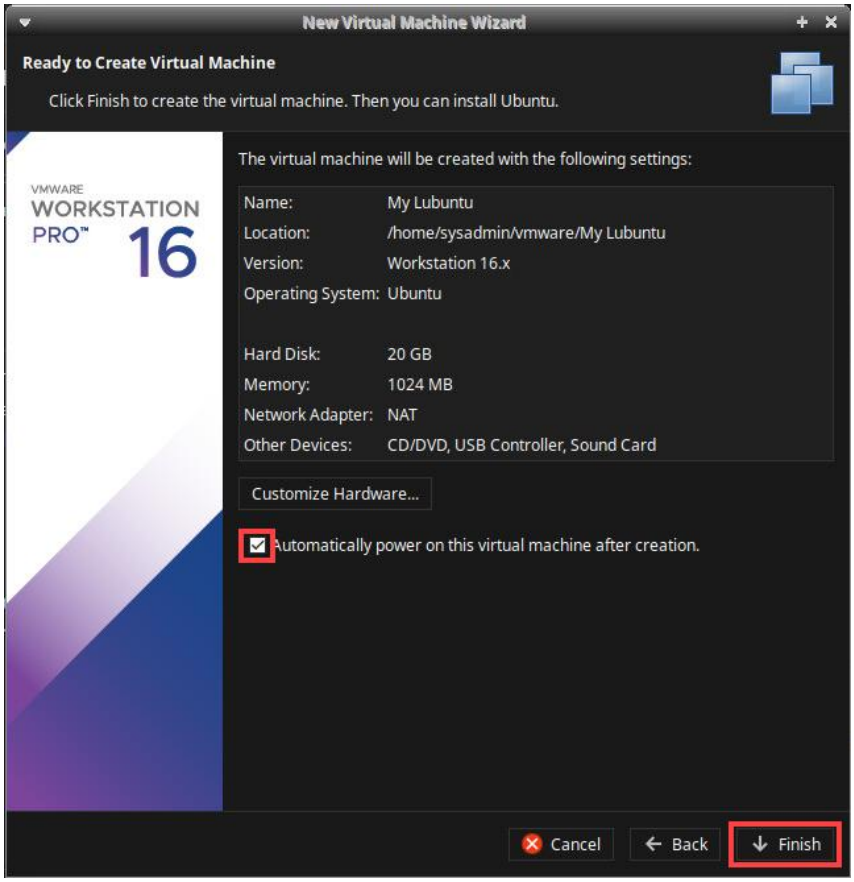
14. Remove the printer from the VM's hardware devices. Select **Printer** from the *Devices* column and click the **Remove** button.



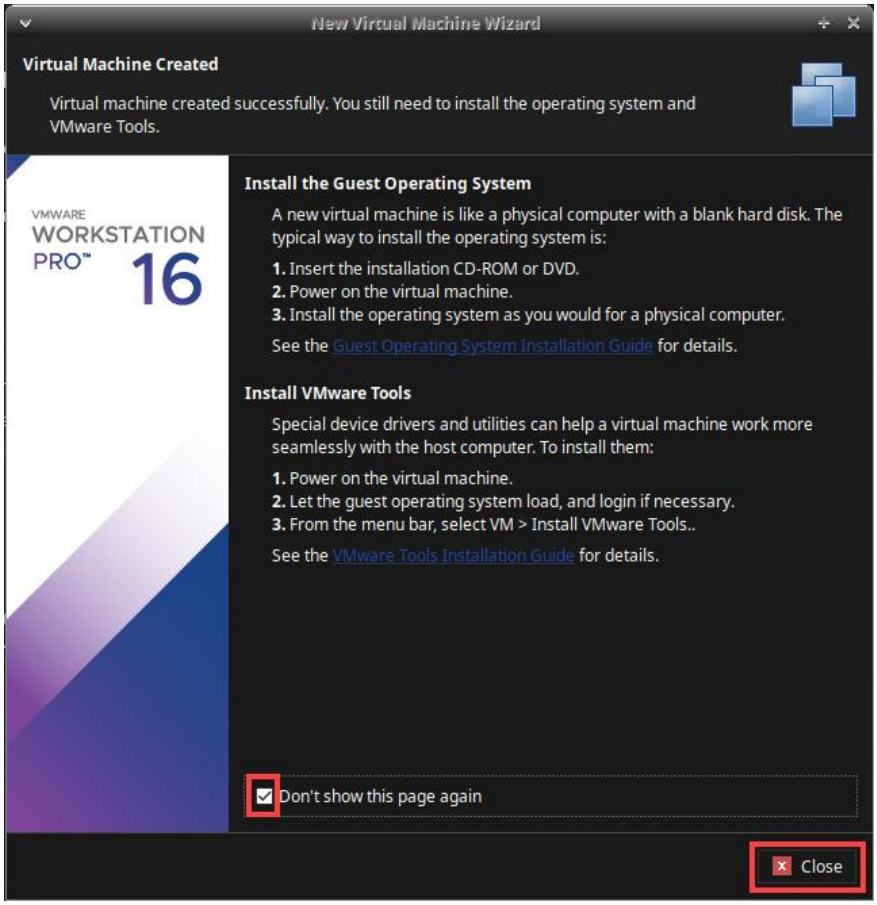
15. Select **Display**, followed by selecting the **Use host settings for monitors** radio button. Under *Graphics Memory*, set the maximum amount of guest memory to **512 MB**. **Uncheck** the checkbox for **Accelerate 3D graphics**. Once finished, click the **Close** button to save the configuration, close *Virtual Machine Settings,* and return to the *New Virtual Machine Wizard* window.



16. Back on the *Ready to Create Virtual Machine* window, verify that the machine is set to automatically power on after creation and click **Finish**.

