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A016

B. Tech (CsBs) TY

## Aim

Installation of Oracle VM and Ubuntu on Windows OS.

## Software Used

Windows 11, Chrome, Oracle VM, Ubuntu, UTorrent.

## Theory

### What is meant by virtualization?

Virtualization uses software to create an abstraction layer over computer hardware that allows the hardware elements of a single computer—processors, memory, storage and more—to be divided into multiple virtual computers, commonly called virtual machines (VMs). Each VM runs its own operating system (OS) and behaves like an independent computer, even though it is running on just a portion of the actual underlying computer hardware.

### What is Virtual Machine

A virtual machine, commonly shortened to just VM, is no different than any other physical computer like a laptop, smart phone, or server. It has a CPU, memory, disks to store your files, and can connect to the internet if needed. While the parts that make up your computer (called hardware) are physical and tangible, VMs are often thought of as virtual computers or software-defined computers within physical servers, existing only as code.

### What is Oracle VM VirtualBox

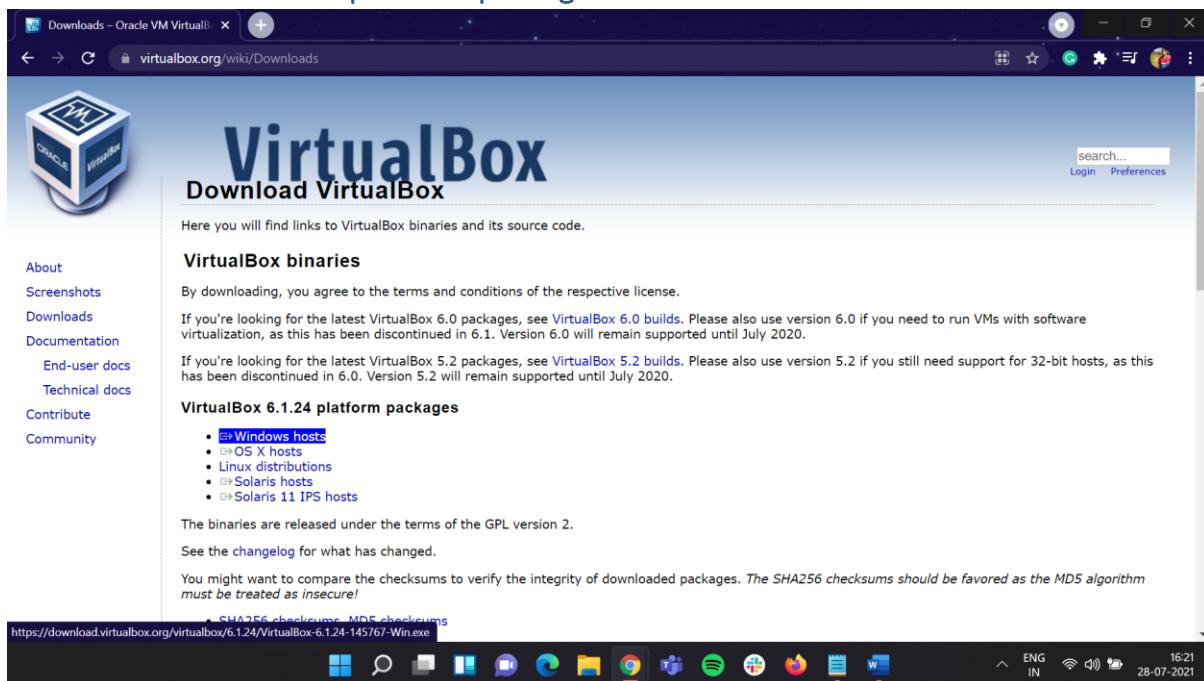
Oracle VM VirtualBox is cross-platform virtualization software. It allows users to extend their existing computer to run multiple operating systems including Microsoft Windows, Mac OS X, Linux, and Oracle Solaris, at the same time. Designed for IT professionals and developers, Oracle VM VirtualBox is ideal for testing, developing, demonstrating, and deploying solutions across multiple platforms from one machine.

## Steps to install Oracle Virtual Box/Machine on WindowsOS

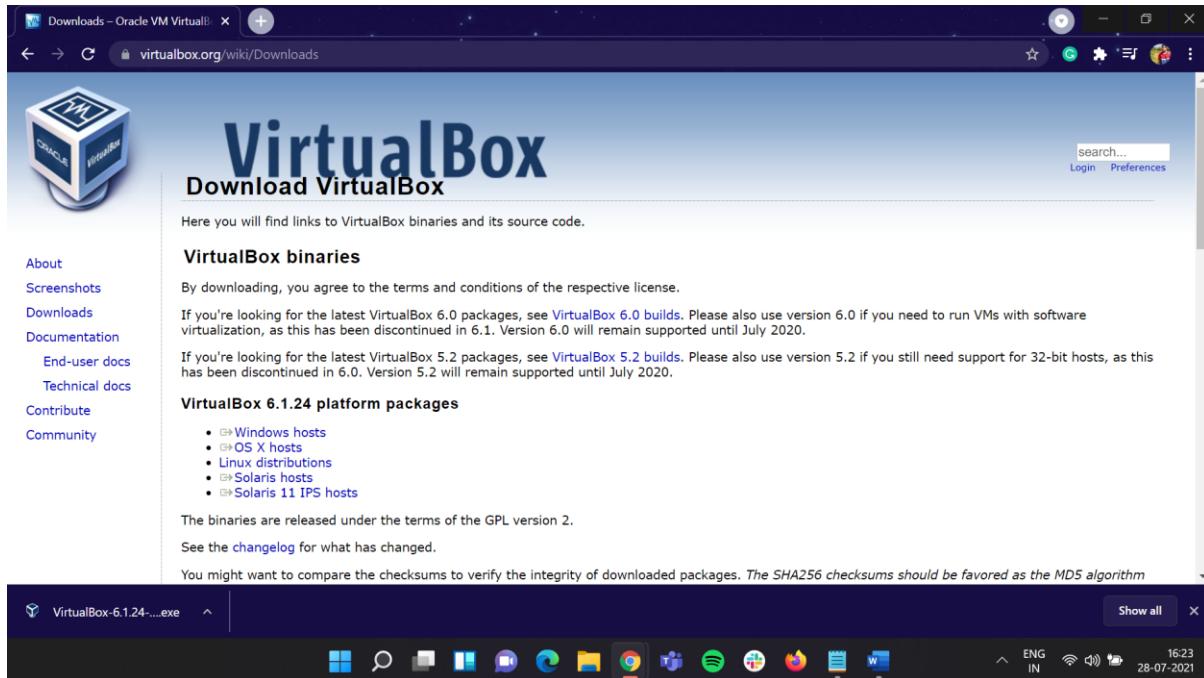
Visit Oracle official Website Link : <https://www.virtualbox.org/wiki/Downloads>



