Ubuntu 22 Server Install

In this tutorial, I will be demonstrating the installation of Ubuntu 22 server in a virtual machine (VM) hosted on Windows 10 Pro. Ubuntu 22 server is a great minimal environment to practice Linux command execution. Please note that no GUI will be available post install.

After completing the Ubuntu 22 installation, we will be installing VirtualBox Guest Additions. **VirtualBox's Guest Additions** provide added functionality such as drag & drop, shared clipboard and shared folders, to name a few. It also allows for guest VM management from the host machine, using the **VBoxManage guestproperty** and **guestcontrol** commands. Although drag & drop and the shared clipboard functionality aren't needed for a server (no GUI), shared folders and the ability to control a guest from the host are two very useful features.

Refer to the prerequisites listed below to access the download locations of the resources needed to complete this tutorial.

Prerequisites

- VirtualBox 6.1.32 can be downloaded **here**
- VirtualBox 6.1.32 Extension Pack can be downloaded **here**
- Ubuntu 22 server ISO image can be downloaded **here**
- Windows 10 feature disabled - Virtual Machine Platform
- Active Internet Connection

For instructions on how to install VirtualBox and extension pack, see my **VirtualBox Install** tutorial **here**.

Please note that although my VirtualBox Install tutorial is for version 6.1.2, the installation of VirtualBox 6.1.32 is almost identical. Also, make sure that you install the same version Extension Pack (6.1.32).

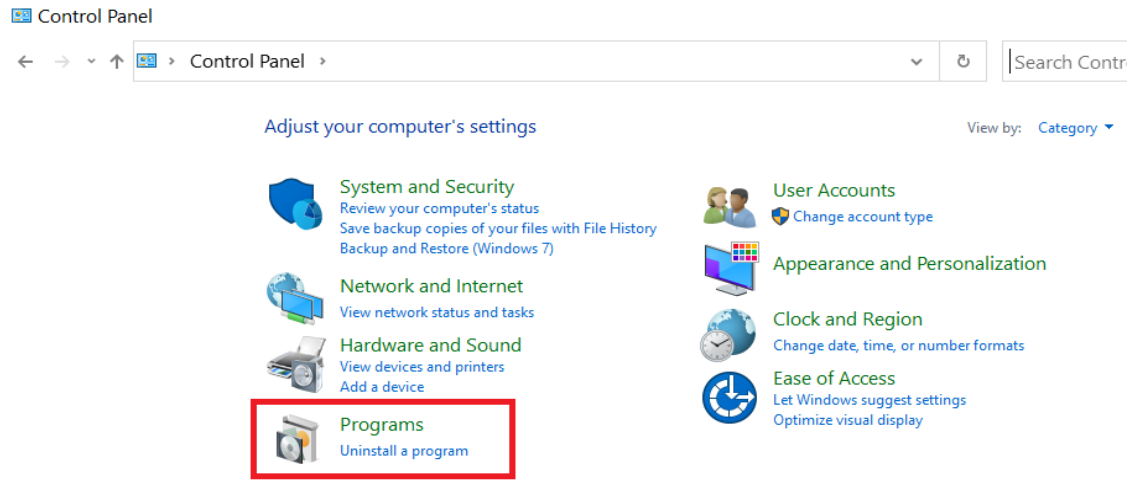
Steps to complete tutorial:

- Disable Windows 10 Feature
- Download Ubuntu 22
- Create virtual machine
    - Name and OS
    - Memory Size
    - Create Hard Disk
    - Attach Ubuntu 22 ISO Image to VM
- Install Ubuntu 22
- Take Snapshot
- Install VirtualBox Guest Additions
- Take Post Guest Additions Snapshot

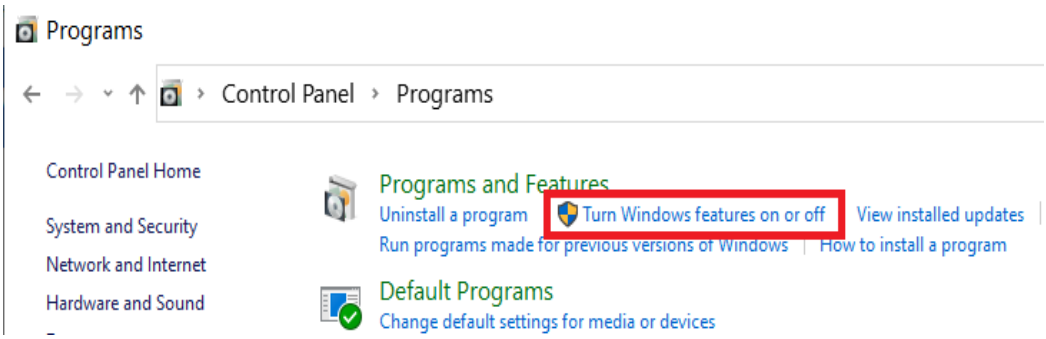
Disable Windows 10 Feature

On my Windows 10 Pro host machine, although I had already turned off the **Hyper-V** feature, I also needed to turn off the **Virtual Machine Platform** feature for my Ubuntu 22 VM to start. Just a note that I was able to run CentOS 7 virtual machines without having to turn off this feature.

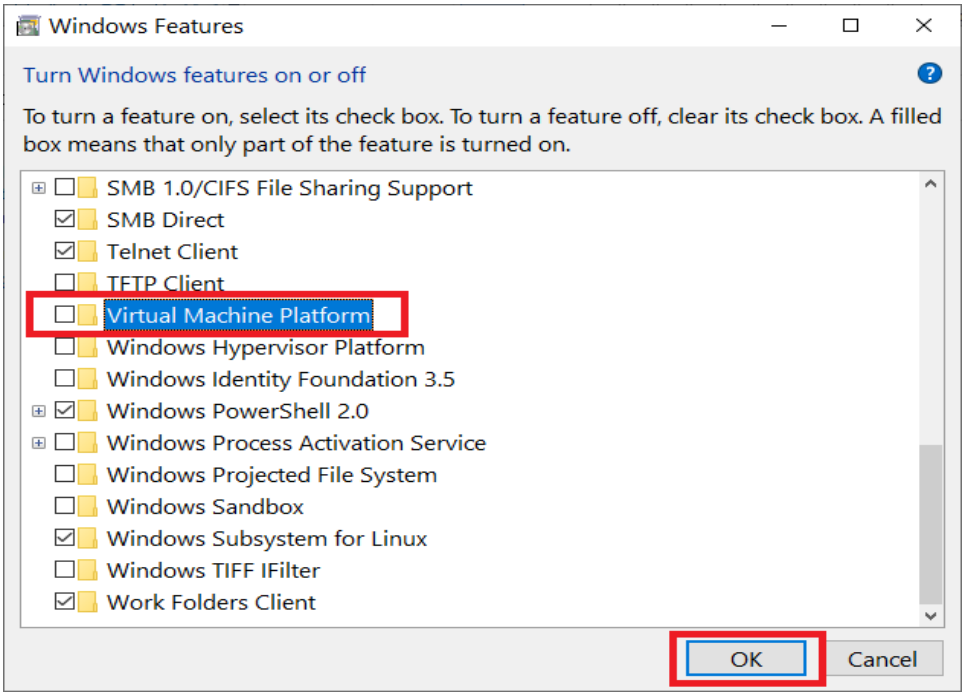
To turn off the feature, first, open your control panel and click **Programs**.



Then, under **Programs and Features**, click **Turn Windows features on or off**

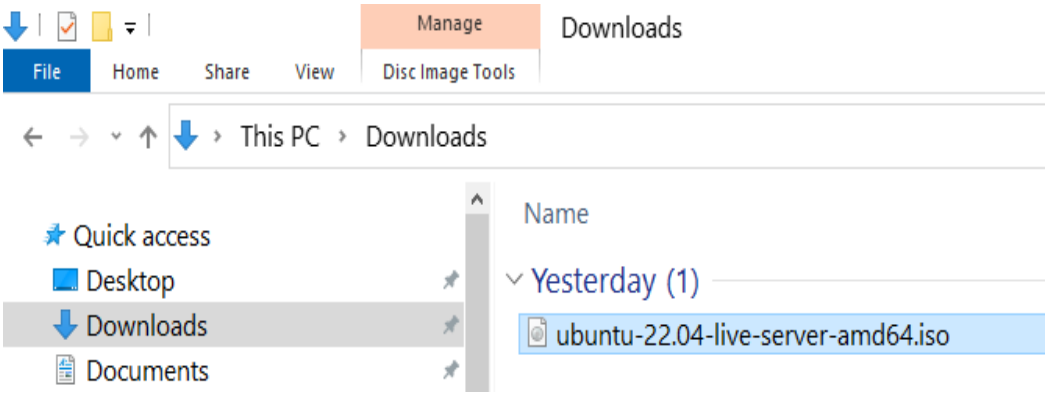


Now, uncheck **Virtual Machine Platform** and click **Ok**. After making this change, you will need to restart your computer.



Download Ubuntu 22

Click the following **link** to download **Ubuntu 22 server ISO image**. It will be downloaded to your local Downloads directory.

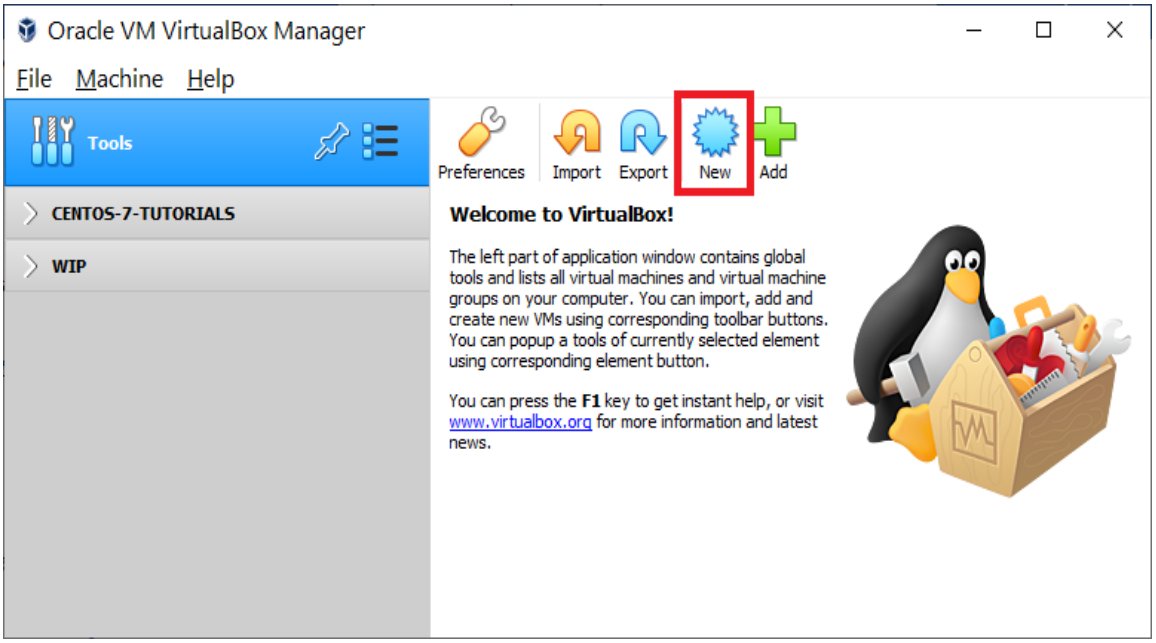


Create virtual machine

Now that we have our Ubuntu 22 server ISO image, we will create a virtual machine to be used for the Ubuntu 22 install.

*Please note that if you have just installed VirtualBox 6.1.32, you will only see "**Tools**" on the left-hand side of the VirtualBox Manager interface. I have already created a few VMs (virtual machines) and grouped them for organizational purposes.*

On the VirtualBox Manager interface, click the **New** button to create a new virtual machine.



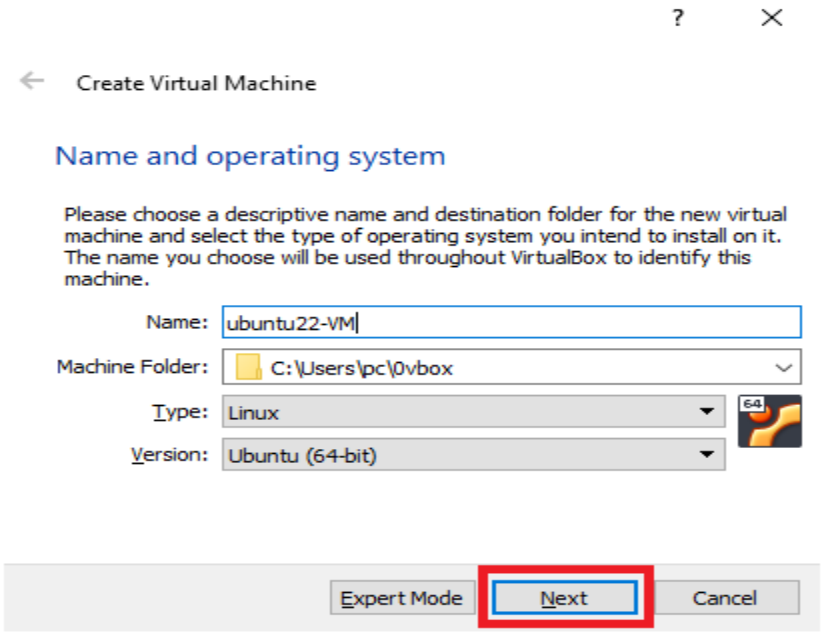
Name and OS

The "**Create Virtual Machine**" screen appears.

- Give your VM a name (I named my VM: **ubuntu22-VM**)
- Choose where you want the machine created on your host system

This will be where the virtual machine files are stored on your host system.

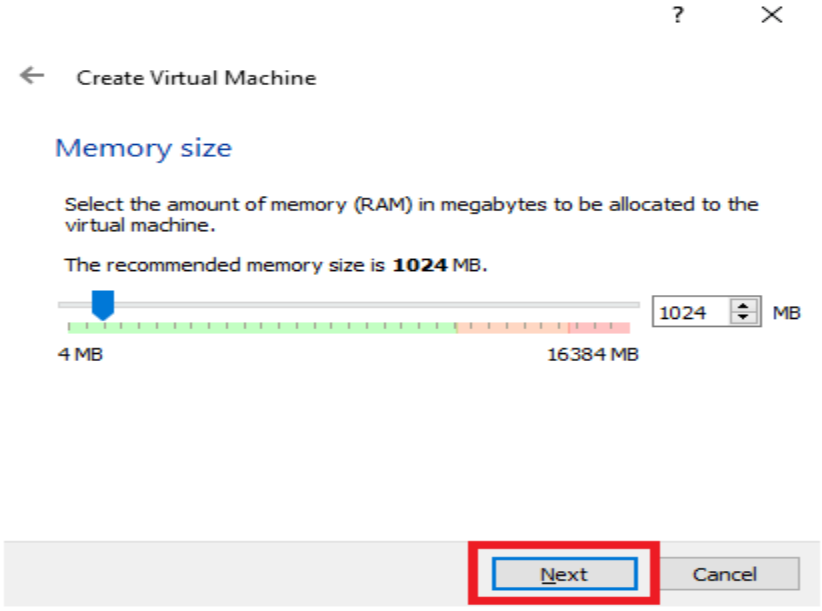
- Ensure Type is set to **Linux** and Version is set to **Ubuntu (64bit)**, click **Next**



Memory Size

After setting the **Name and Operating System** of the virtual machine, the next screen asks for the amount of memory (**RAM**) you wish to allocate to this machine.