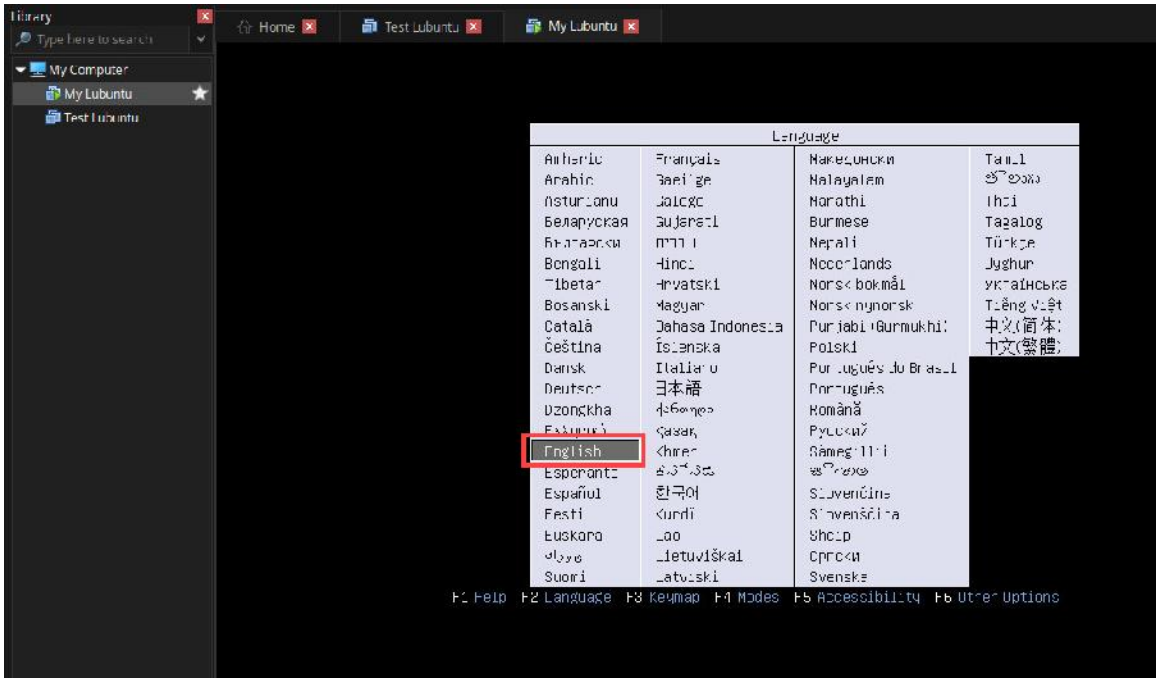


17. Notice a new window appears, **check** the checkbox for **Don't show this page again** and click **Close** to exit *the New Virtual Machine Wizard*.

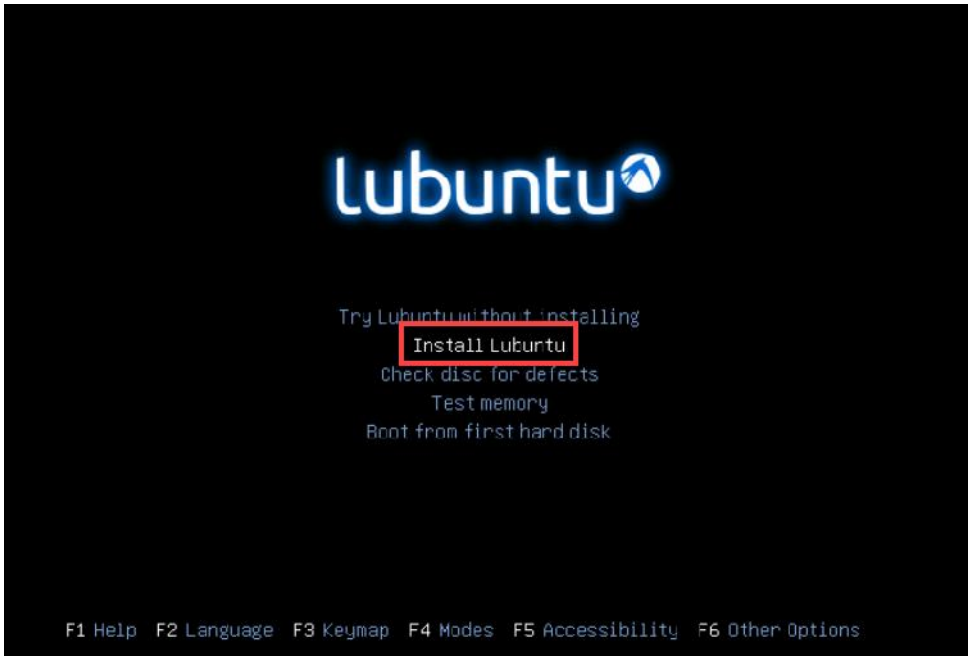


If a performance warning appears, select **Never show this hint again** and click **OK** to continue**.**

18. The virtual machine will begin to initialize. Notice the *Language* appears within the VM console viewer, click once anywhere on the VM console and use the arrow keys followed by the **Enter** key to select **English**.