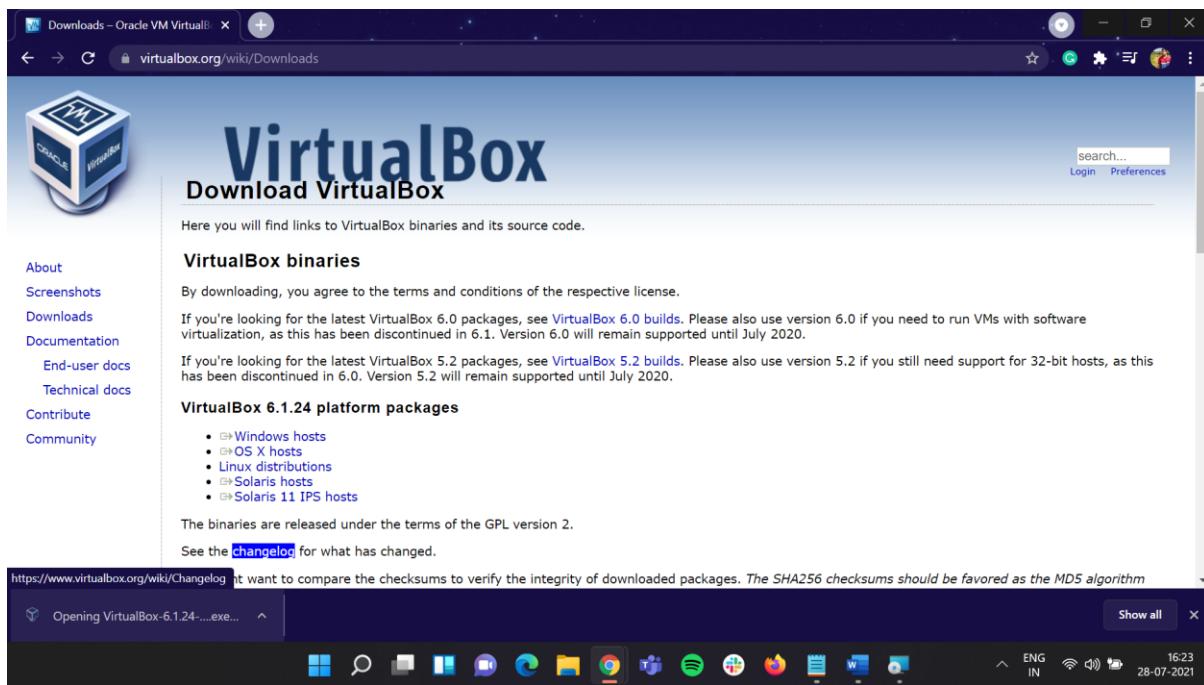
Under VirtualBox 6.1.24 platform packages click on Windows hosts



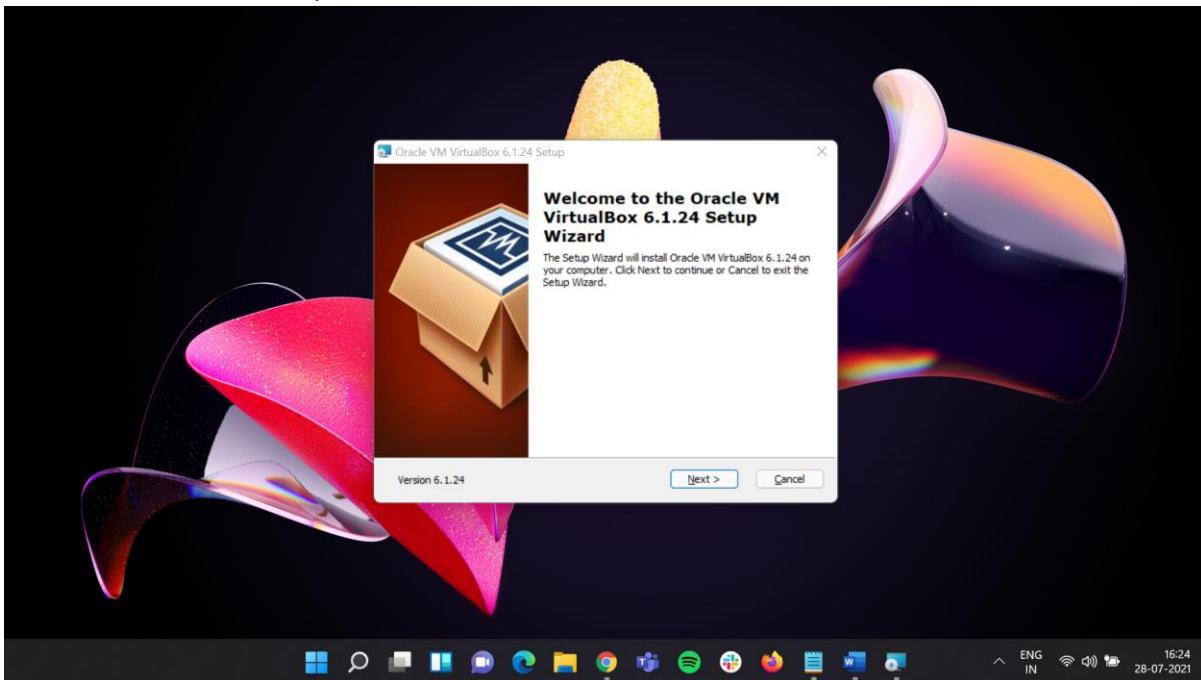
Download of VirtualBox 6.1.24 Windows version will download. Wait for some time to complete the download.