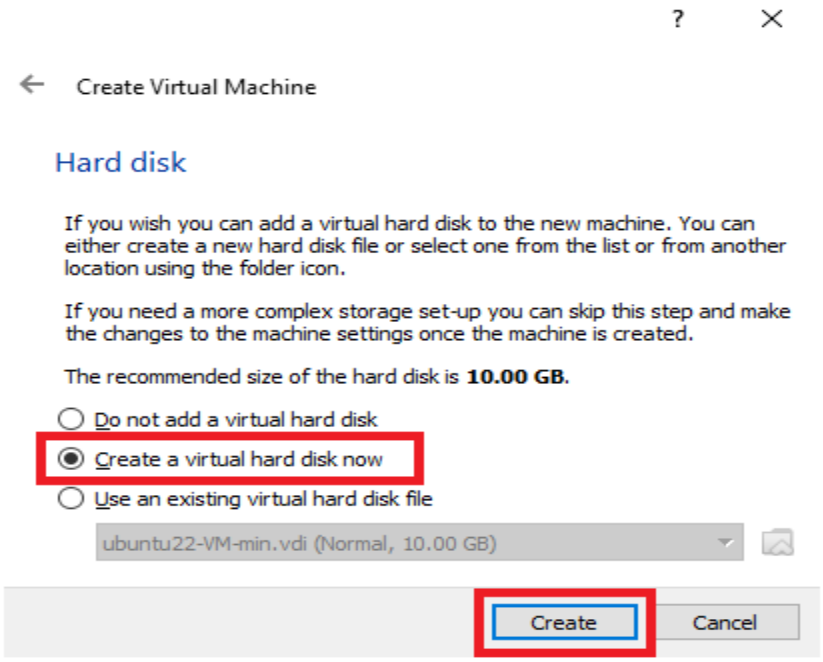
Since we are performing a server install, 1024MB (1GB) of RAM is sufficient. Click **Next**



Create Hard Disk

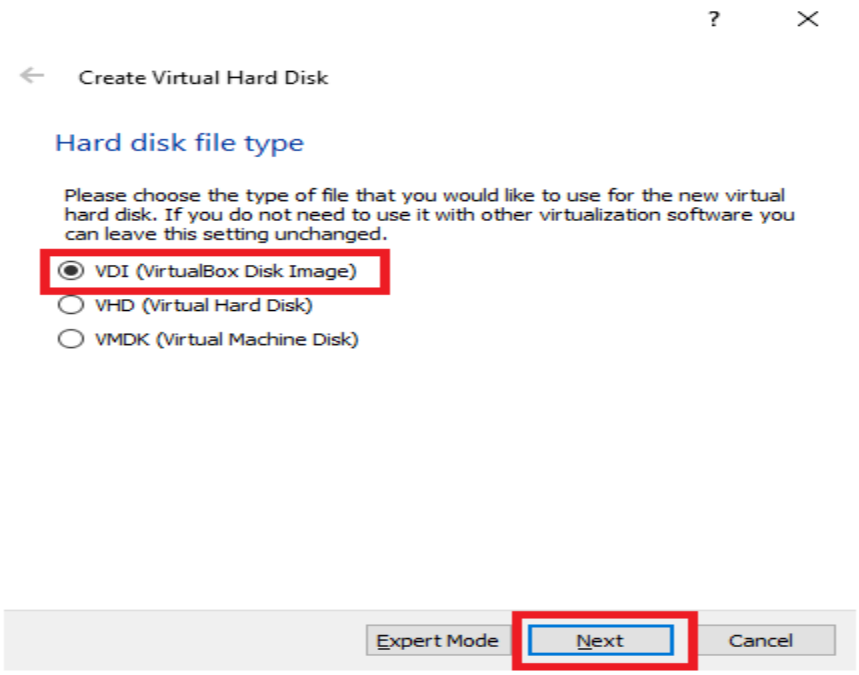
Now we must create a virtual hard disk where the Ubuntu 22 server operating system will be installed.

Note the recommended size (10 GB) of a virtual hard disk for Ubuntu. Click **Create**

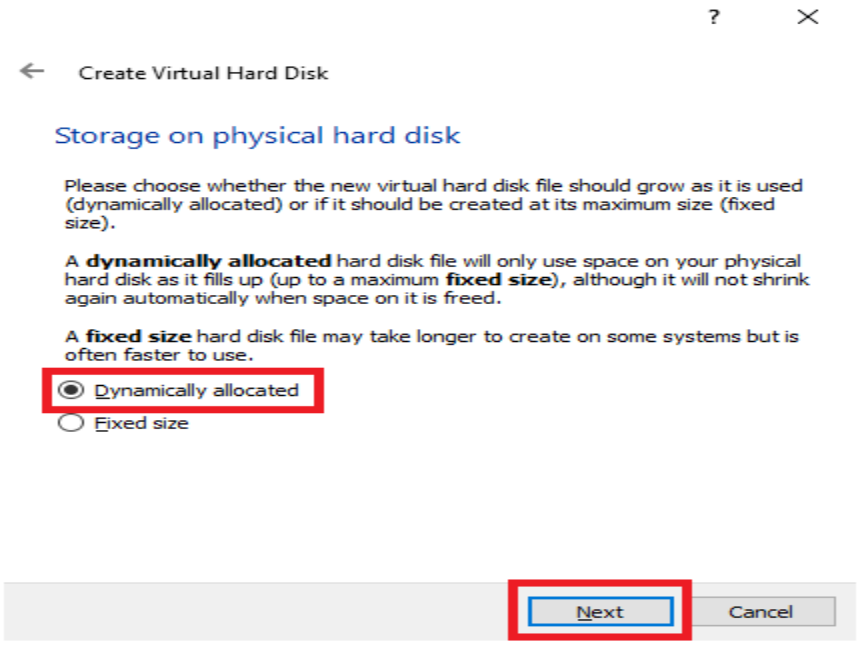


Now, you will have to choose the type of virtual hard disk. Select **VDI** and click **Next**

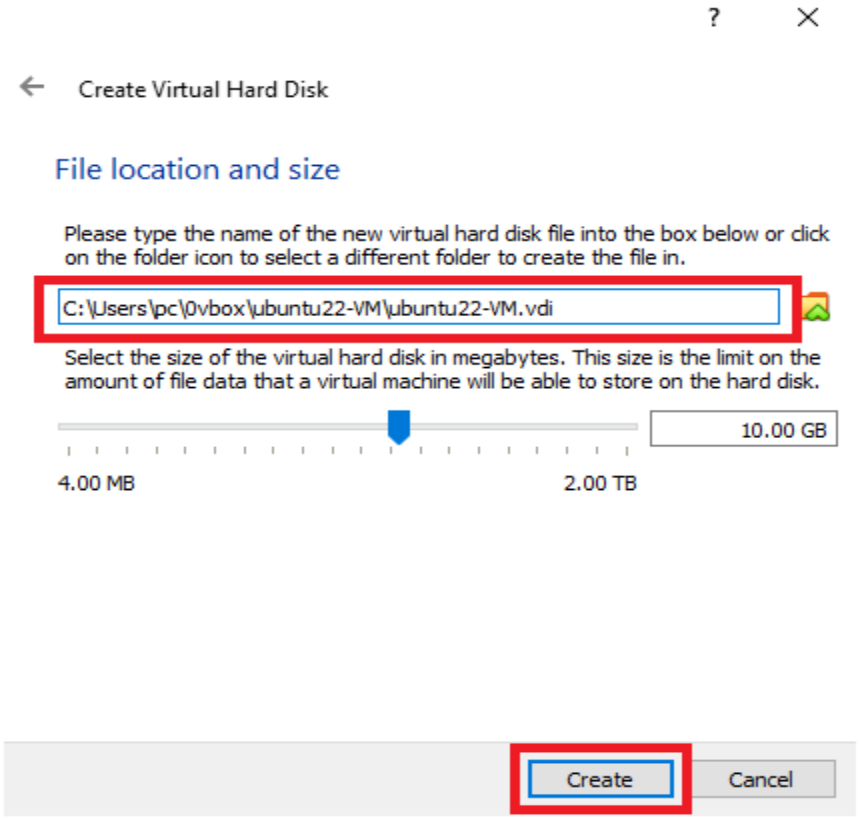
- **VDI**: Oracle VirtualBox container format for guest hard disks.
- **VHD**: Microsoft container format
- **VMDK**: VMWare container format



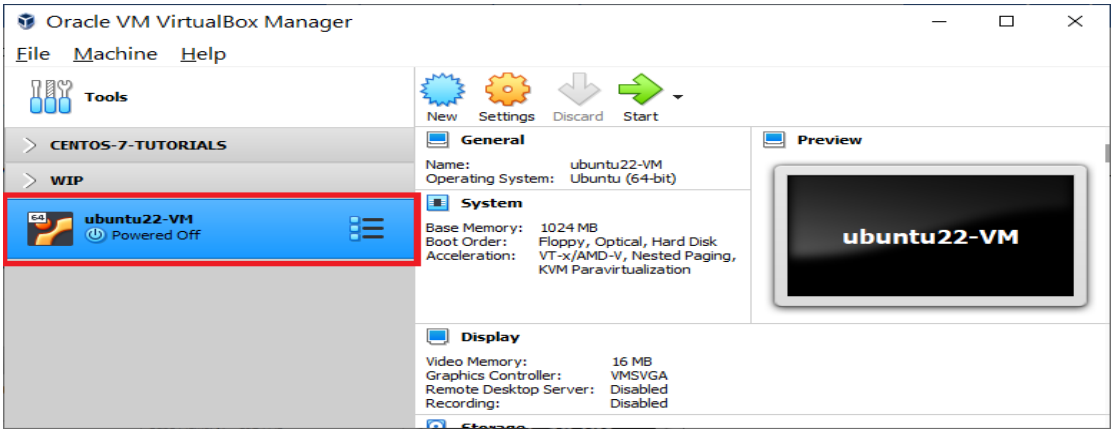
We can now choose whether the virtual hard disk takes up the size we allocate as needed (Dynamically allocated) or immediately (Fixed). To save space on my host system, I chose **Dynamically allocated** and clicked **Next**



Here we can set the virtual hard disk size. Note its name and storage location (**yours will be different than mine**). Again, since we're performing a server install, 10.00GB is enough. Click **Create**

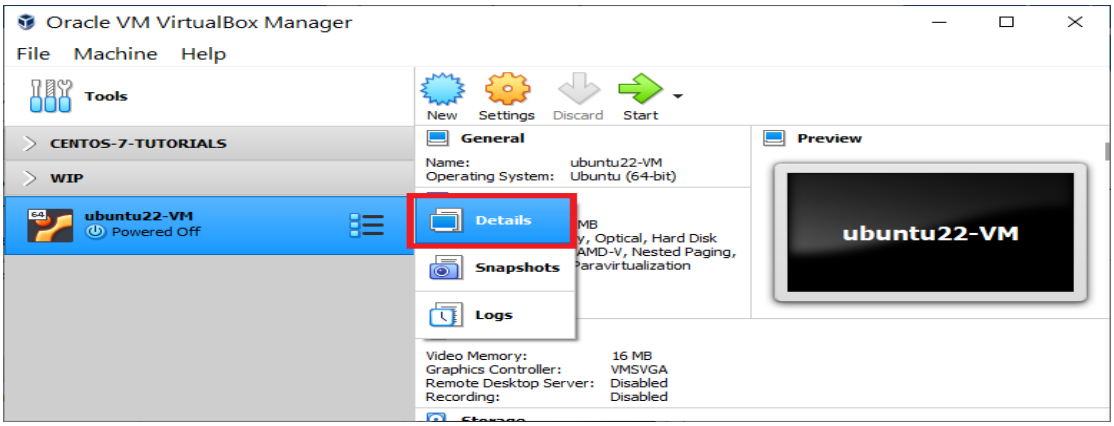


As you can see below, the **ubuntu22-VM** virtual machine was created successfully.



After creating my virtual machine, I was brought to the VirtualBox Manager interface's **Details** view. The **Details** view will provide you with a listing of all the configurable components of the VM.

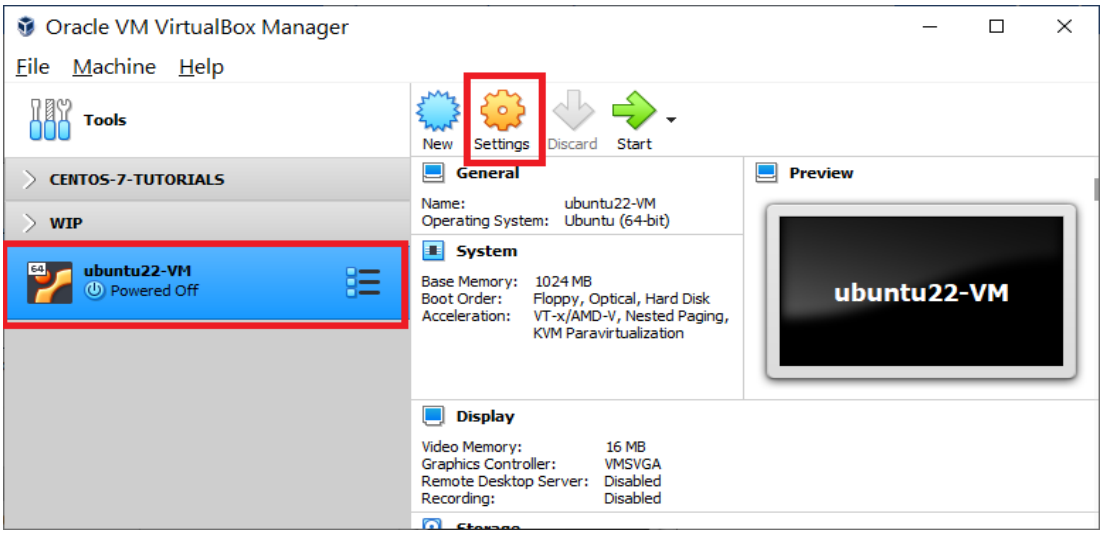
If you are not in the **Details** view, click the list icon next to the virtual machine name, and select **Details**.



Attach Ubuntu 22 ISO Image to VM

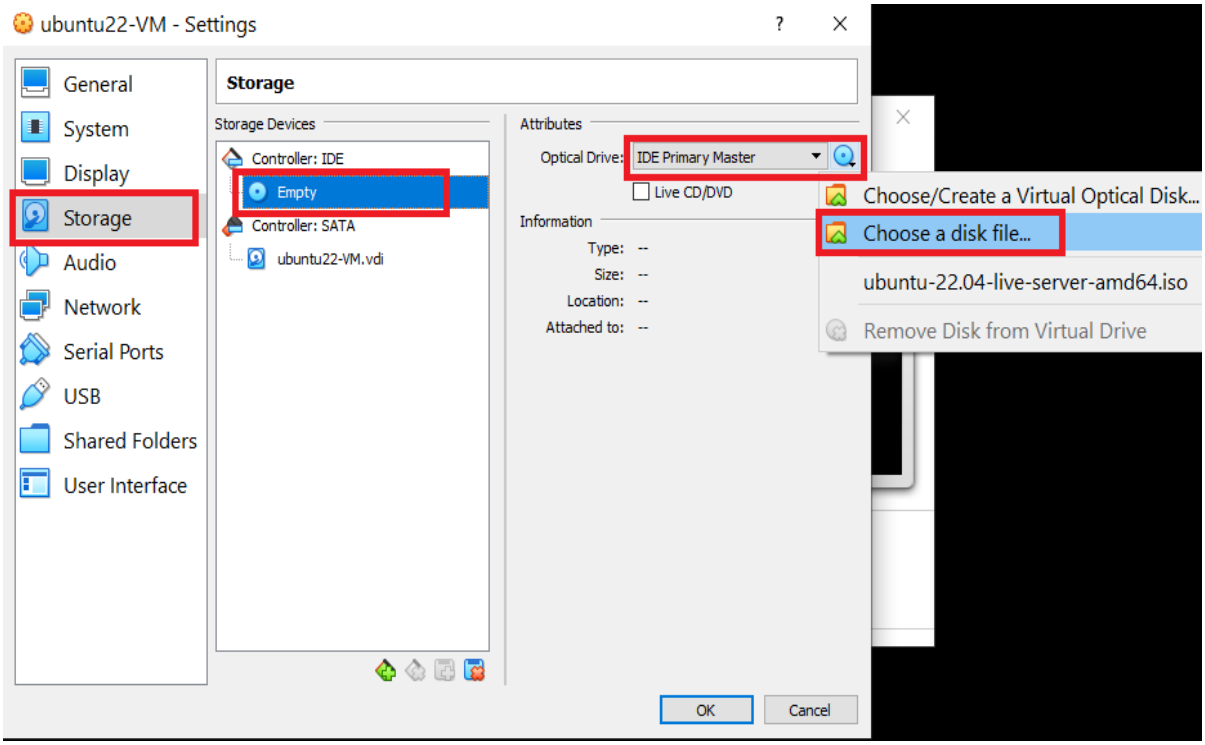
Now we will configure the VM's optical drive with the Ubuntu 22 server ISO image.