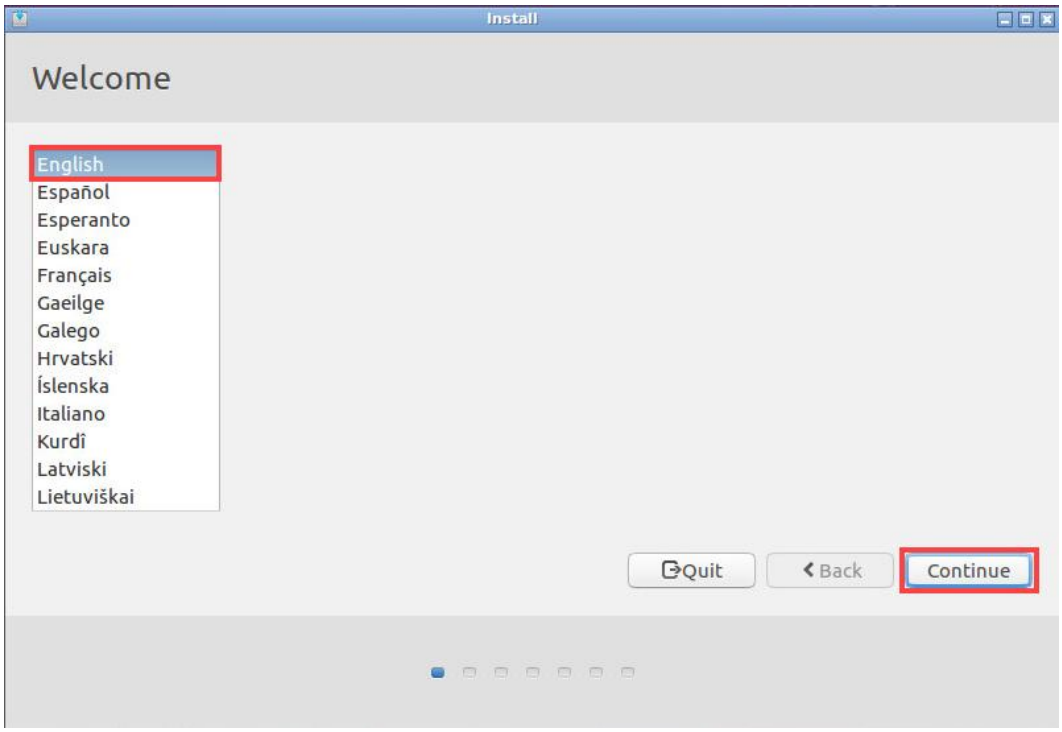


19. Use the arrow keys to select **Install Lubuntu** followed by clicking the **Enter** key.

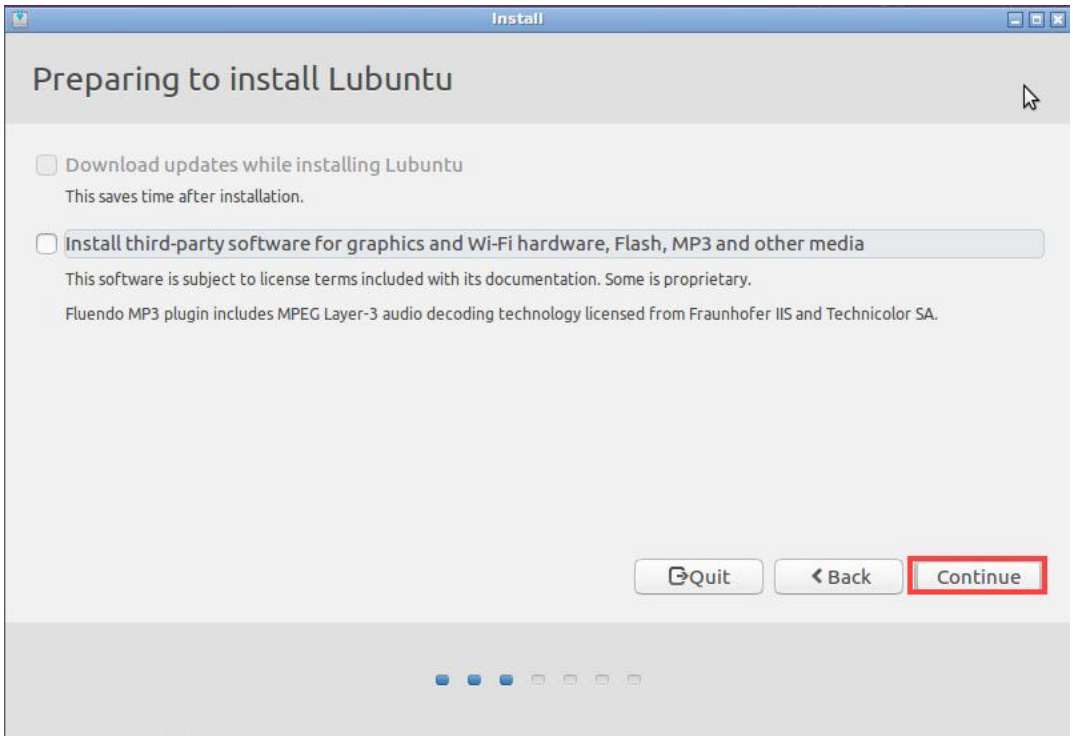


If you missed the screen above due to the timer, you will be automatically brought to the *Lubuntu* desktop running as a live CD. Double-click the **Install Lubuntu** icon on the desktop to continue.

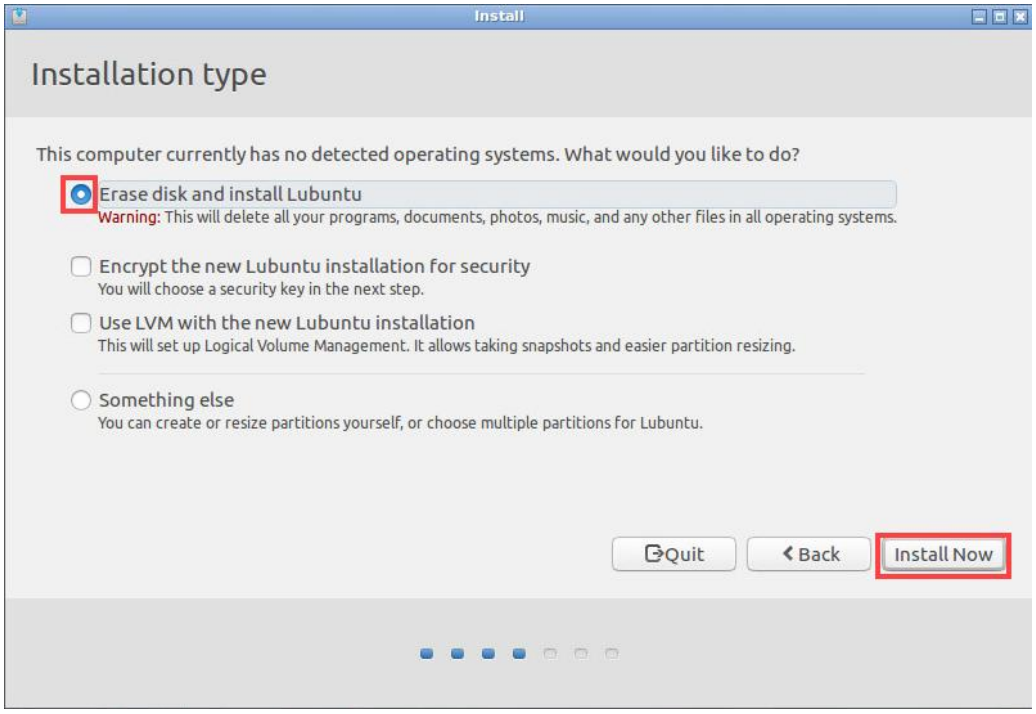
20. On the *Welcome* screen of the *Lubuntu* installation, verify that **English** is selected as a language and click **Continue**.