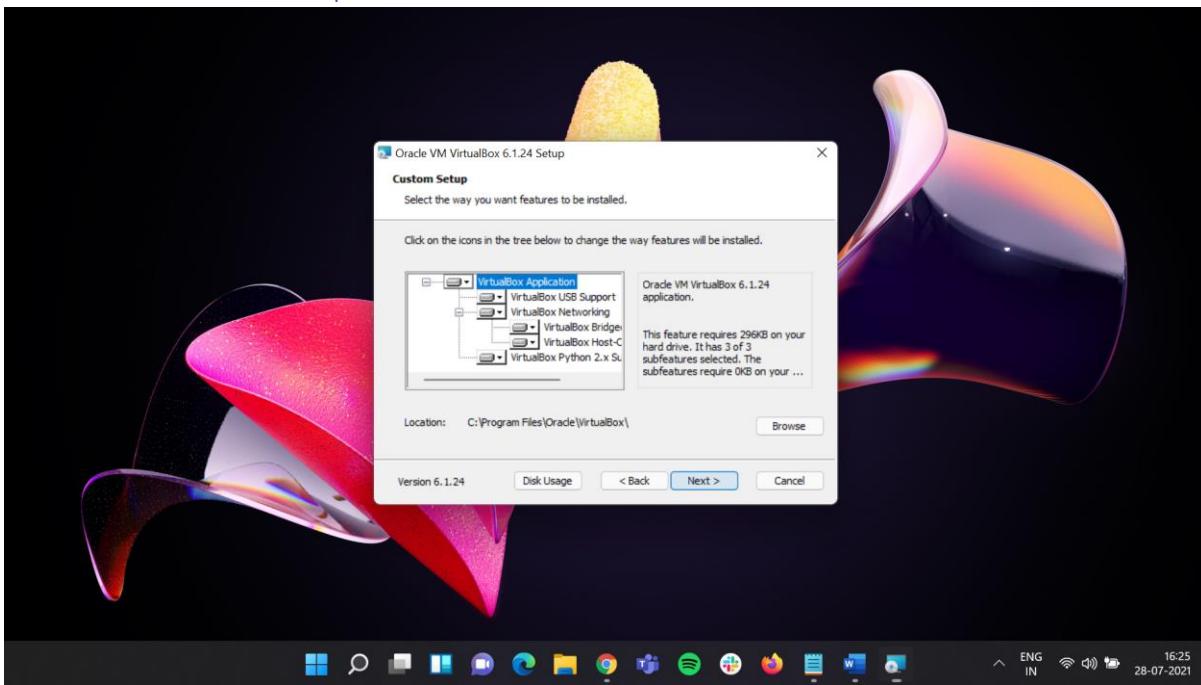
Once the download has been done double click on it



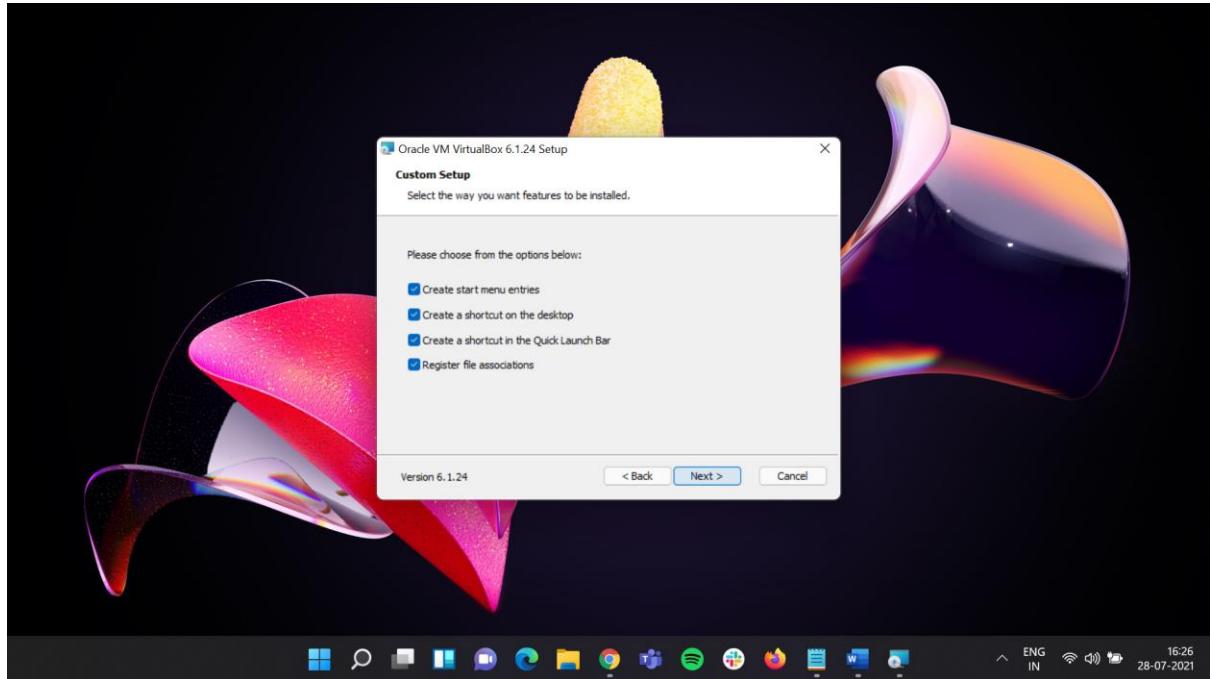
VirtualBox 6.1.24 Setup Wizard will start up, click on **Next** button to proceed further.