On the VirtualBox Manager interface, ensure your newly created VM is selected and click **Settings**.

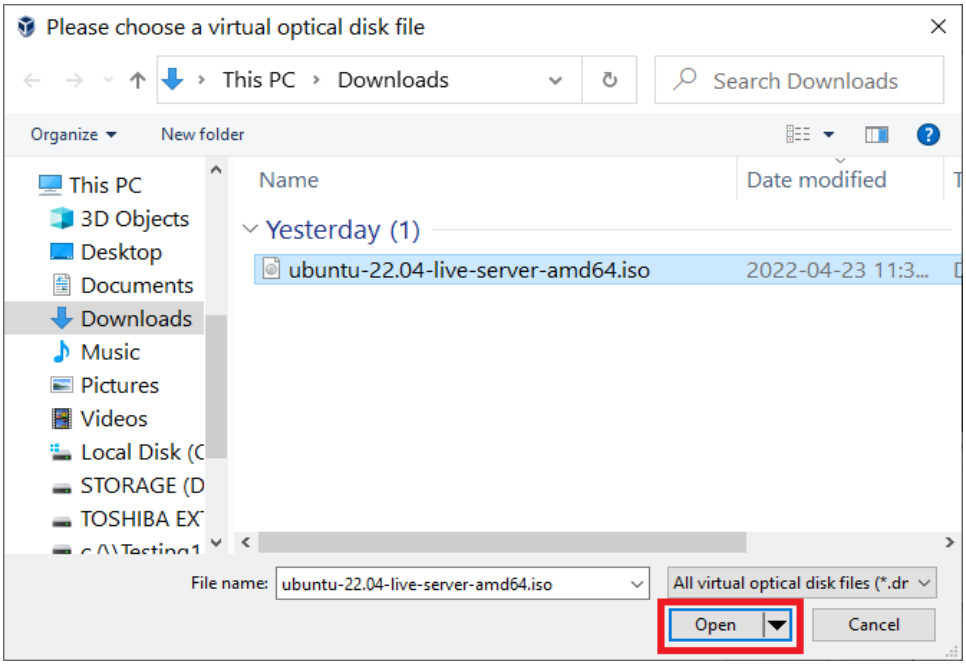


In the VM Settings dialog box, on the left, select **Storage**. The virtual optical drive is **Empty**.

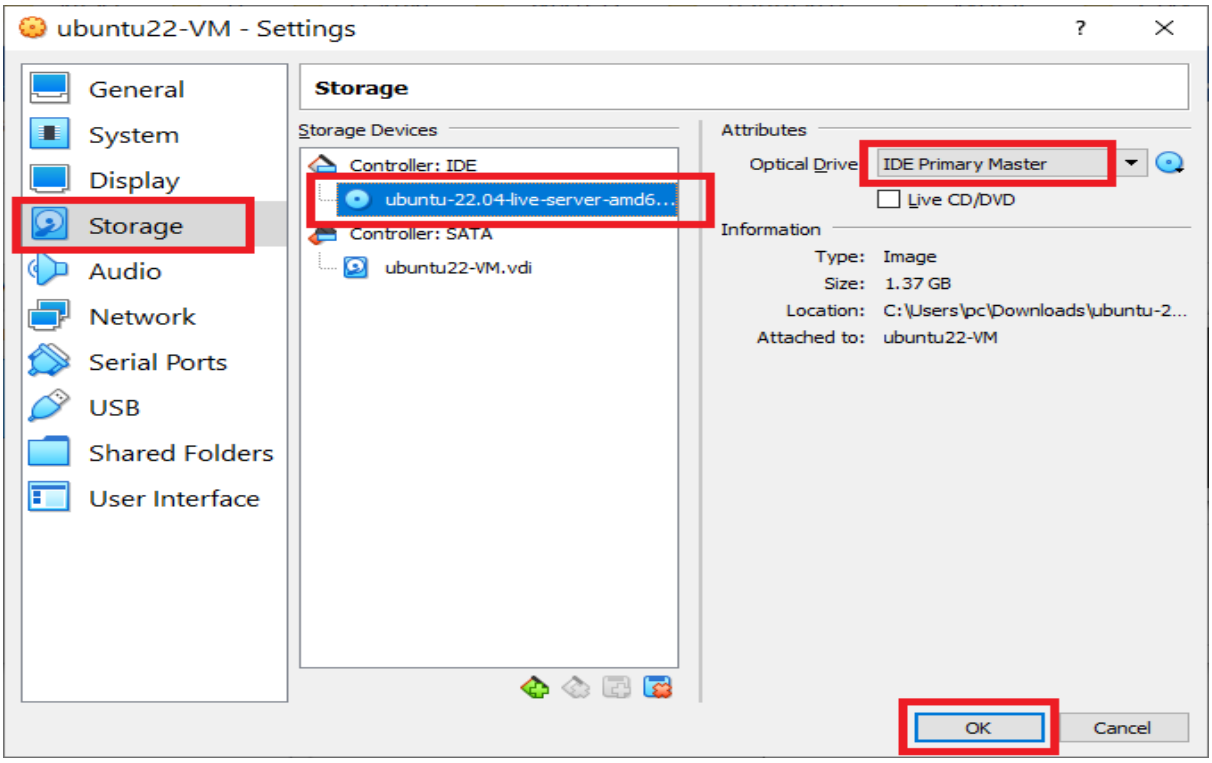
Ensure the **Empty** optical drive is selected. Then, on the right, ensure **IDE Primary Master** is selected. Then, click the optical drive icon and click **Choose a disk file** to select the Ubuntu 22 server ISO image.



Browse to where you've downloaded the Ubuntu 22 server ISO image, and click **Open**

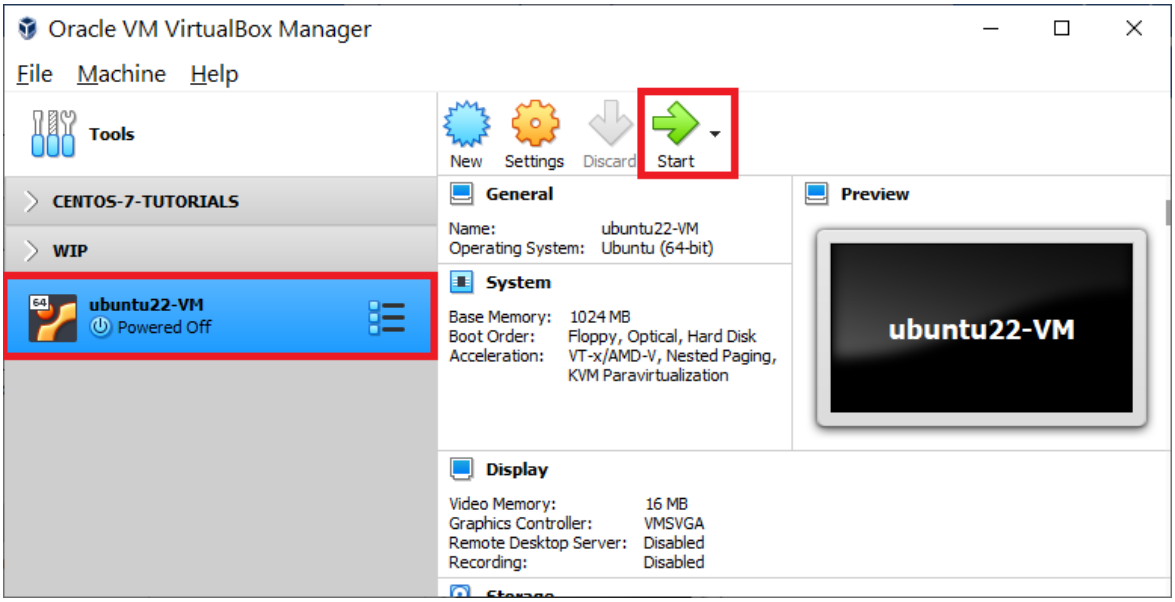


By attaching the Ubuntu 22 server ISO image to the virtual machine's optical drive, our installation media is set and we are now ready to start our new VM (virtual machine) and install Ubuntu 22. Click **Ok**

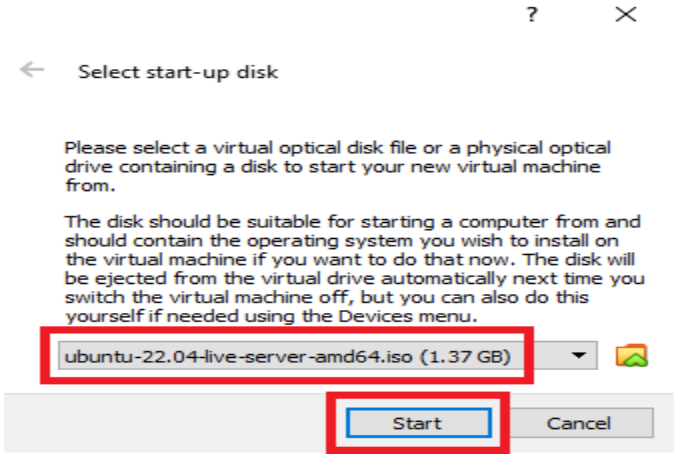


Install Ubuntu 22

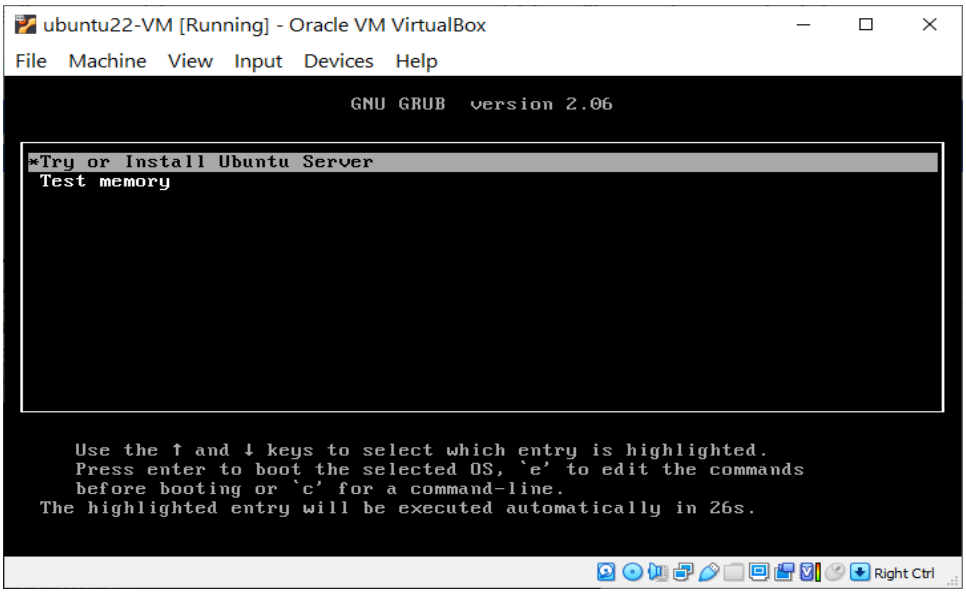
On the VirtualBox Manager Interface, ensure your new VM is selected and click **Start**



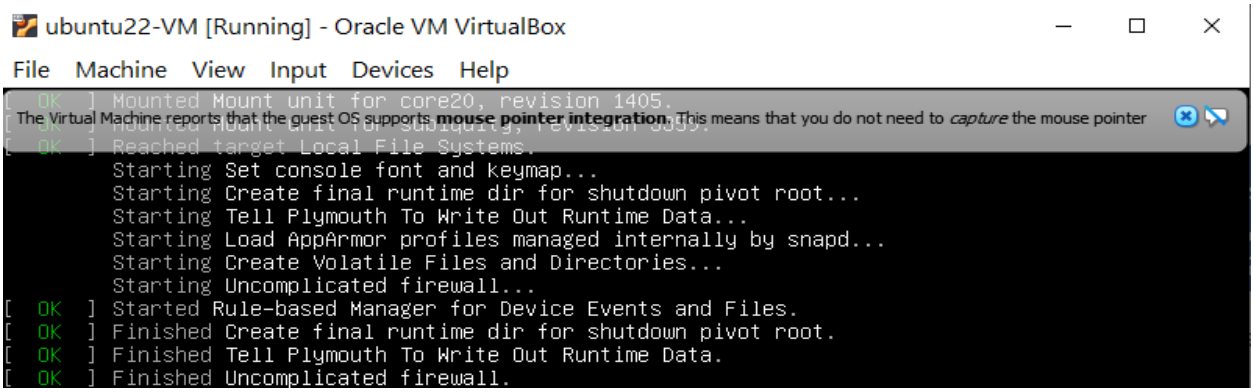
You will notice that the Ubuntu 22 server ISO that we attached to the virtual machine is in the optical drive. Click **Start** to proceed.



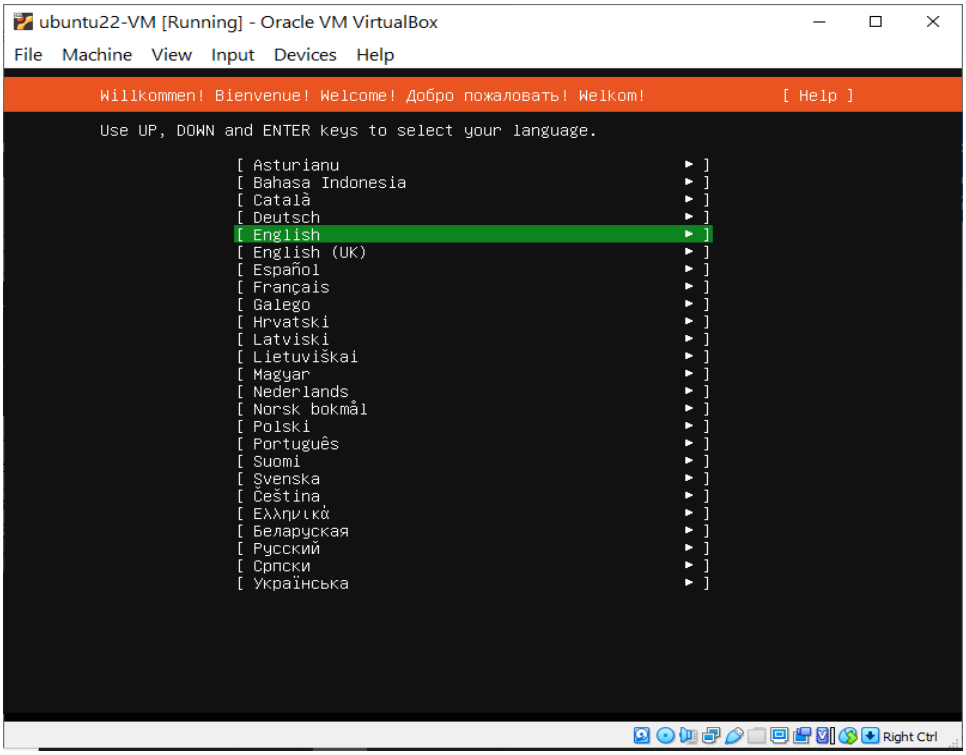
At the initial screen ensure that **Try or install Ubuntu Server** is selected and hit **Enter** to continue.