21. On the *Preparing to Install Lubuntu* screen, click **Continue** without selecting additional options.



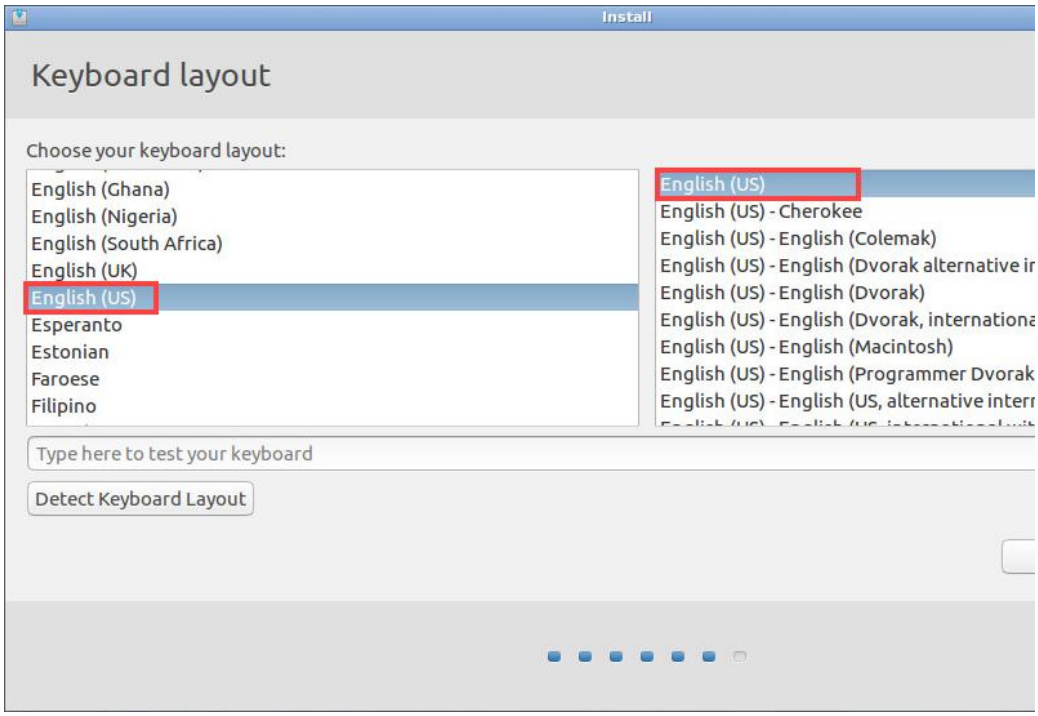
22. On the *Installation Type* screen, verify that the **Erase disk and install Lubuntu** option is selected and then click **Install Now**.



23. A warning window summarizing the changes being written to the disk will appear; click the **Continue** button.

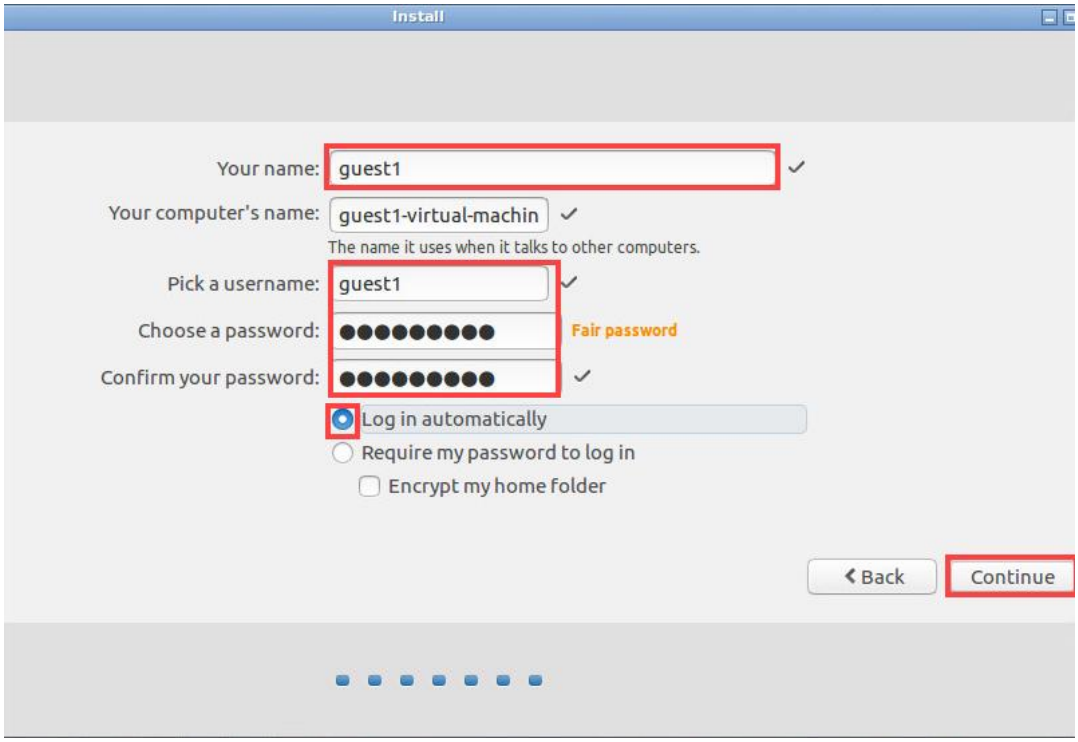
24. Select the **New York** time zone, click **Continue**.

25. On the *Keyboard Layout* screen, verify that the **English (US)** option is chosen and click **Continue**.



If you are unable to see the "*Continue*" button, try moving the *Install* window to the left on the VM console by clicking/holding the title bar.

26. On the next screen, in the *Your name* text field, type **`guest1`**. In the *Pick a username* field, type **`guest1`**. In the *Choose a password* text field, type the password **`Train1ng$`**. Retype the password in the *Confirm your password* text field. Select the option **Log in automatically** and click **Continue**. Allow the system a few minutes to install.