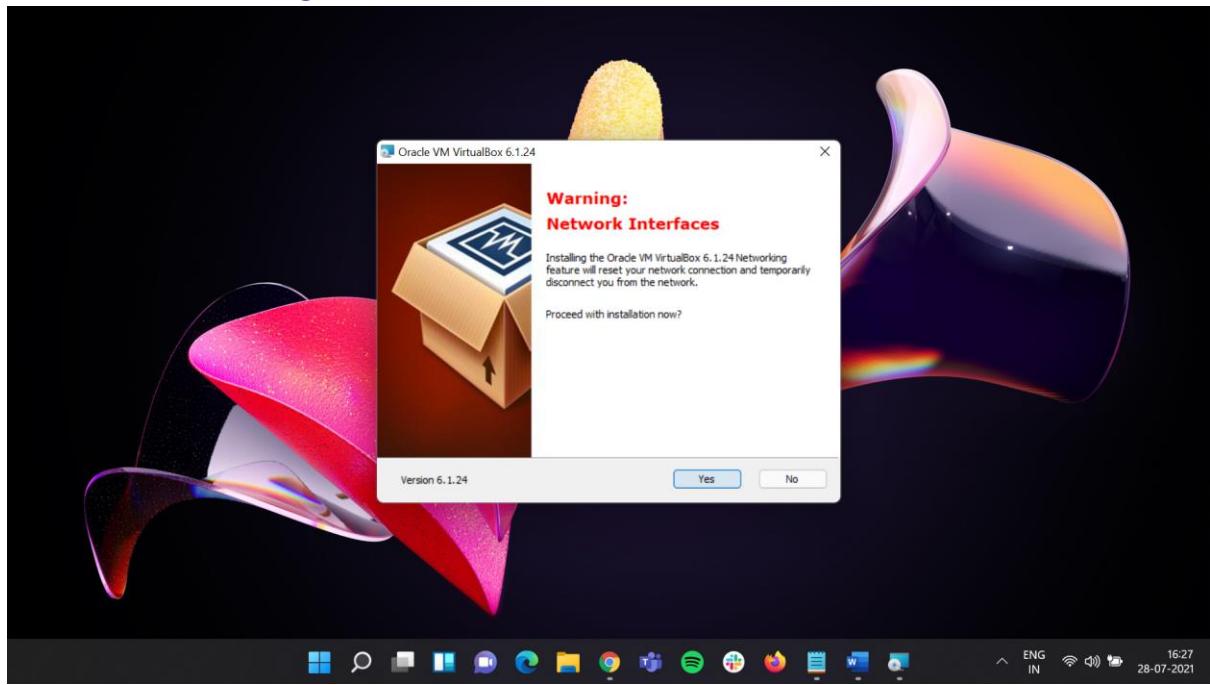
Click on **Next** button to proceed further.



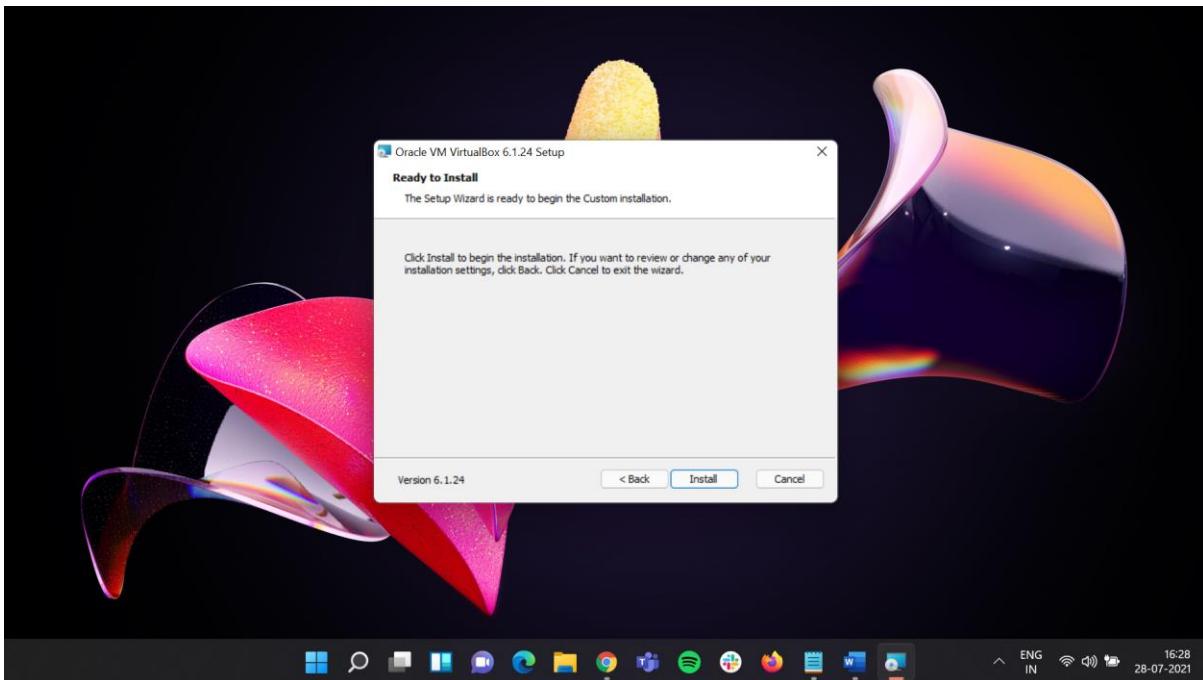
Choose **Custom Setup** which you want or not if no change then click on **Next** button to proceed further.