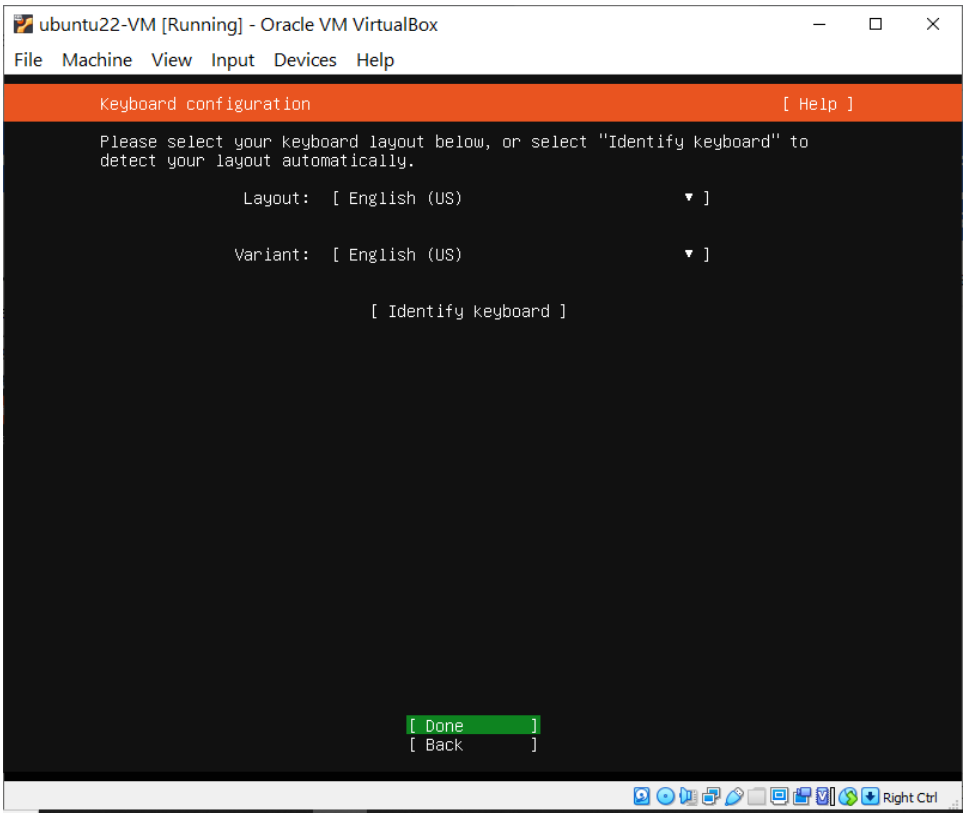
The virtual machine boots up. ***NOTE**: Feel free to close VirtualBox notifications at the top of the screen*.



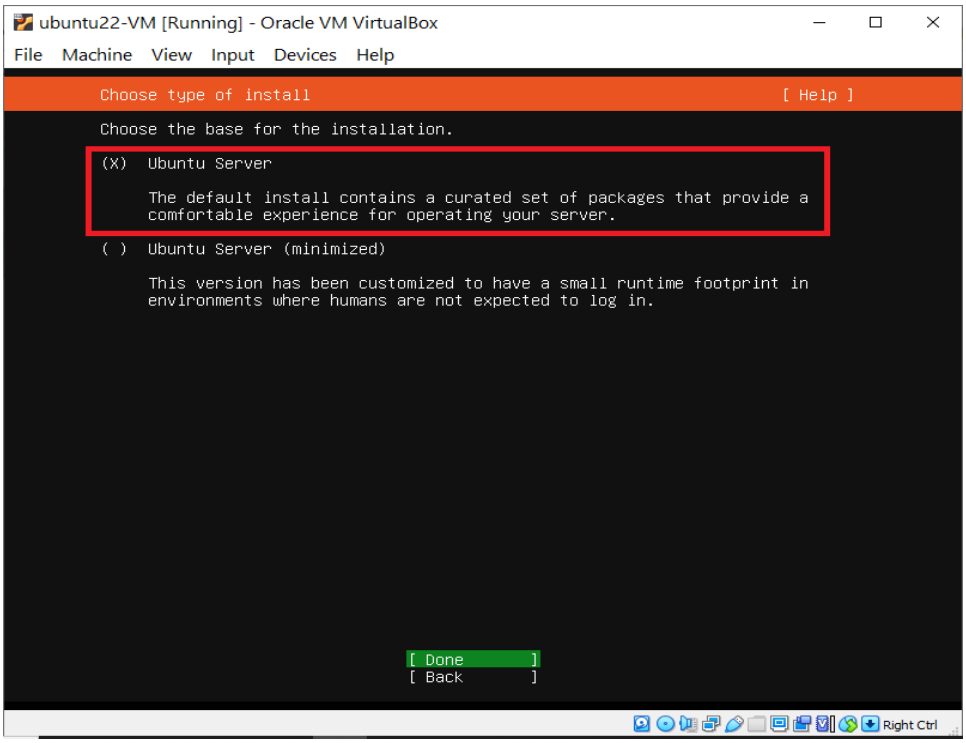
Select your desired language and hit **Enter** on your keyboard to continue



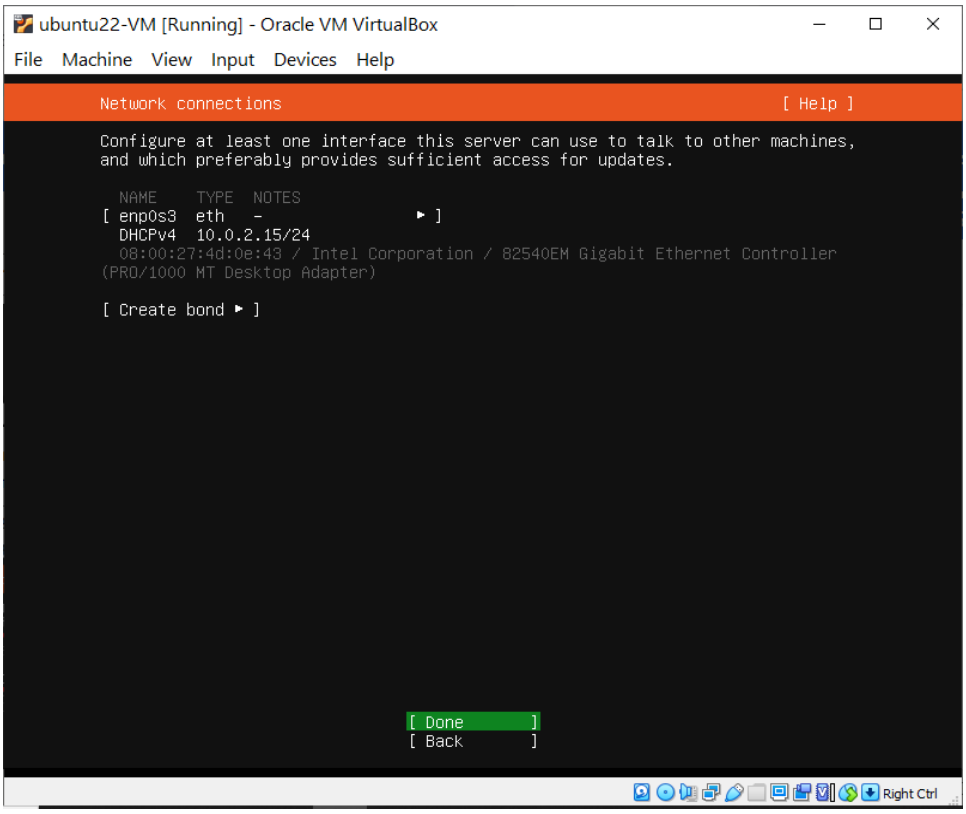
Ensure the correct keyboard is selected and that **Done** is highlighted at the bottom of the screen. Then, hit **Enter** to continue.



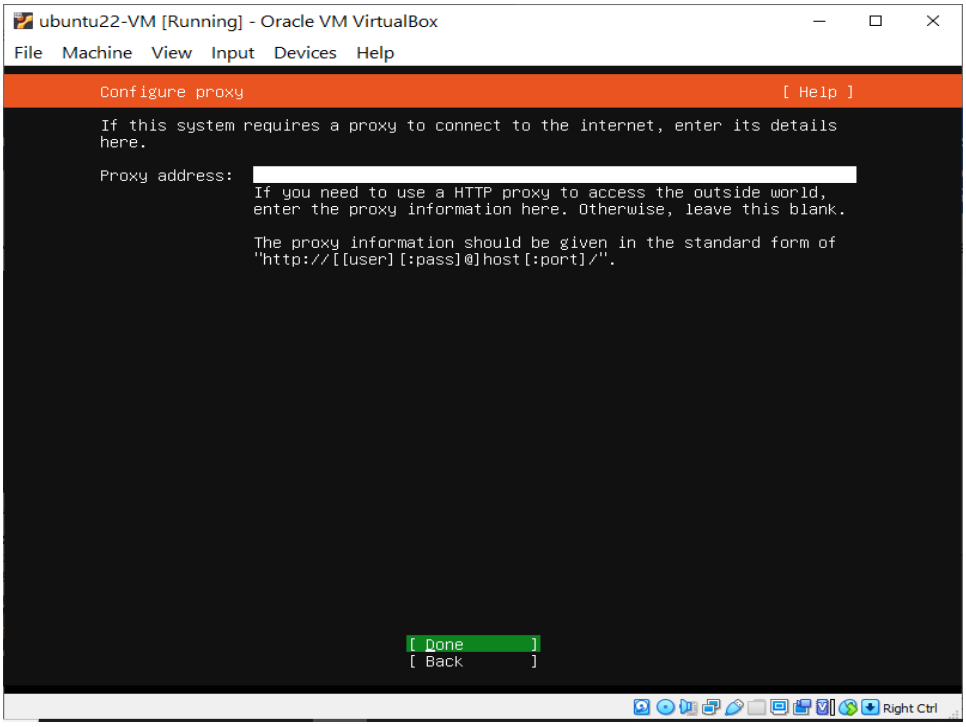
On the **Choose type of install** screen, select **Ubuntu Server** and ensure that **Done** is highlighted at the bottom of the screen. Then, hit **Enter** to continue.



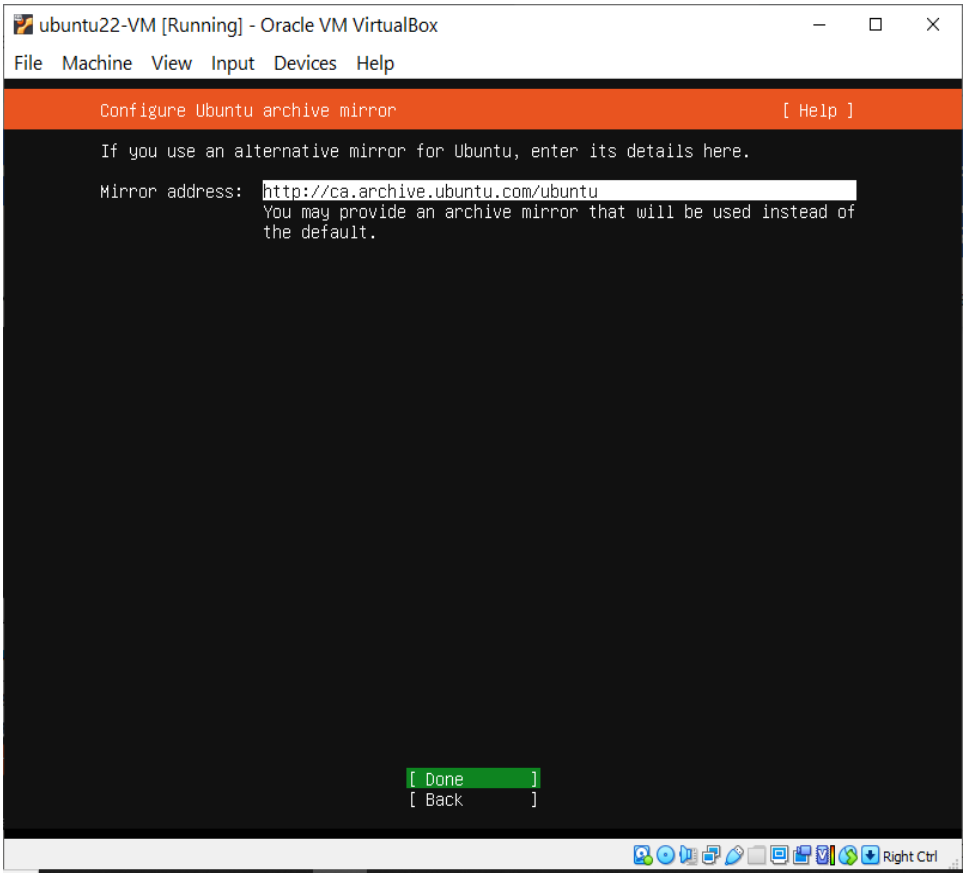
On the **Network Connections** screen, ensure a network adapter is configured with the default settings (**enp0s3** using **DHCP**). Then, hit **Enter** to continue.



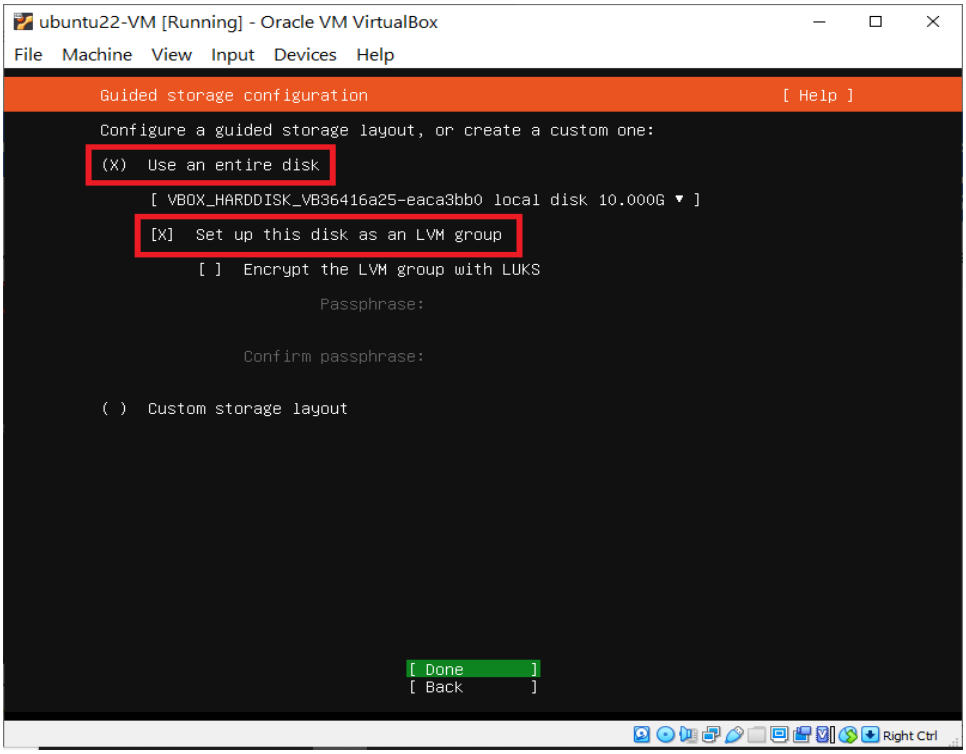
On the **Configure Proxy** screen, leave it blank and hit **Enter** to continue.