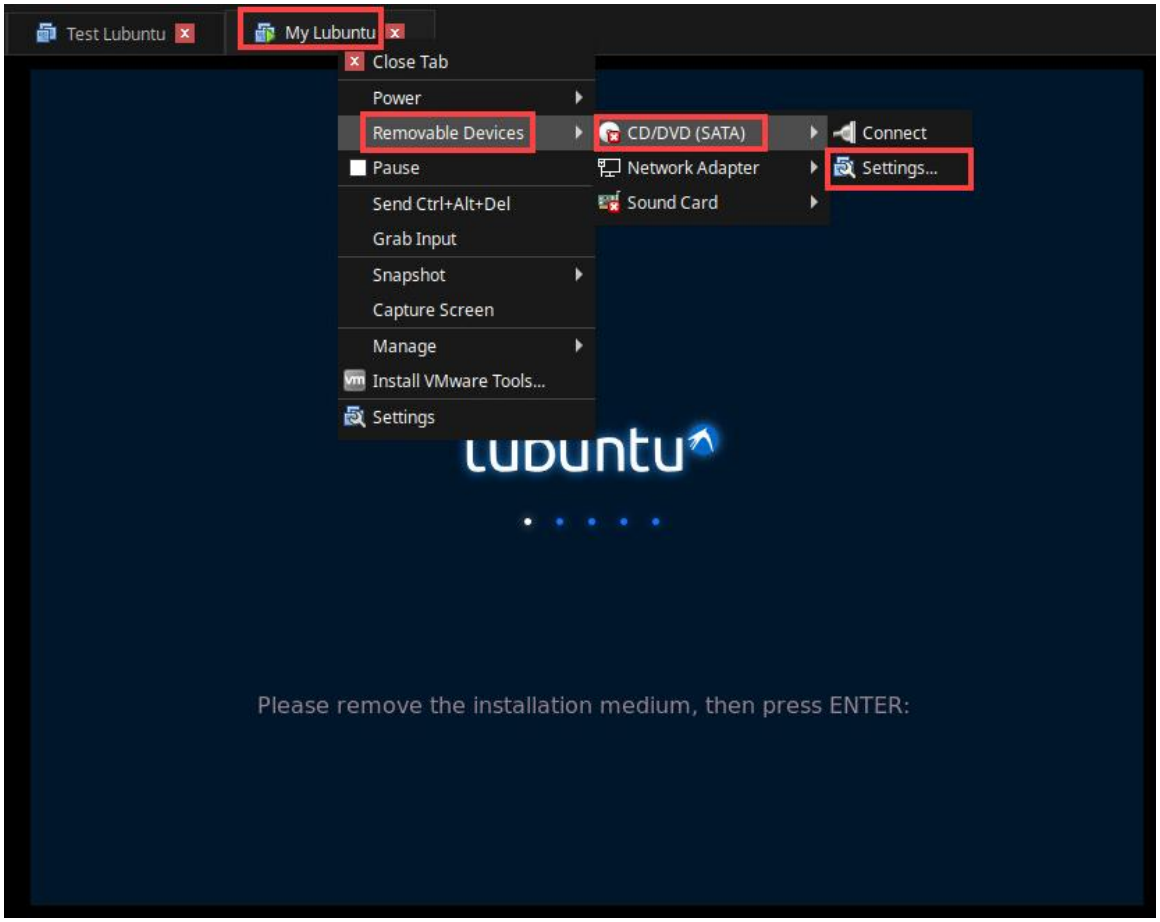


27. Leave the installation window open to continue with the next task. The installation should take about 7 minutes to complete.

2 Adjust the Virtual Machine Hardware Settings

Follow up with a post-installation procedure. In this task, you will learn how to detach the ISO used to install an operating system and how to finalize any hardware configurations.

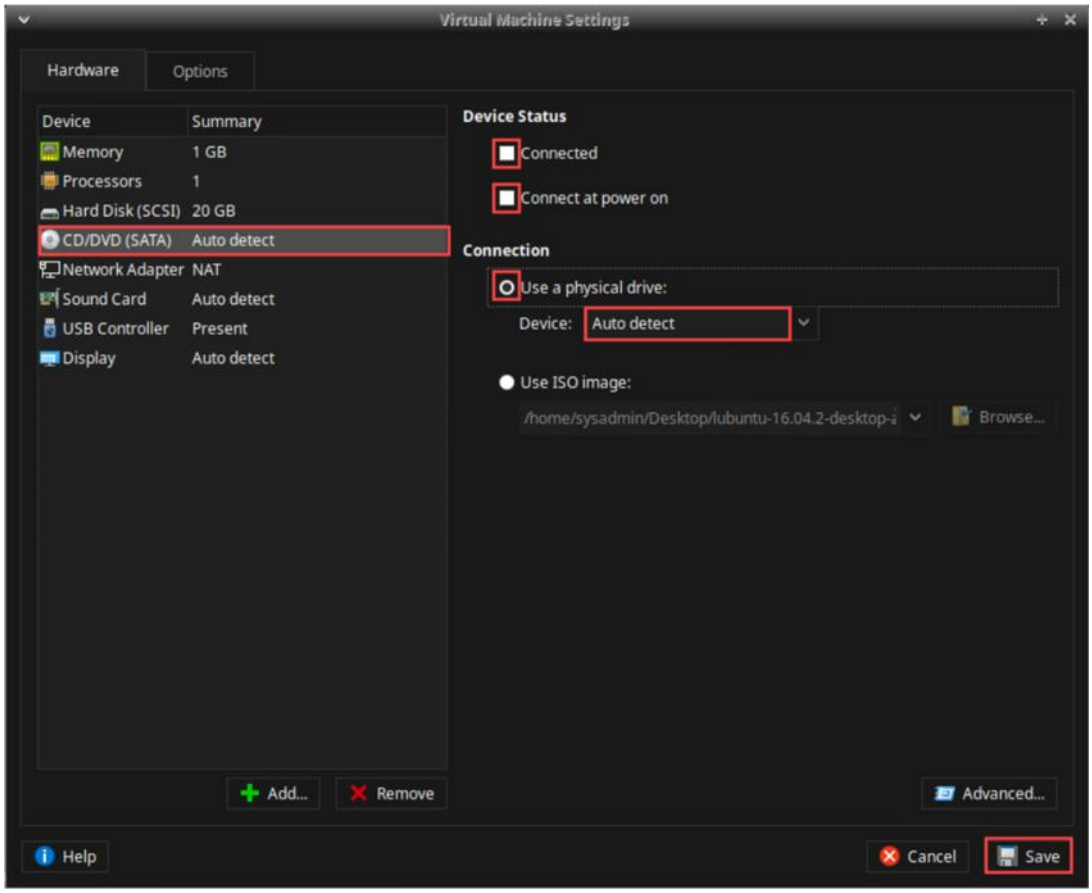
1. After installation is complete, click the **Restart Now** button.
2. Right-click on the **My Lubuntu** tab and navigate to **Removable Devices > CD/DVD (SATA) > Settings**.



If you are unable to retrieve your mouse pointer outside of the VM console, press **CTRL+ALT** at the same time and move the mouse pointer outside of the VM console interface. This will allow you to interact with the *Workstation* system again that is running the *VMware Workstation* application.