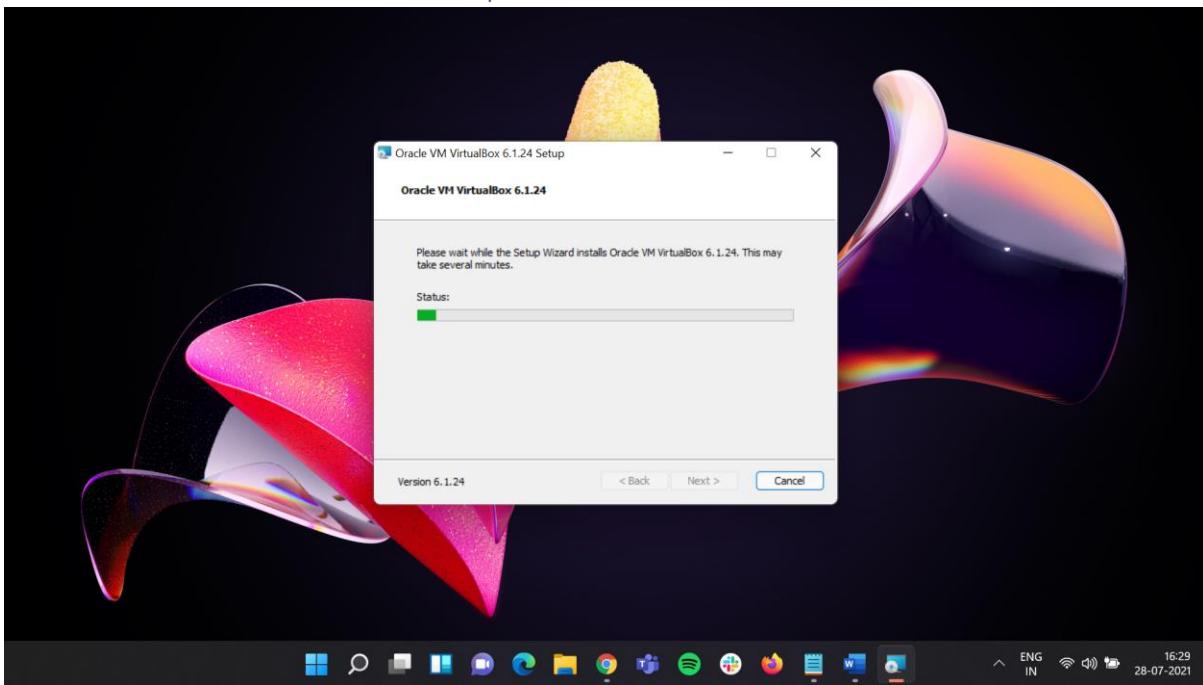
It will show a **Warning** describing **Network Interfaces**. Ignore that and click on **Yes**.



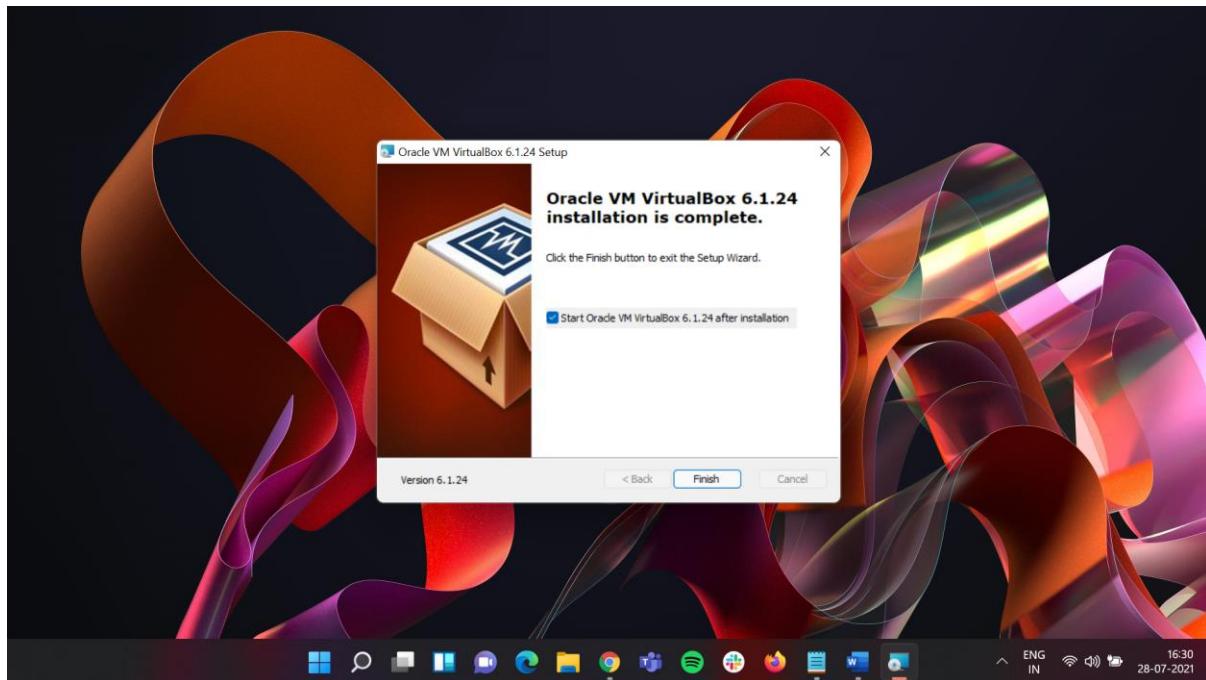
It will show Ready to install window Click on **Install** to proceed further.



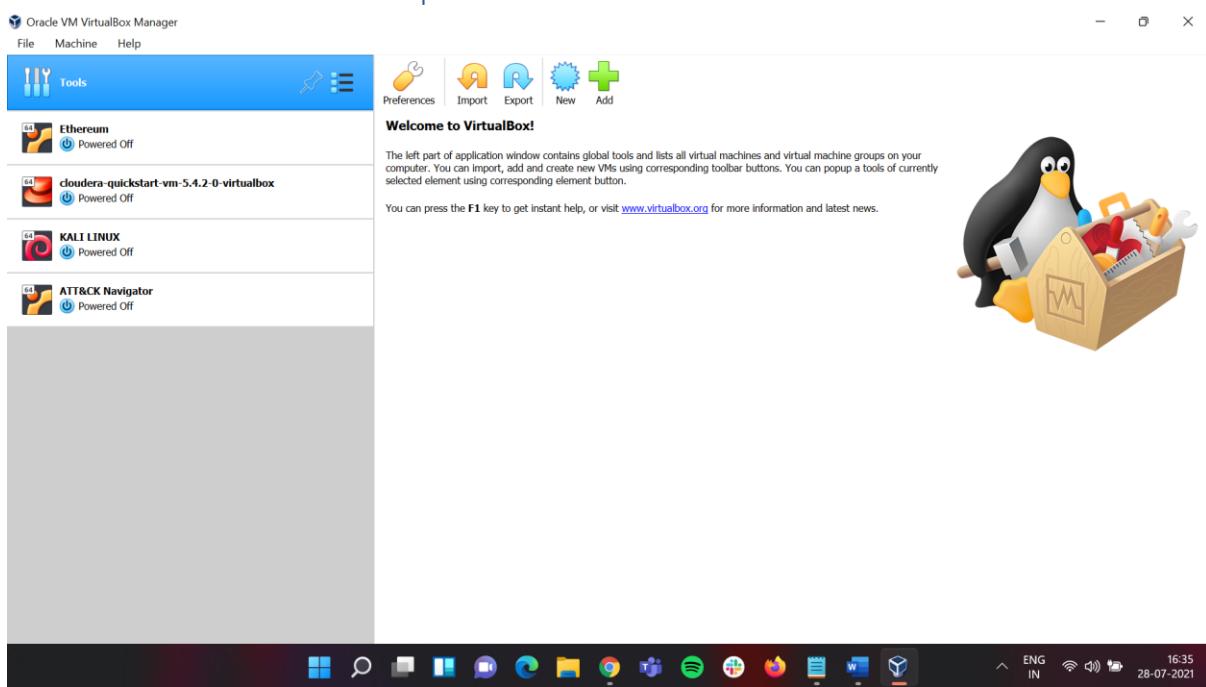
The Installation Process will start up.