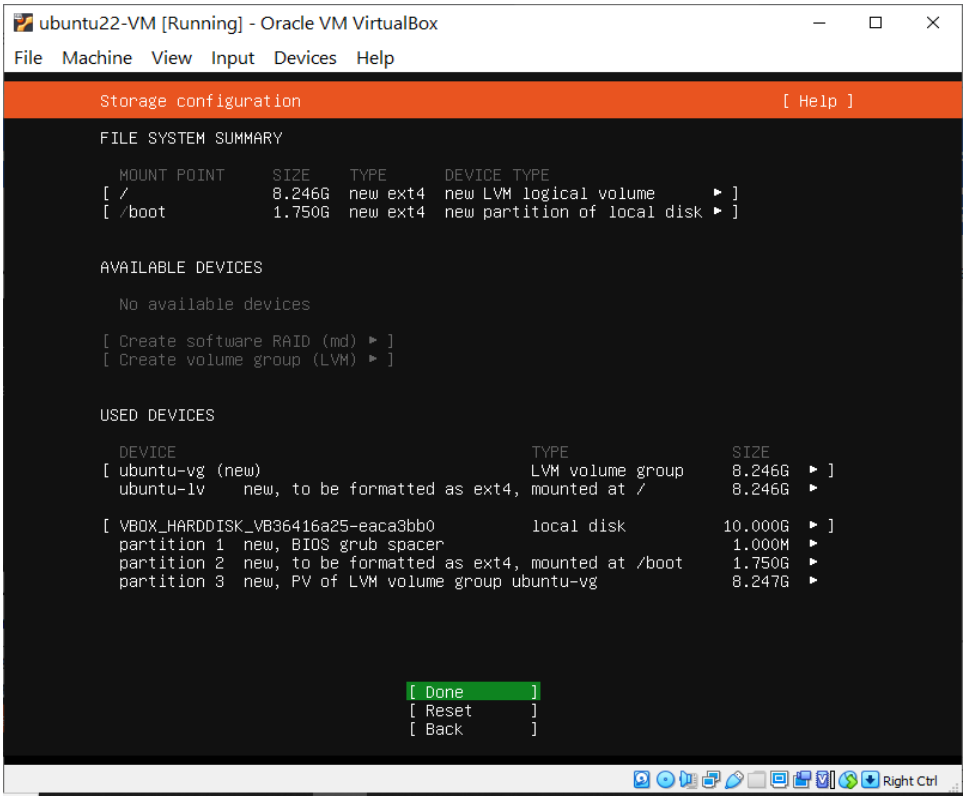
On the Configure Ubuntu archive mirror screen, leave the default and hit **Enter** to continue.



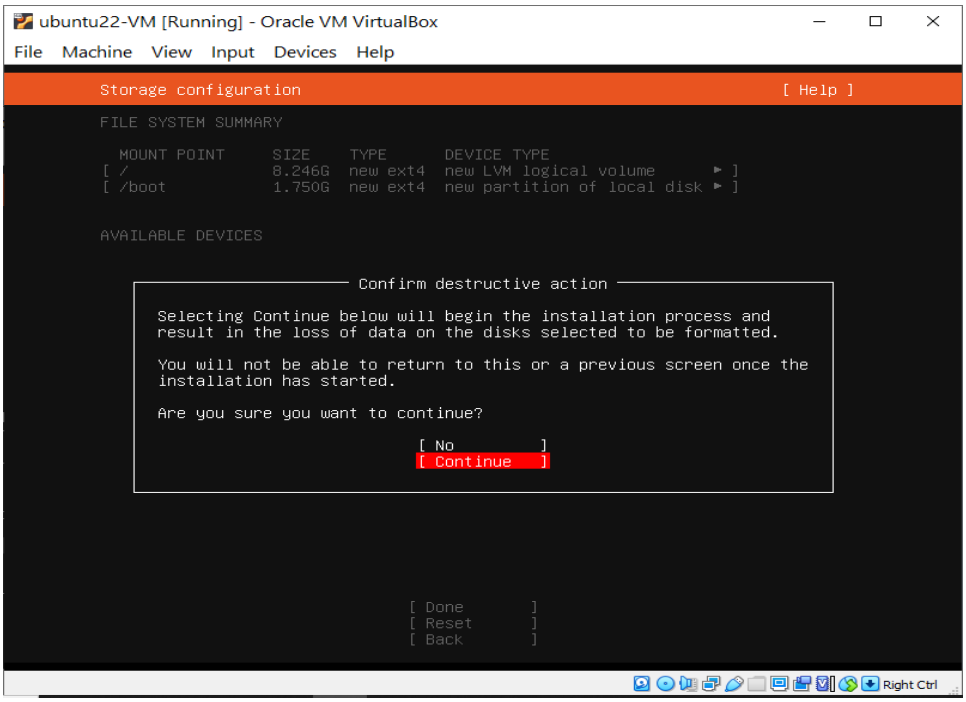
On the **Guided storage configuration** screen, leave the defaults (**Use entire disk** & **LVM**) and ensure that **Done** is highlighted at the bottom of the screen. Then, hit **Enter** to continue.



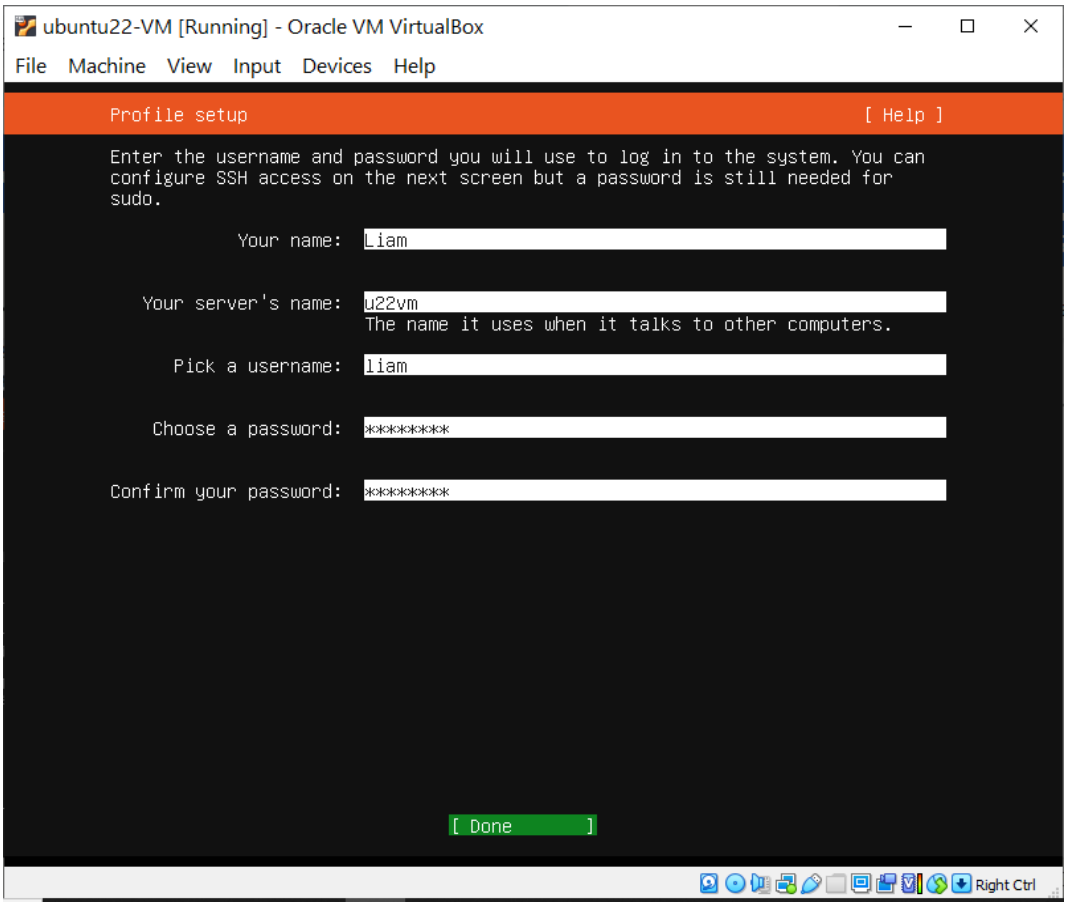
On the **Storage configuration** screen, we are presented with the hard disk configuration scheme. Ensure that **Done** is highlighted at the bottom of the screen and hit **Enter** to continue.



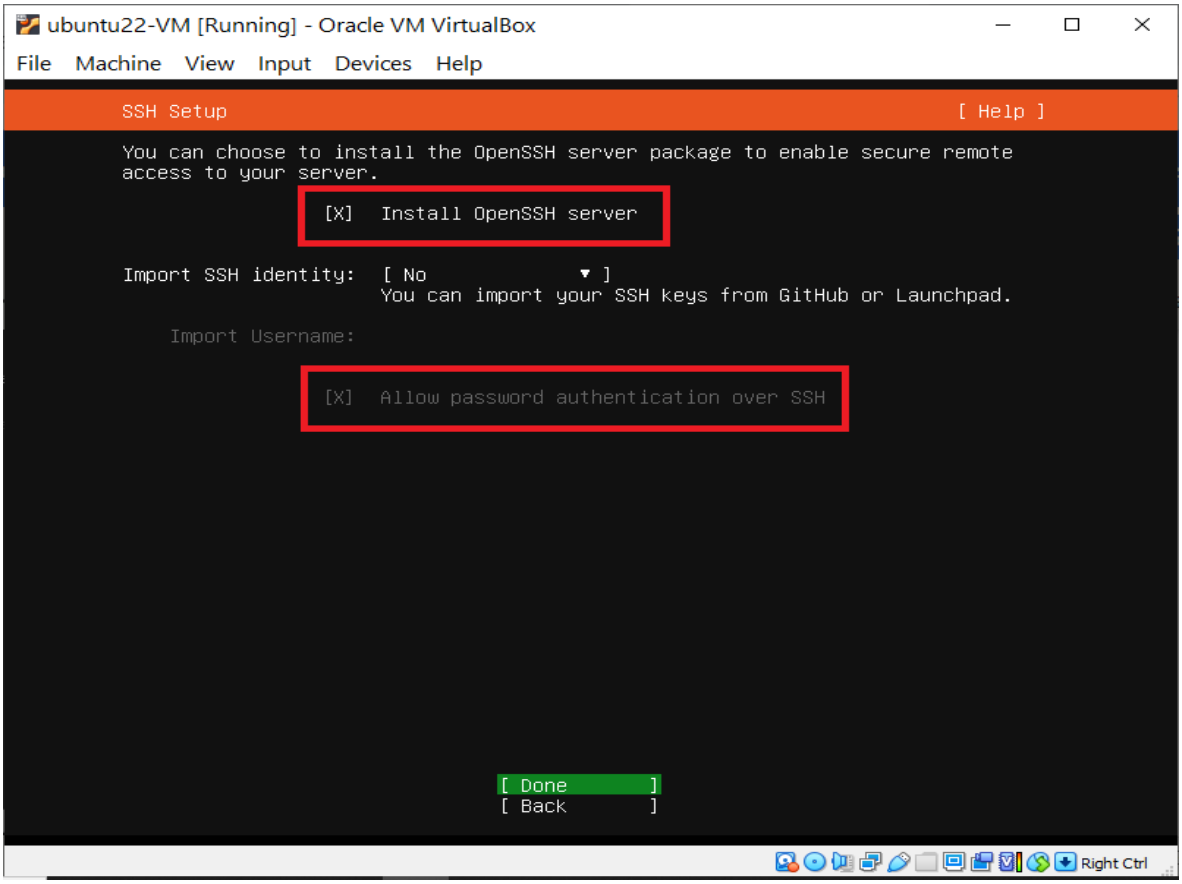
On the **Confirm destructive action** screen, ensure **Continue** is highlighted and hit **Enter** to continue.



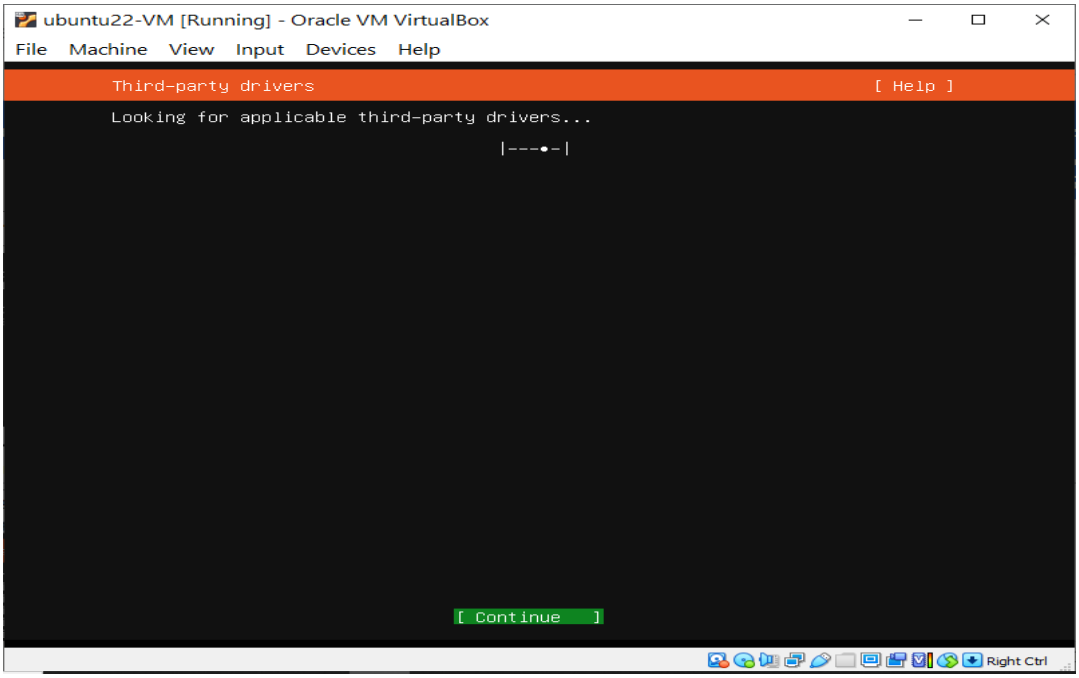
On the Profile setup screen, enter your details and ensure that **Done** is highlighted. Then, hit **Enter**