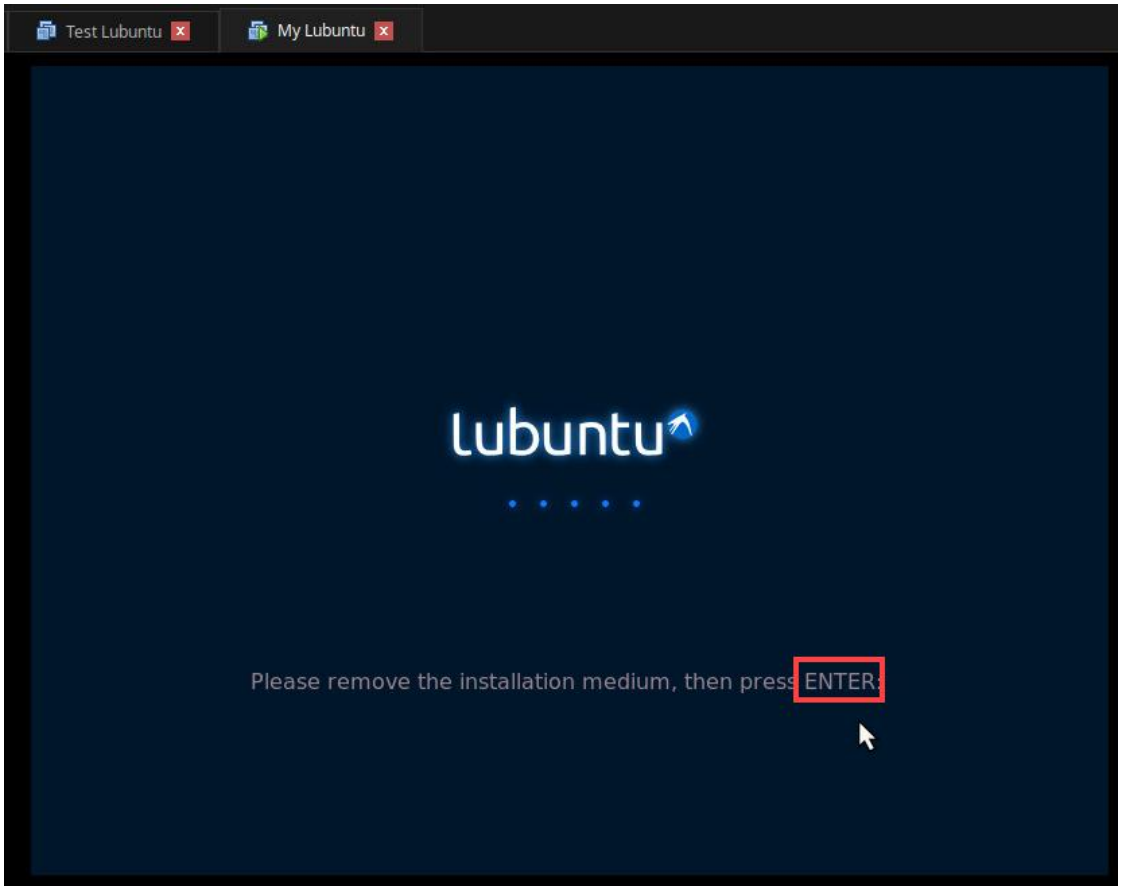
This inconvenience is largely due to not having *VMware Tools* running, at this point in time, on the new virtual machine.

3. On the *Virtual Machine Settings* window, under *Device Status* on the right, verify that both **Connect at Power on** and **Connected** options are **unchecked**. Under *Connection*, select the **Use a physical drive:** option set to **Auto detect**. Click **Save**.



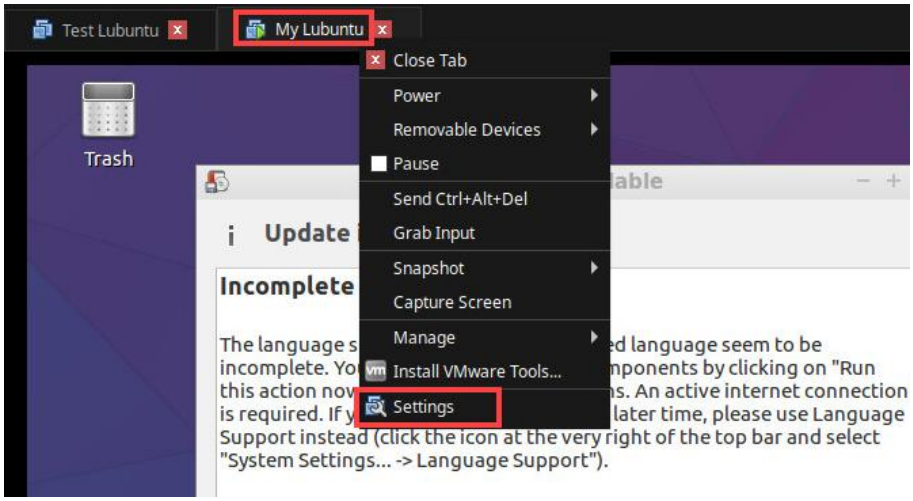
If prompted with a question regarding the unlocking of the CD-ROM, click **Yes** to continue.

4. Change focus to the VM console and click anywhere within the console to interact with the VM. Press the **Enter** key to boot the operating system.

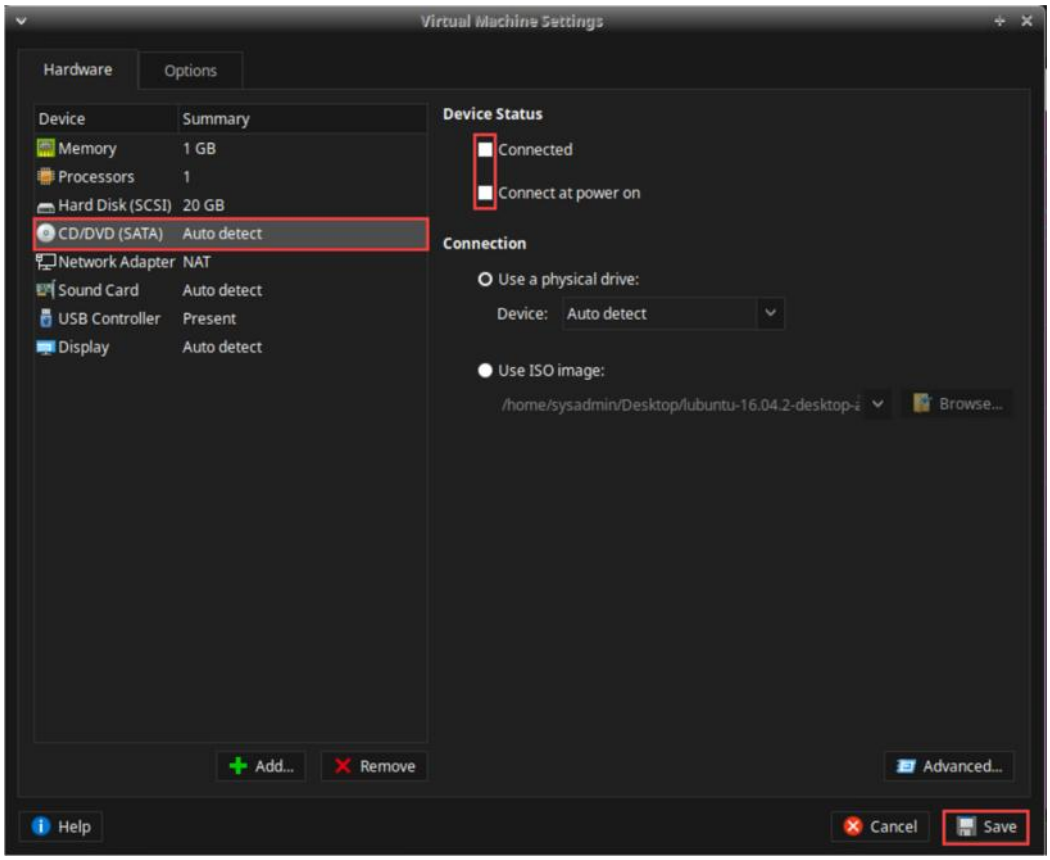


If presented with performance warnings, click **OK** to continue.