Once Setup been done click on **Finish**.



A VM Icon will prompt in the taskbar with icon like this  . Click on that and by doing that Oracle VM has been setup-ed in Windows 11.



## Steps to install UBUNTU in Oracle Virtual Box/Machine

Visit Oracle official Website Link: <https://ubuntu.com/download/desktop>

The screenshot shows the Canonical Ubuntu website's download section. The main heading is "Download Ubuntu Desktop". Below it, the specific version "Ubuntu 20.04.2.0 LTS" is highlighted. A green "Download" button is visible on the right. The page also includes a link to "Ubuntu 20.04 LTS release notes" and a note about alternative downloads.

Here we will be downloading **Ubuntu 20.04.2.0 LTS**. To download it faster I click on **see our alternative downloads** below **Download** icon corresponding to the version number.

The screenshot shows the same Ubuntu download page, but the "Alternative downloads" section is now the active one. It features a large green "Download" button. The text "For other versions of Ubuntu Desktop including torrents, the network installer, a list of local mirrors, and past releases see our alternative downloads." is displayed below the button.

Once clicking on that it will prompt to a new page showing alternative downloads

A screenshot of a web browser displaying the Ubuntu website at [ubuntu.com/download/alternative-downloads](https://ubuntu.com/download/alternative-downloads). The page title is "Alternative downloads". The main navigation bar includes links for "Enterprise", "Developer", "Community", "Download", "Search", and "Sign in". The "Alternative downloads" link is highlighted in orange. Below the navigation, there's a heading "Alternative downloads" and a paragraph explaining other ways to get Ubuntu, mentioning torrents, network installers, and regional mirrors. A "Network installer" section is visible, featuring a screenshot of a Windows-style desktop with various application icons.

## Alternative downloads

There are several other ways to get Ubuntu including torrents, which can potentially mean a quicker download, our network installer for older systems and special configurations and links to our regional mirrors for our older (and newer) releases. If you don't specifically require any of these installers, we recommend using our standard downloads.

### Network installer

The network installer lets you install Ubuntu over a network. It includes the minimal set of packages needed to start and the rest of the packages are downloaded over the network.



Scroll down till you see BitTorrent as a topic

A screenshot of the Ubuntu website showing the "BitTorrent" download option. The page title is "Alternative downloads". The "BitTorrent" link is highlighted in orange. Below the links, there's a section titled "BitTorrent" with a brief description and a table comparing download options for Ubuntu 21.04, 20.04.2 LTS, and 18.04.5 LTS.

### BitTorrent

BitTorrent is a peer-to-peer download network that sometimes enables higher download speeds and more reliable downloads of large files. You need a BitTorrent client on your computer to enable this download method.

#### Ubuntu 21.04

[Ubuntu 21.04 Desktop \(64-bit\)](#)  
[Ubuntu Server 21.04](#)

#### Ubuntu 20.04.2 LTS

[Ubuntu 20.04.2 Desktop \(64-bit\)](#)  
[Ubuntu Server 20.04.2 LTS](#)

#### Ubuntu 18.04.5 LTS

[Ubuntu 18.04.5 Desktop \(64-bit\)](#)  
[Ubuntu Server 18.04.5 LTS](#)

### Other images and mirrors

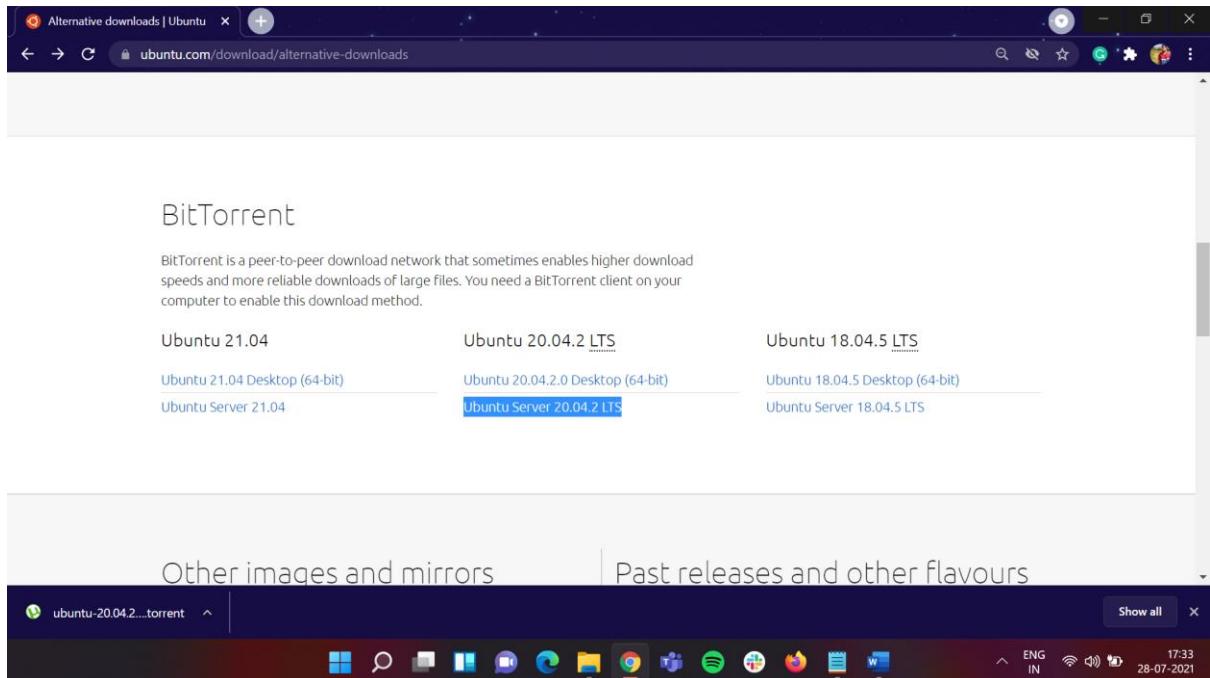
For the full list of available Ubuntu images, we recommend you select a mirror local to you.