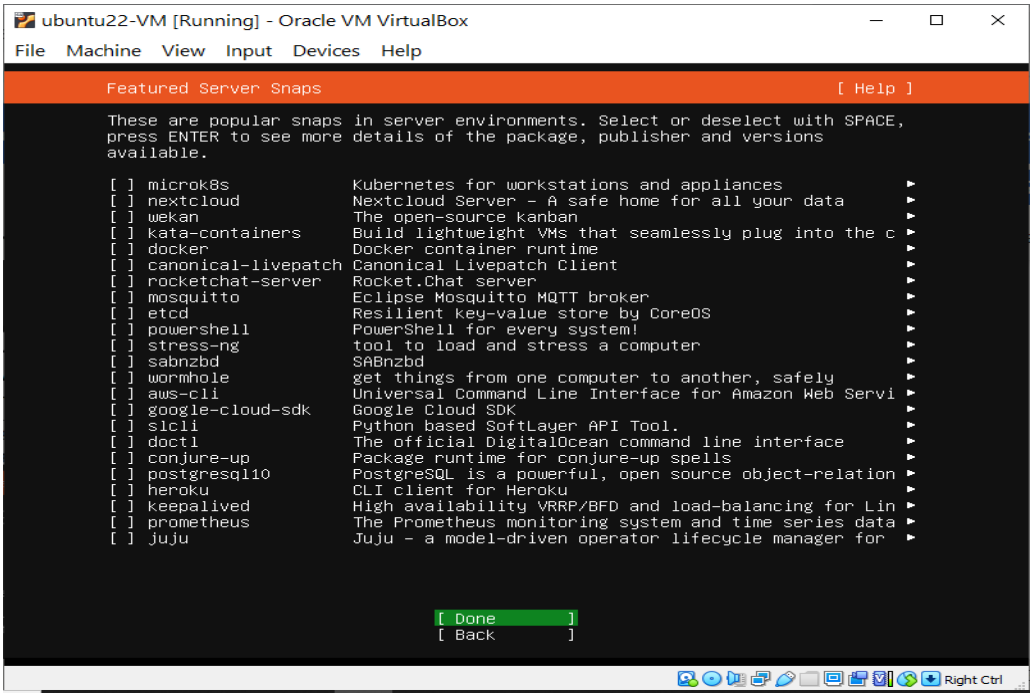
On the SSH Setup screen, ensure that both **Install OpenSSH server** and the greyed out **Allow password authentication over SSH** are checked. Also, ensure that **Done** is highlighted and hit **Enter** to continue



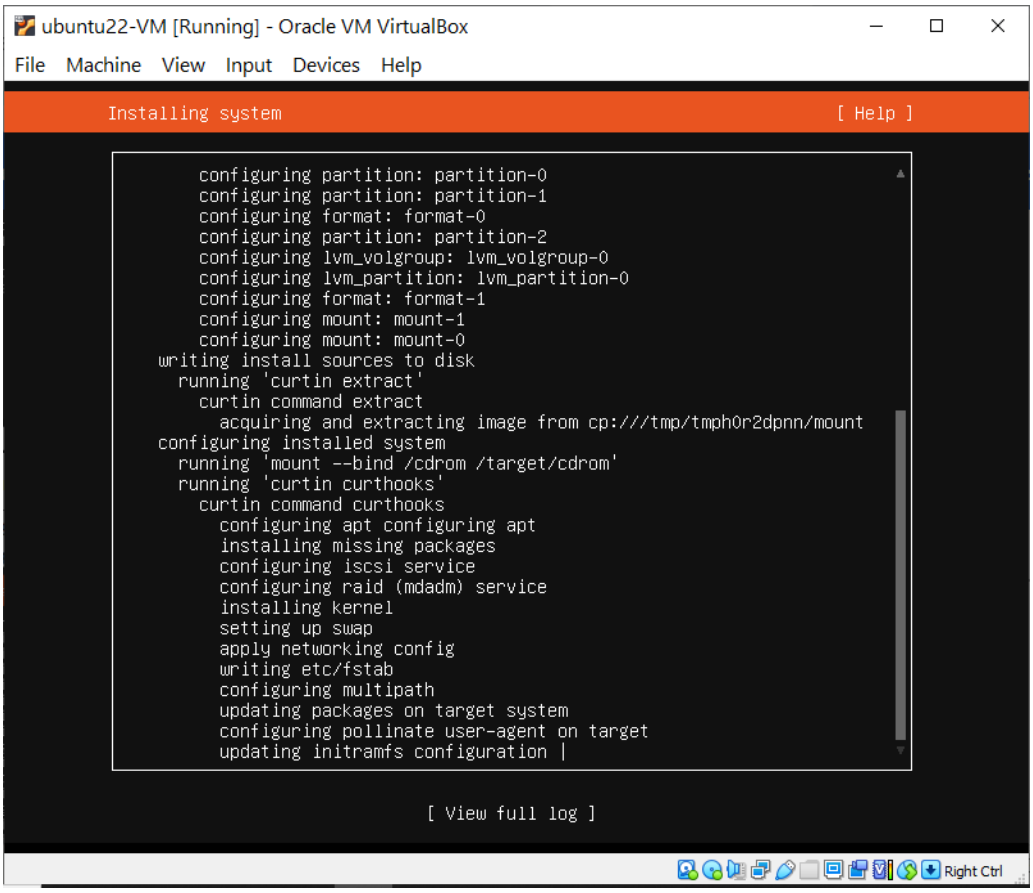
On the **Third-party drivers** screen, ensure **Continue** is highlighted and hit **Enter**



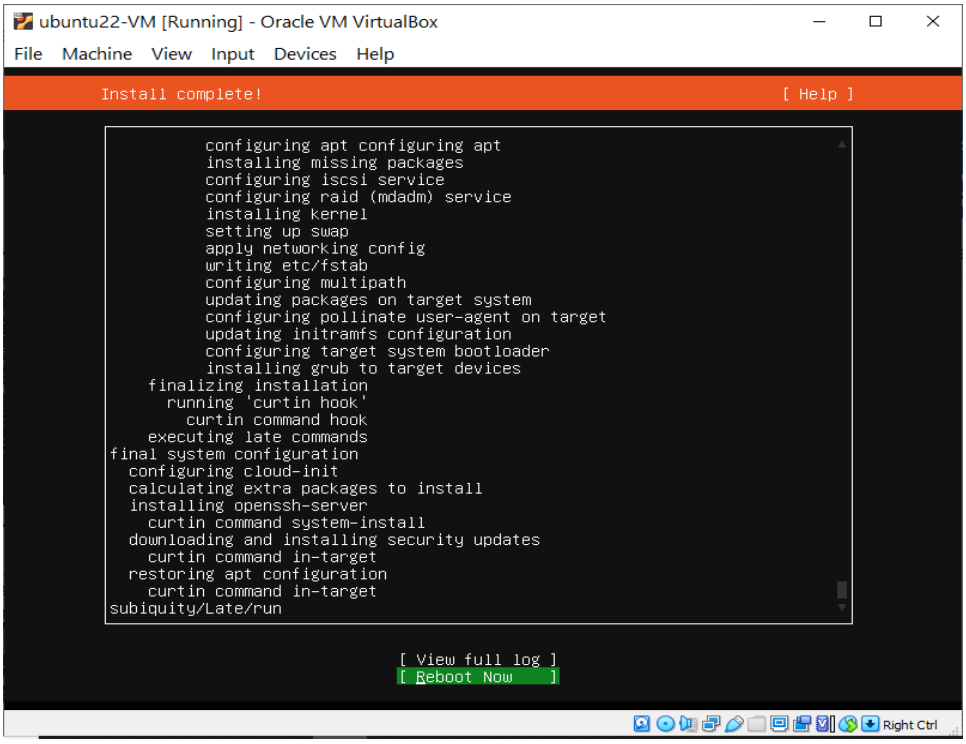
On the **Featured Server Snaps** screen, I did not choose to install any additional packages (feel free to install any packages). Ensure that **Done** is highlighted and hit **Enter** to continue.



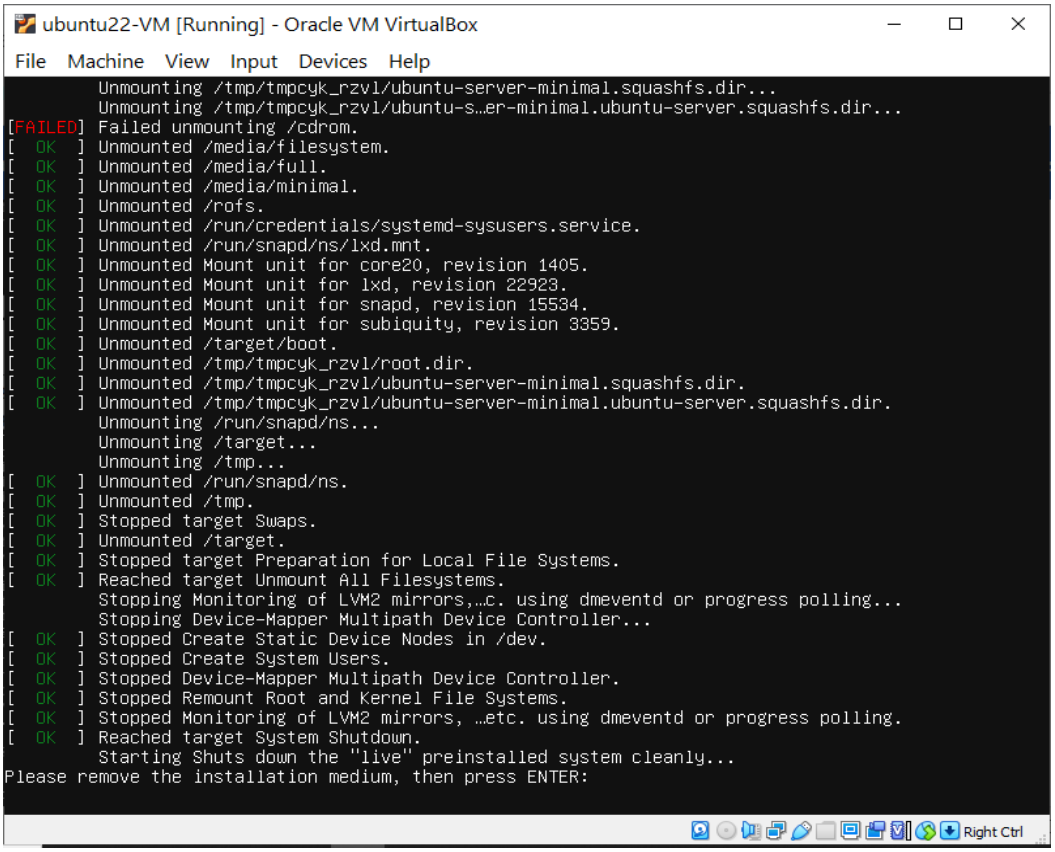
The Ubuntu 22 server install will begin.



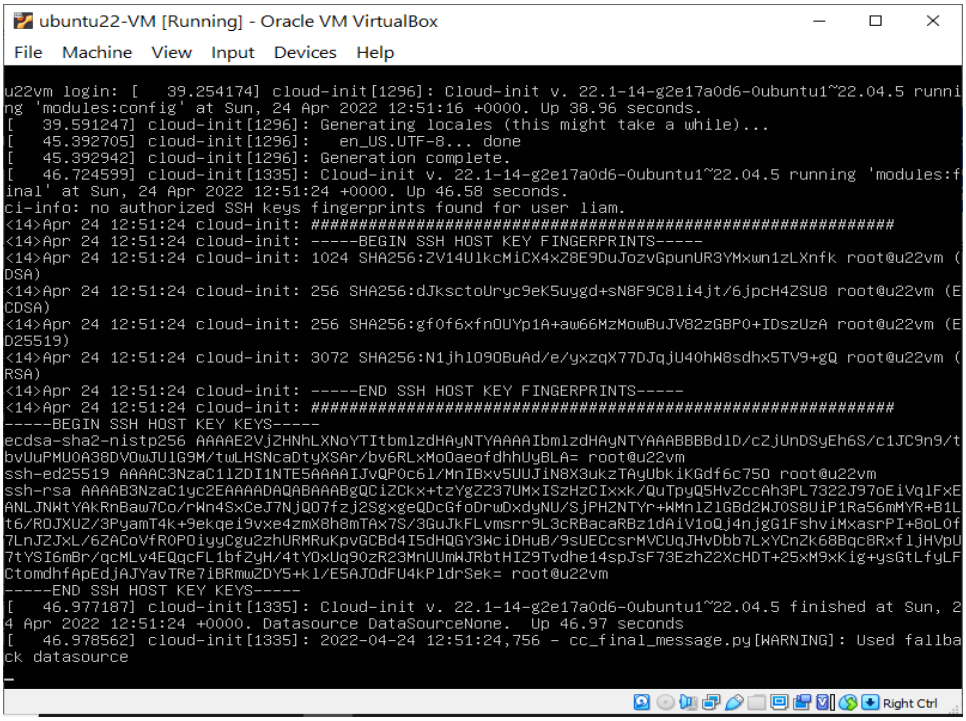
When you see **Reboot Now** at the bottom of the screen (can take between 15 and 20 minutes), ensure it is selected and hit **Enter** to reboot your virtual machine.



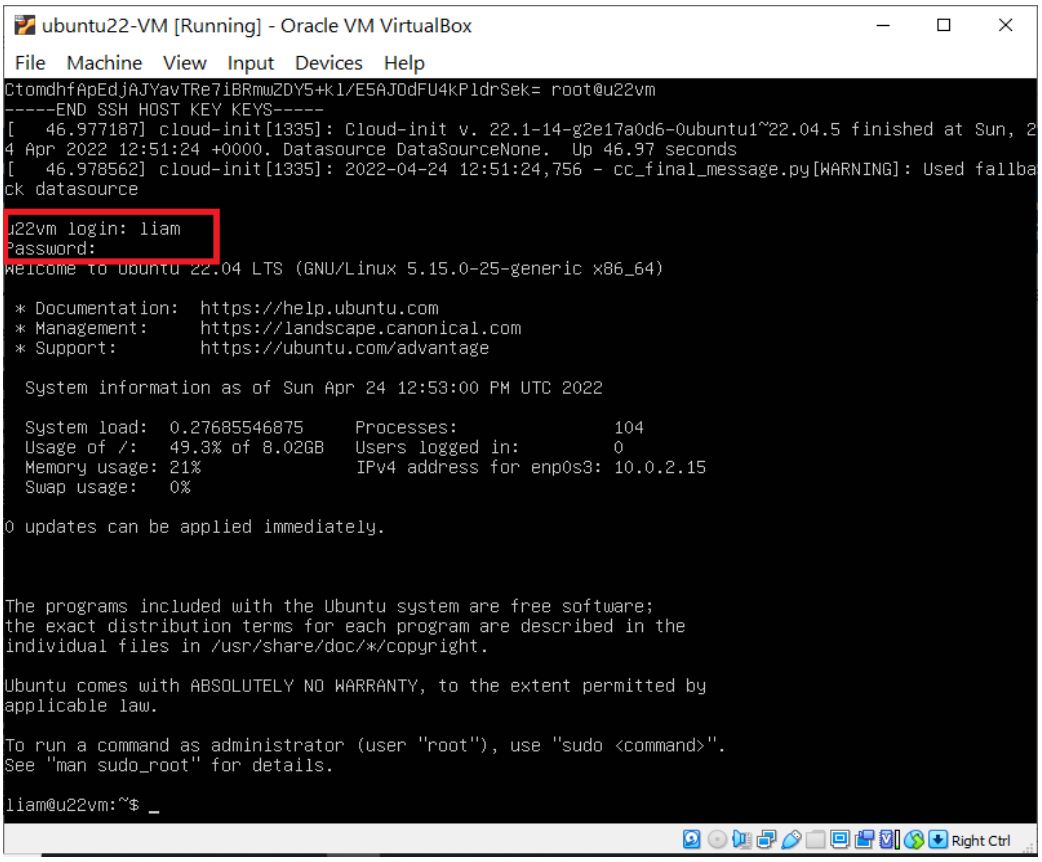
If you encounter this screen, hit **Enter** to continue.