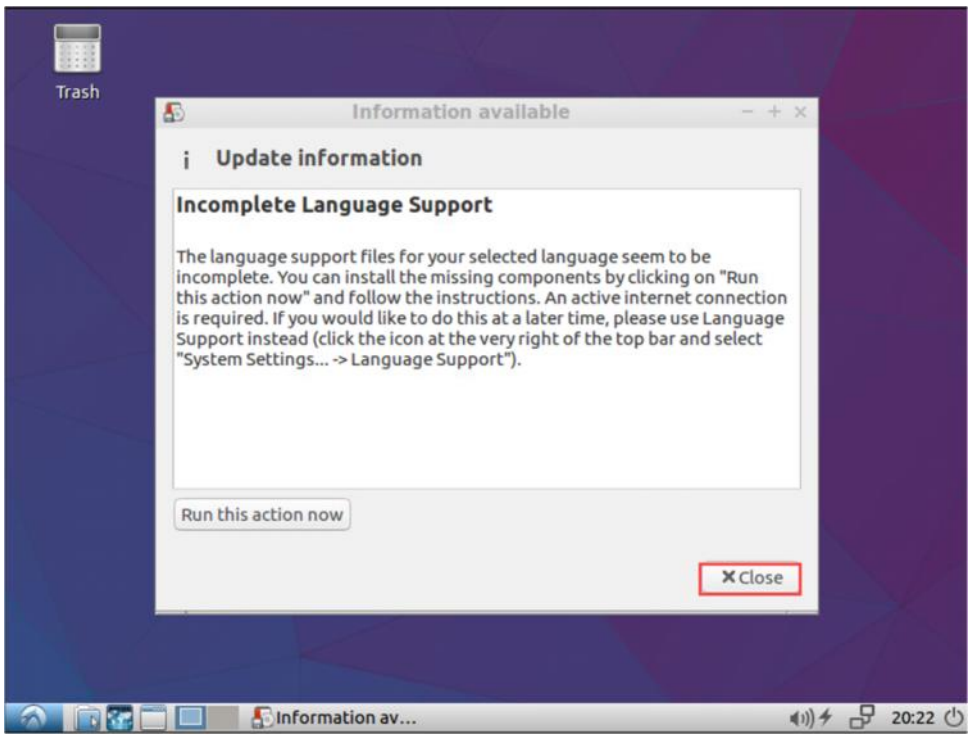
5. Right-click on the **My Lubuntu** tab and select **Settings**.



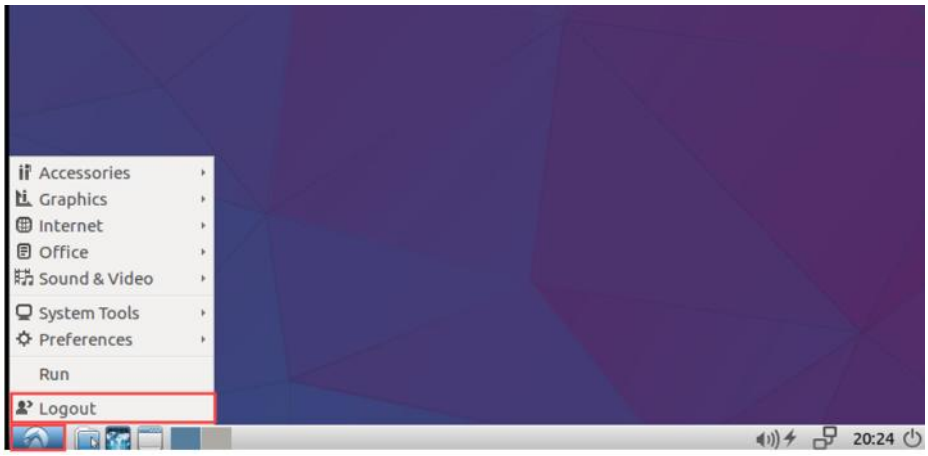
6. On the *Hardware* tab, select **CD/DVD (SATA)**. Under *Device Status* on the right, verify that both **Connect at Power on** and **Connected** options are **unchecked**. Click **Save**.



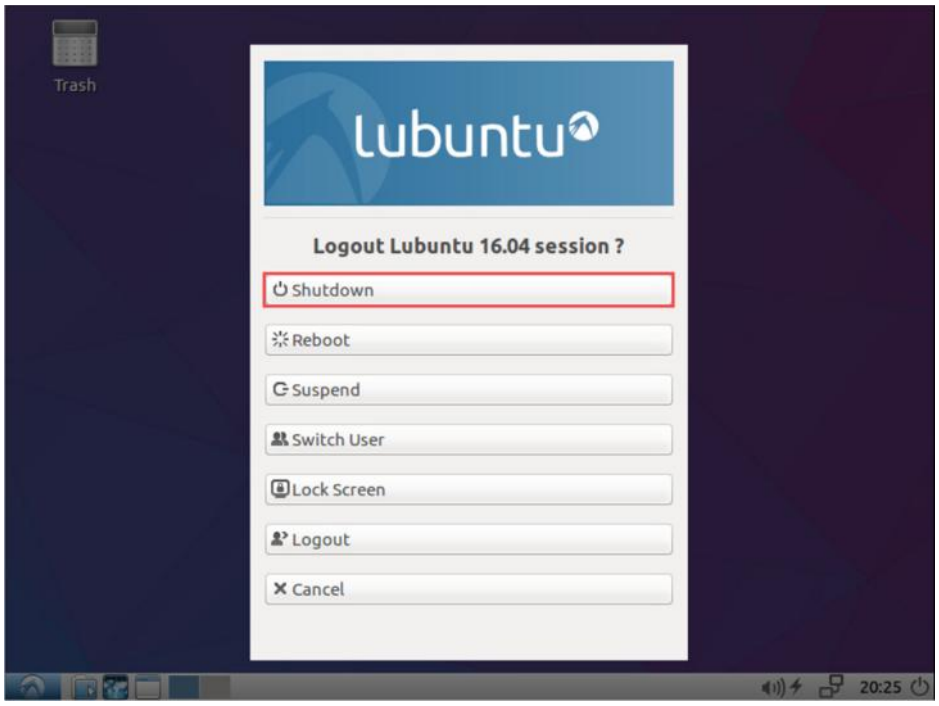
7. When the virtual machine boots, notice the window that appears. Click **Close**.