### Past releases and other flavours

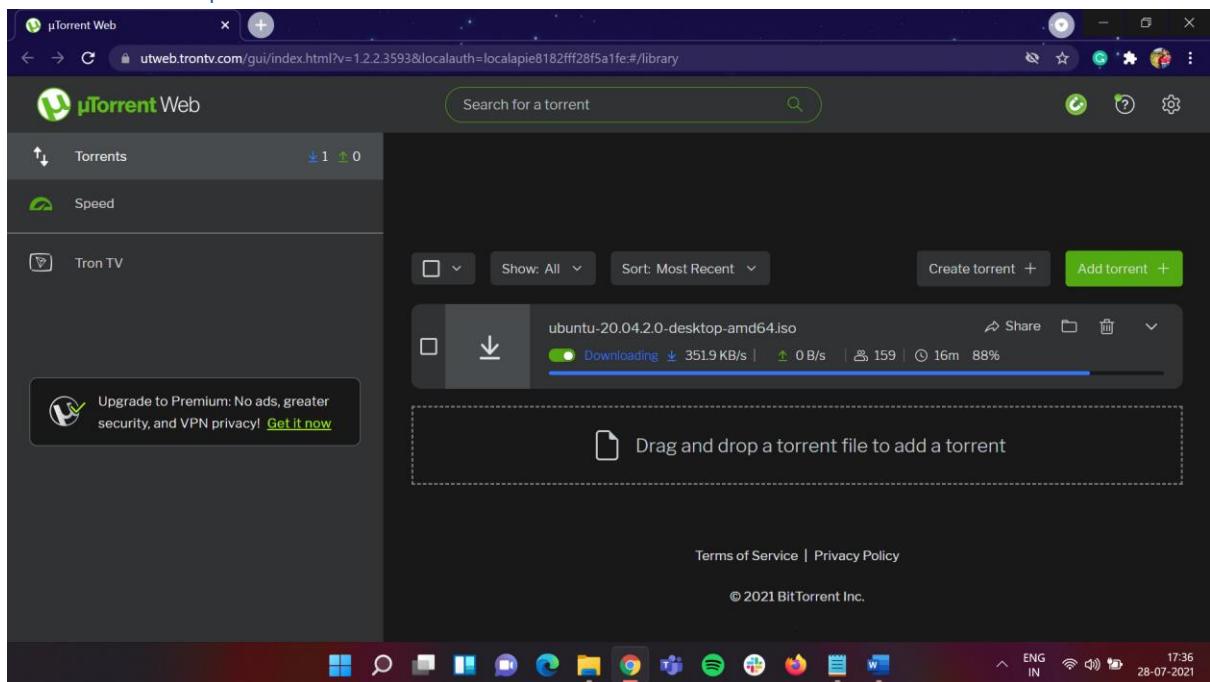
Looking for an older release of Ubuntu? Whether you need a POWER, ARM or obsolete release or a previous LTS point release,



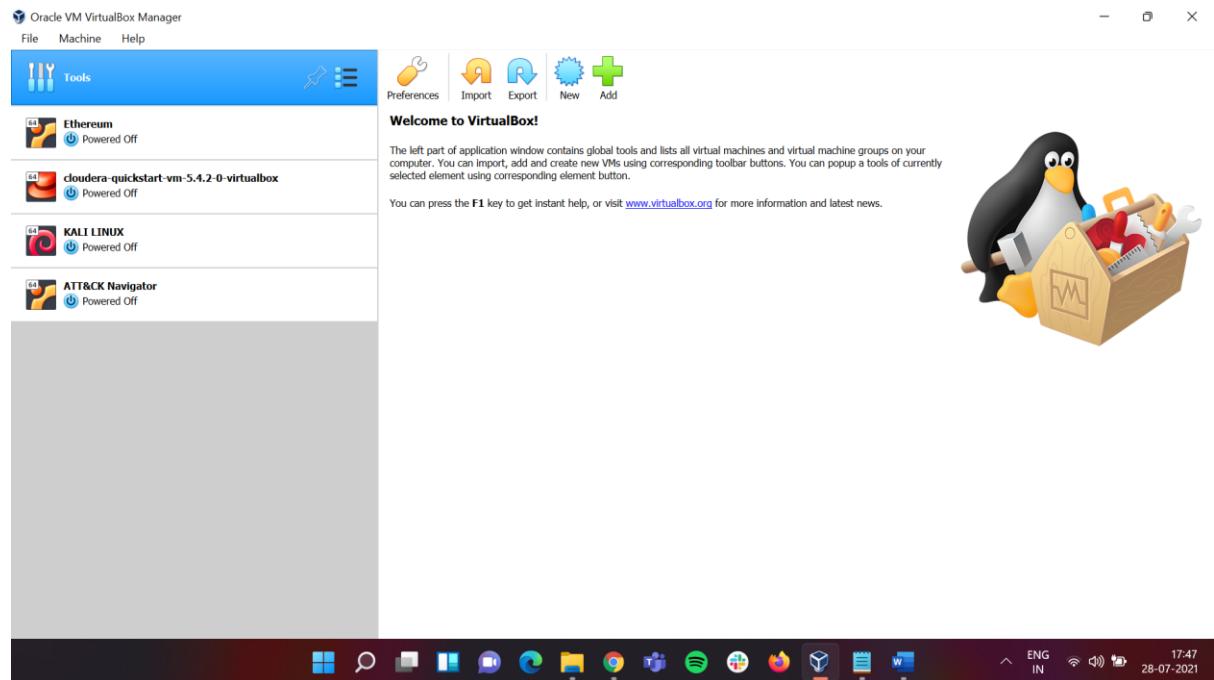
Under Ubuntu 20.04.2 LTS click on Ubuntu Server 20.04.2 Desktop (64-Bit) and a torrent file will be downloaded click on that and wait till the download to complete.  
Torrent download link : <https://www.utorrent.com/>