The ISO will be unmounted and the system will boot up. You will notice that it seems to hang, just hit **Enter** and you will see the login prompt

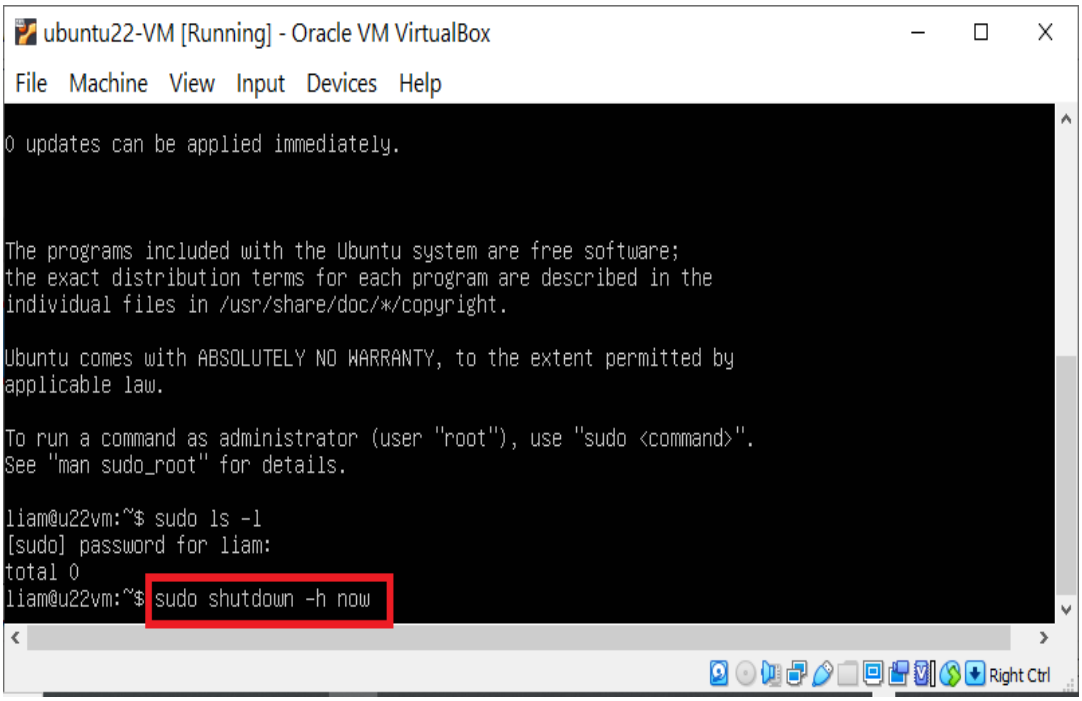


Now, you can login using the credentials you provided during the **Profile Setup**.

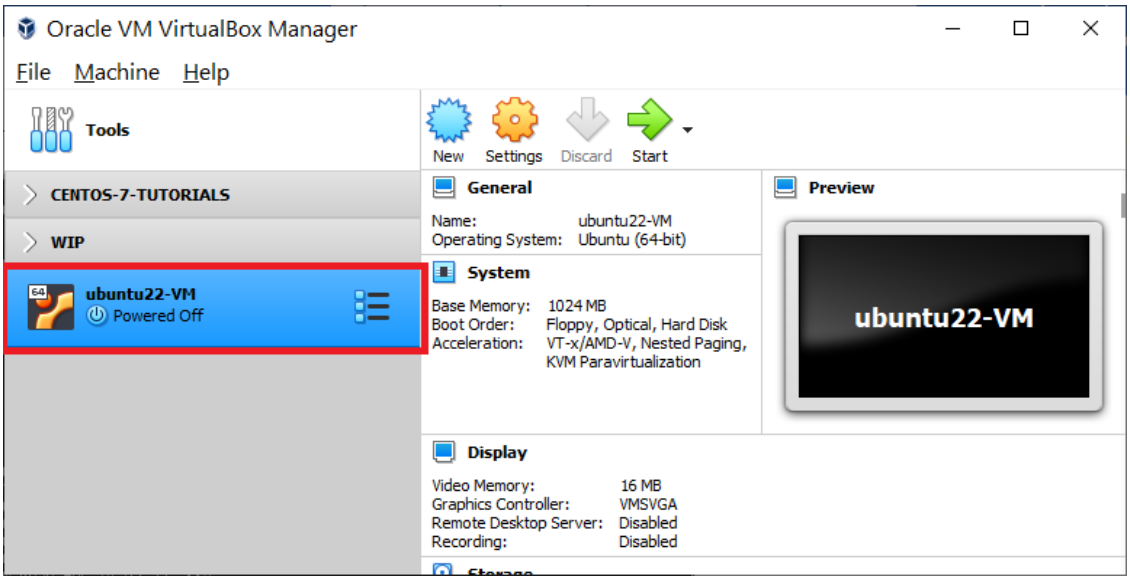


Now, let's verify that this user has **sudo** privileges to shutdown the VM. I am prompted for the non-root user's (in my case, **liam**) password to confirm that I want to execute this command. Note, that I am executing the commands below with **root** privileges.

```
$ sudo ls -l                # verify that non-root user has sudo privileges
$ sudo shutdown -h now      # shutdown the virtual machine
```



The virtual machine was successfully shutdown.

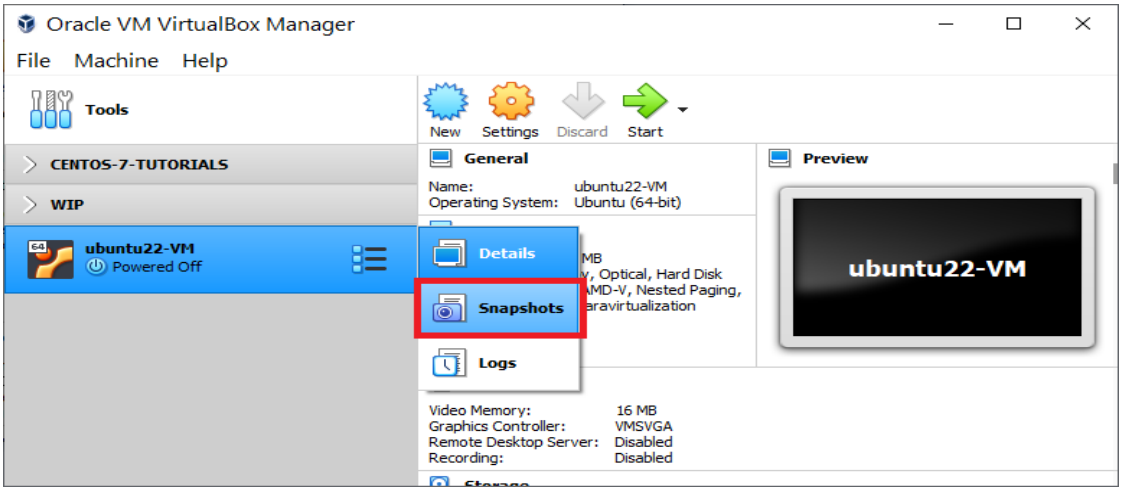


We have successfully installed **Ubuntu 22 server** in a **VirtualBox 6.1.32** virtual machine. We can now take a snapshot.

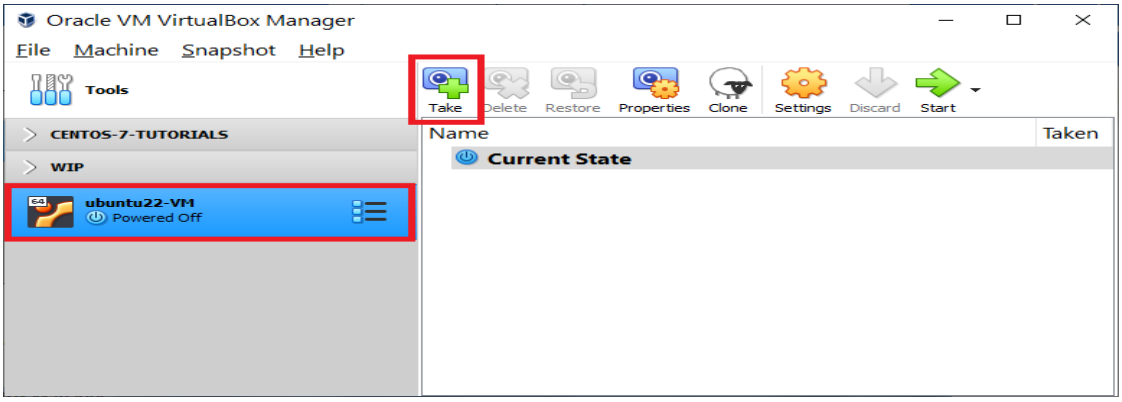
Take Snapshot

To be on the safe side. After I have successfully completed a task, such as installing or updating a VM, I like taking a snapshot to preserve the virtual machine's state. That way I ensure, in the future, if the VM stops responding, or behaving as it should, I can always revert back to that snapshot.

In the VirtualBox Manager interface, we are currently in **Details** view. To switch to **Snapshots** view, click the list icon next to the virtual machine name, and select **Snapshots**.

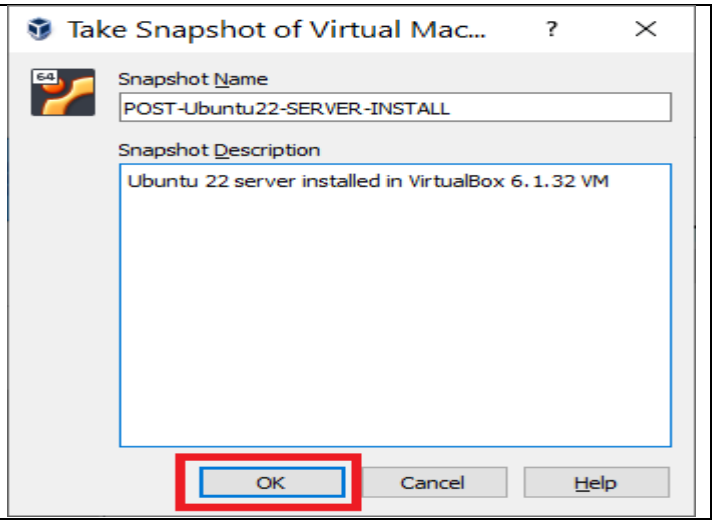


To take a snapshot, on the VirtualBox Manager Interface, ensure your VM is selected and click **Take**

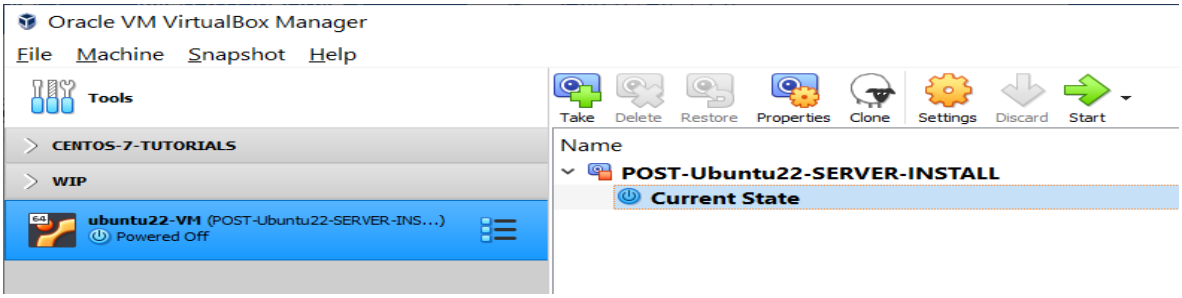


Enter a name for the snapshot, as well as, a short description, then, click **OK**

I've taken a snapshot "**POST-Ubuntu22-SERVER-INSTALL**" to ensure that I have a starting point to revert back to, if needed.

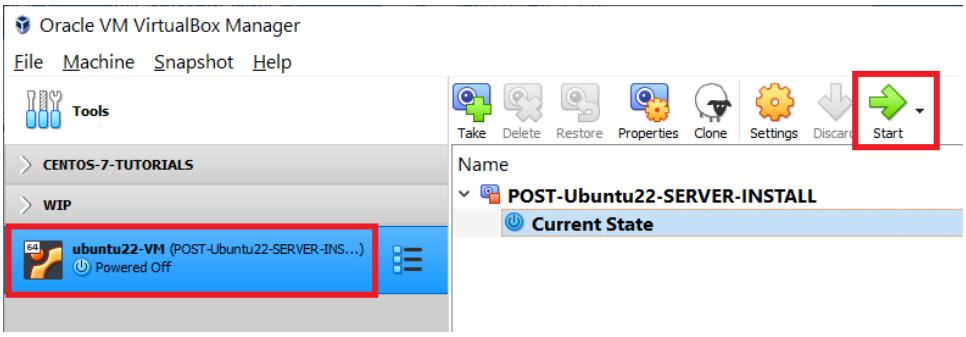


We have successfully taken a snapshot and ensure that we can always revert back to a working virtual machine with a server version of **Ubuntu 22** installed.



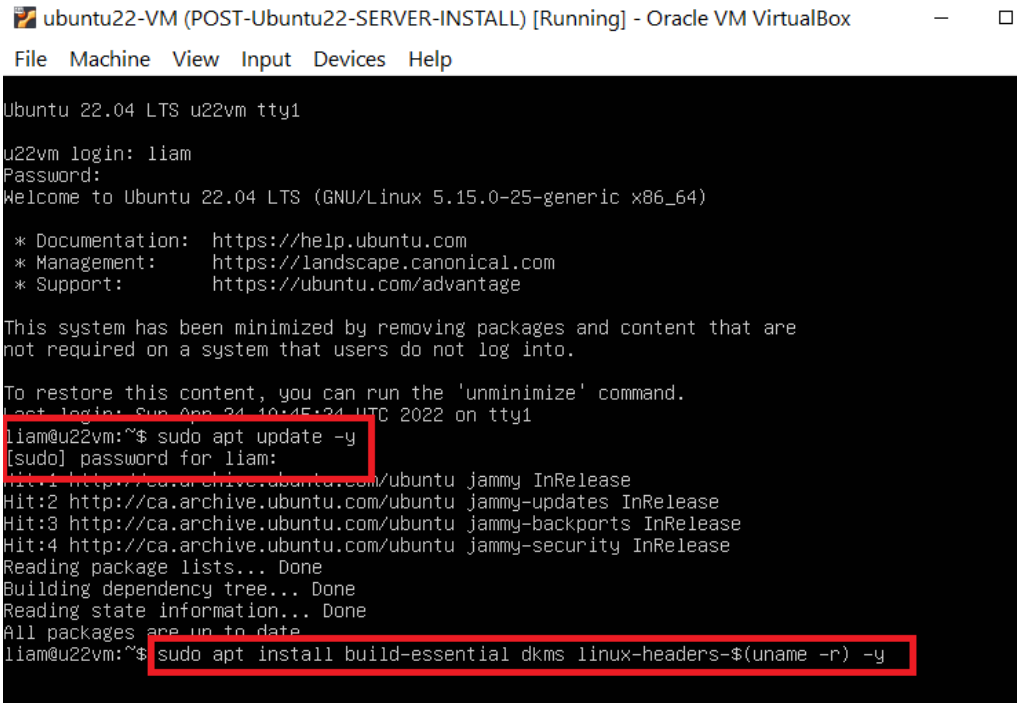
Install VirtualBox Guest Additions

From the VirtualBox Manager interface, ensure your VM is selected and click **Start**