8. In the virtual machine console, on the bottom toolbar, click the **Start Menu** icon and select **Logout**.

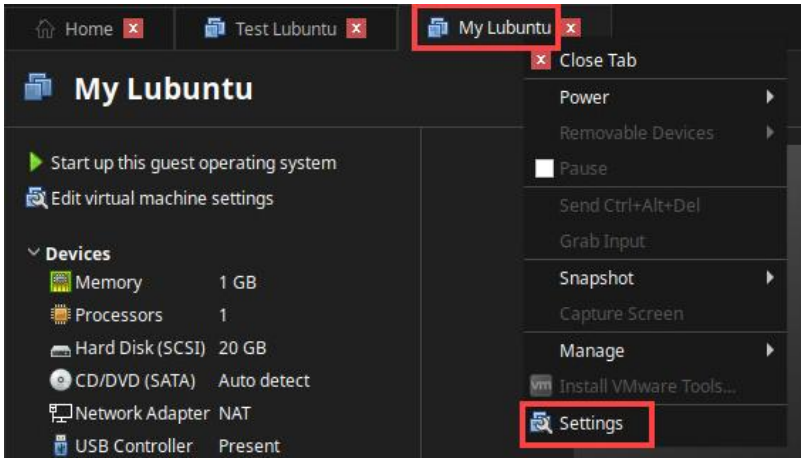


9. Power off the *My Lubuntu* VM by choosing the **Shutdown** option.

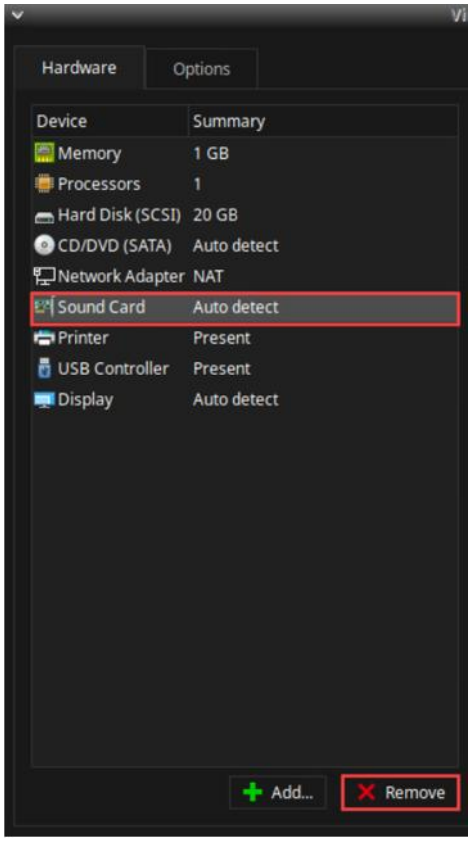


If prompted with a question regarding *VMware Tools*, **check** the checkbox for **Never show this hint again** and click **OK**.

10. Adjust the *My Lubuntu VM* hardware settings. Right-click the **My Lubuntu** tab and select **Settings**.

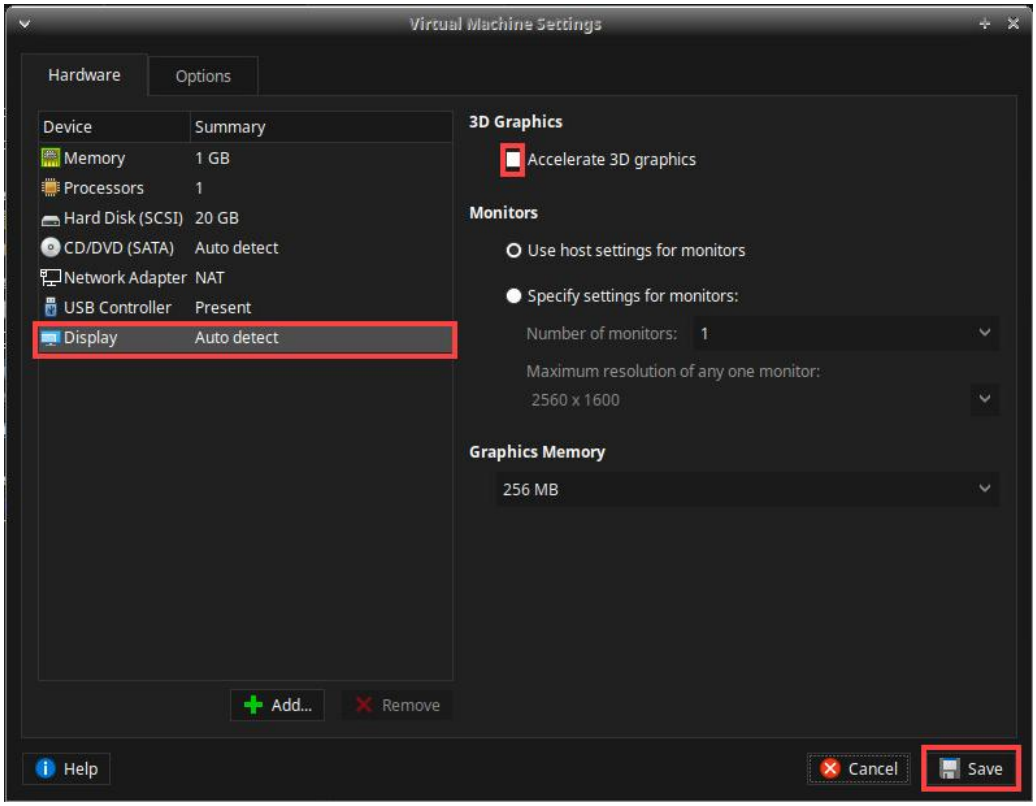


11. Under *Device*, select the **Sound Card**. Click the **Remove** button.



12. Under *Device*, select **USB Controller**. On the right, under *Connections*, change the **USB Compatibility** to **2.0**.

13. Under *Device*, select the **Display**. On the right, under *3D Graphics,* verify that **Accelerate 3D Graphics** is **unchecked**. Click **Save**.



14. Review the *Devices* to verify that the changes have been saved and that the sound card has been removed from the VM's hardware.
15. The lab is now complete; you may end the reservation.