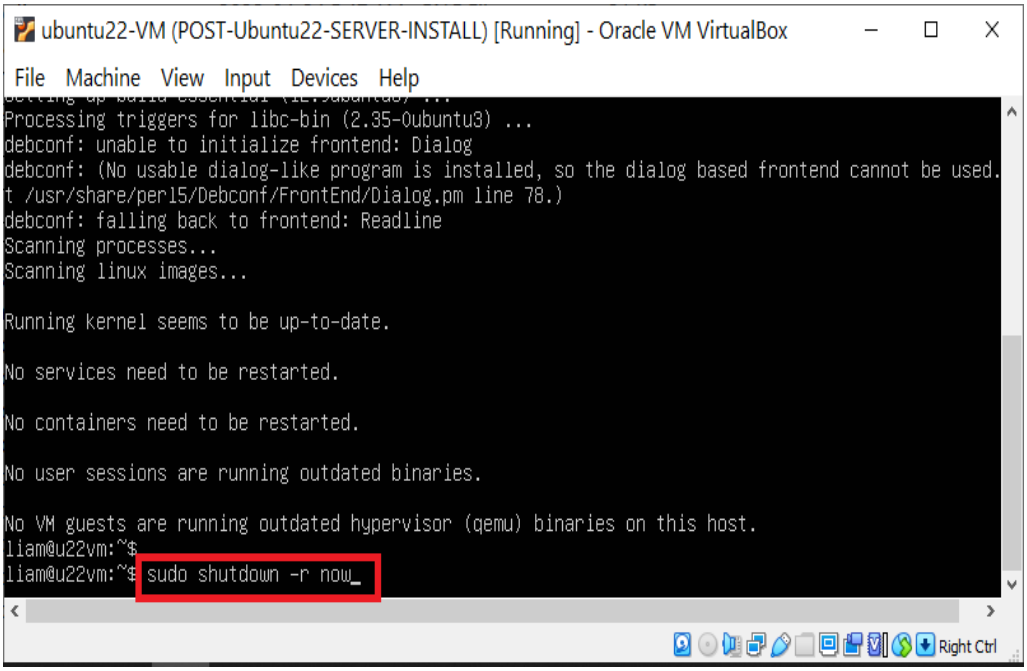
Before we can install VirtualBox's **Guest Additions**, we will need to install the packages required for building kernel modules:

```
$ apt update -y
$ apt install build-essential dkms linux-headers-$(uname -r) -y
```



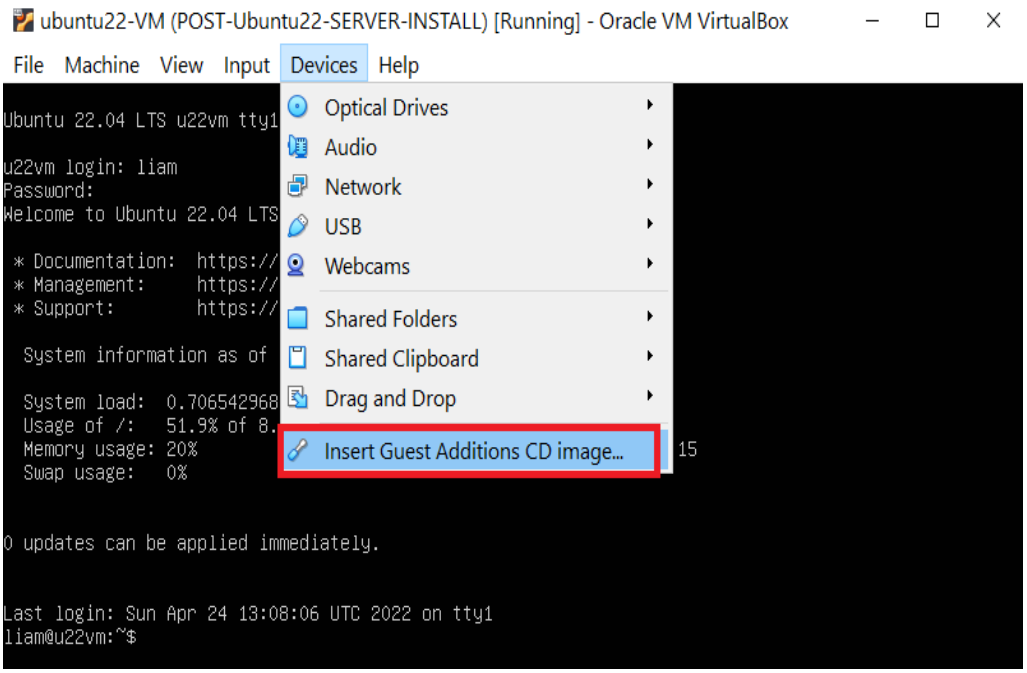
Before we install VirtualBox's **Guest Additions**, it is a good idea to reboot the system:

```
$ sudo shutdown -r now
```



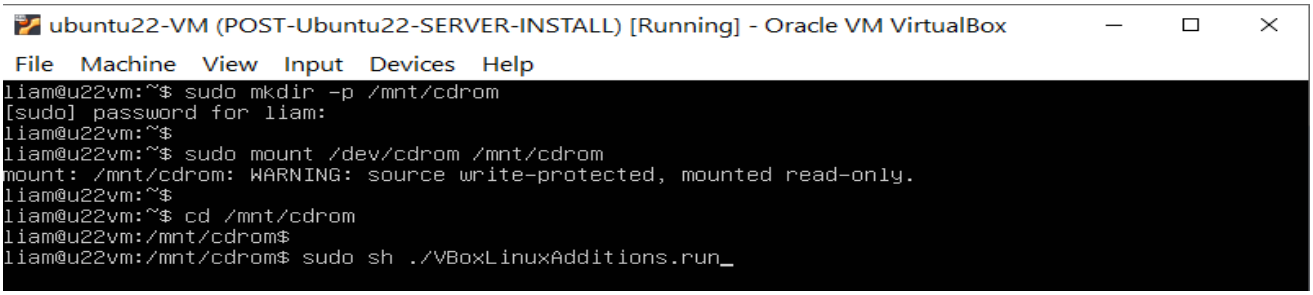
Once the VM reboots, log back into the system. Our environment is ready to install **Guest Additions**.

From the virtual machine's main menu, select **Devices**, then click **Insert Guest Additions CD image**



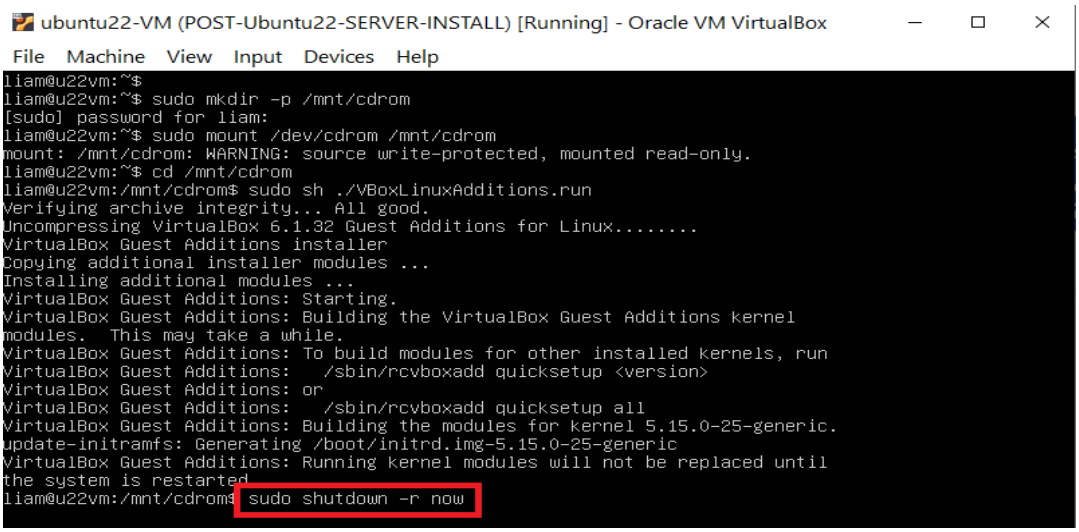
Now that we've inserted the Guest Additions CD image, we will have to mount the CD image so that we can access its contents to perform the installation. To do this, execute the following commands:

```
$ clear                                    // clear terminal (optional)
$ sudo mkdir -p /mnt/cdrom                 // create directory for mounting
$ sudo mount /dev/cdrom /mnt/cdrom         // mount CD image onto directory
$ cd /mnt/cdrom                            // change to that directory
$ sudo sh ./VBoxLinuxAdditions.run         // install Linux Guest Additions
```



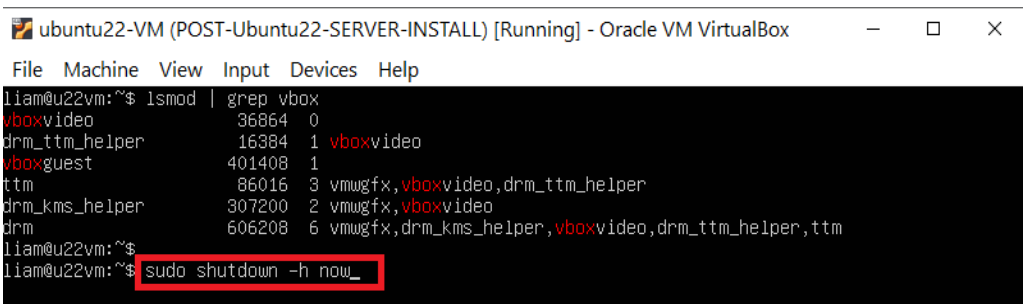
After installing Guest Additions, we will need to reboot the system for the changes to take effect:

```
$ sudo shutdown -r now
```



Once the VM has restarted, we can confirm that the installation was successful by using the **lsmod** command to display the status of modules in the Linux kernel. We can see that **Guest Addition** modules have been loaded into the Linux kernel.

```
$ lsmod | grep vbox
$ sudo shutdown -h now
```

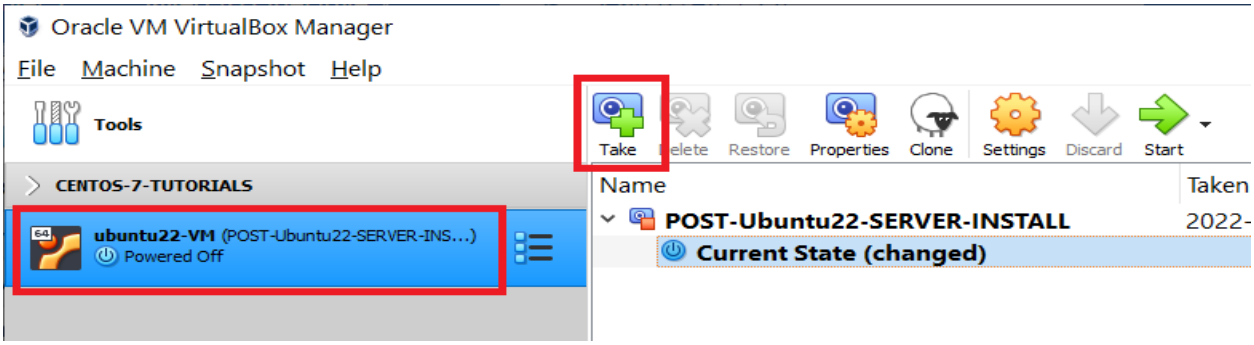


After shutting down our system, it would be a good idea to take a snapshot.

That way, if we ever need an Ubuntu 22 server VM that already has VirtualBox's Guest Additions installed, we can clone this snapshot in seconds.

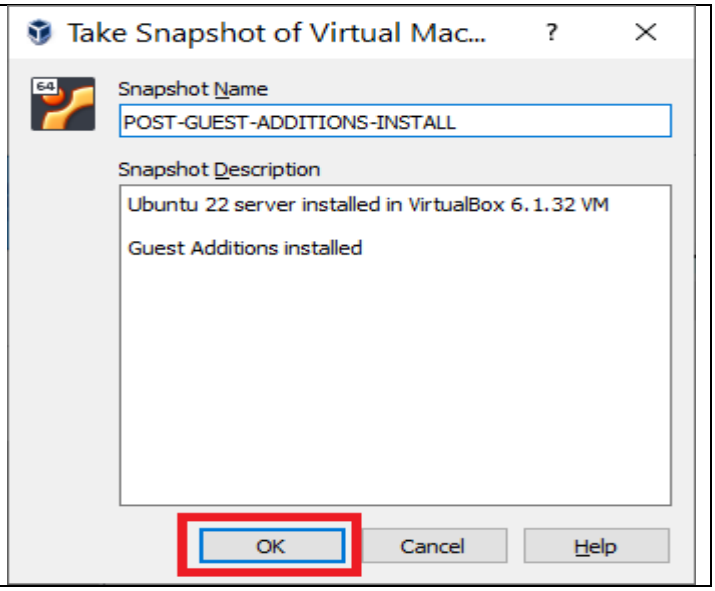
Take Post Guest Additions Snapshot

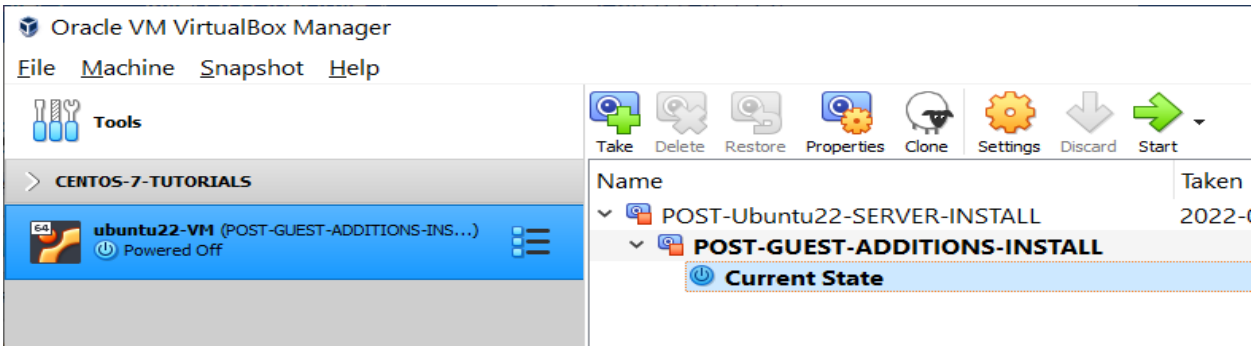
From the VirtualBox Manager interface, ensure your VM is selected and you are in **Snapshots** view. To create the snapshot, click **Take**



Enter a name for the snapshot, as well as, a short description, then, click **OK**

I've taken a snapshot "**POST-GUEST-ADDITIONS-INSTALL**" to ensure that I have an Ubuntu 22 server with VirtualBox's Guest Additions installed, which can be cloned for future use.





We have successfully created a virtual machine and installed the Ubuntu 22 server operating system, as well as, VirtualBox's **Guest Additions.**

Along the way we created a number of snapshots to act as fallback mechanisms. At any time, if a virtual machine becomes unresponsive, we can always revert back to a working snapshot. We can also clone a snapshot, as long as, the snapshot was taken when the virtual machine was powered off.

Hopefully, you've enjoyed completing this tutorial and found it helpful.

If you are interested in continuing your Linux learning journey, I have a number of other Linux tutorials that can be accessed **here**, while my main tutorials page can be accessed **here**.

If you are interested in how to control a virtual machine from your host machine, in my automation tutorials, I demonstrate how to use both **guestproperty** and **guestcontrol** in a PowerShell script to manage a virtual machine. My **Auto Start VM Part 2** tutorial can be accessed **here**, while my **Auto Stop VM Part 2** tutorial can be accessed **here**.

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