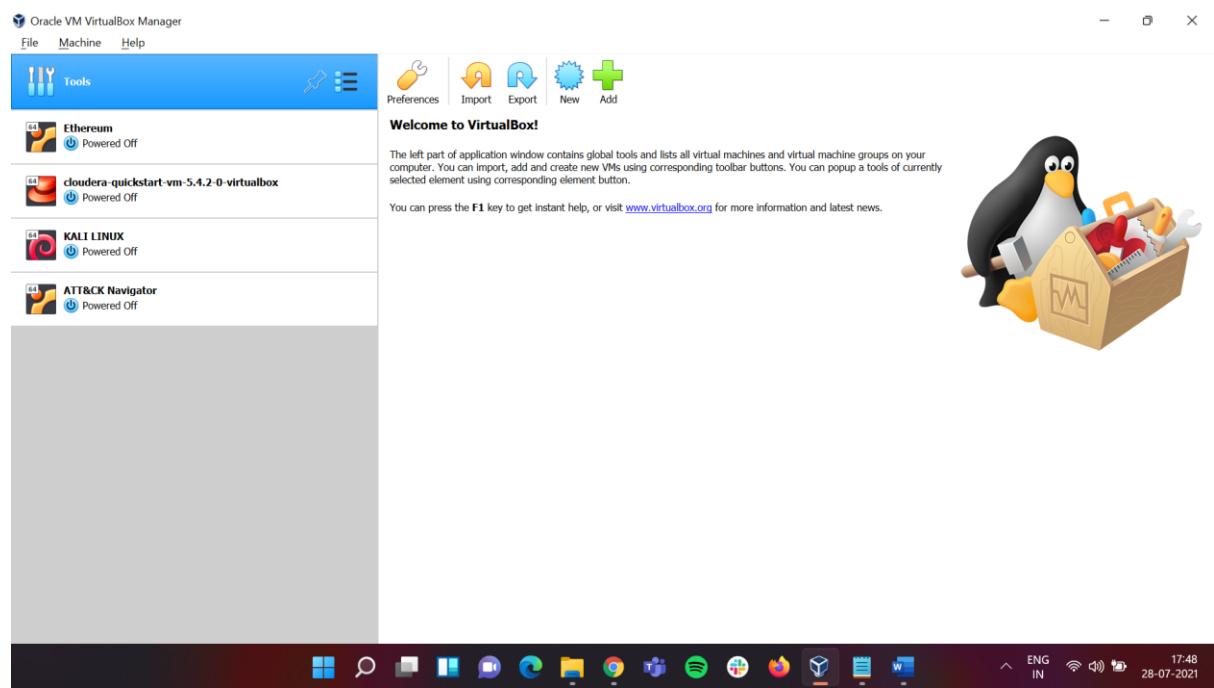
On clicking the **downloaded torrent file**, it will prompt itself to **torrent website** and the download will proceed further.



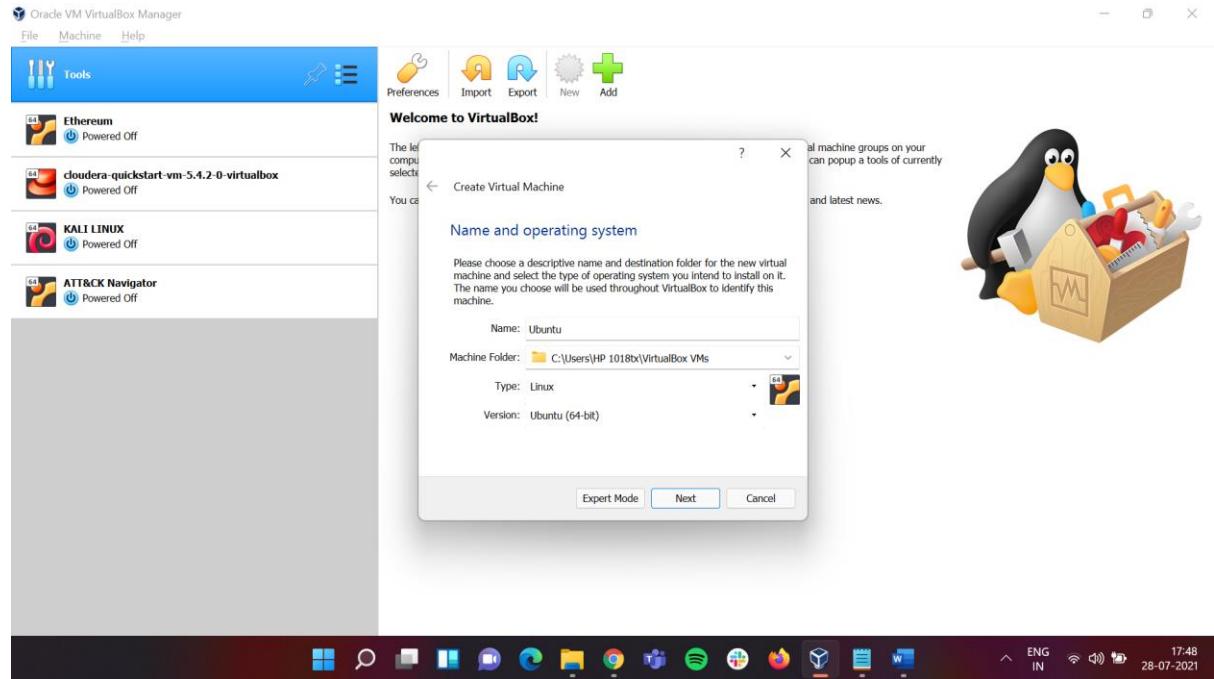
Once download is completed open the Oracle VM



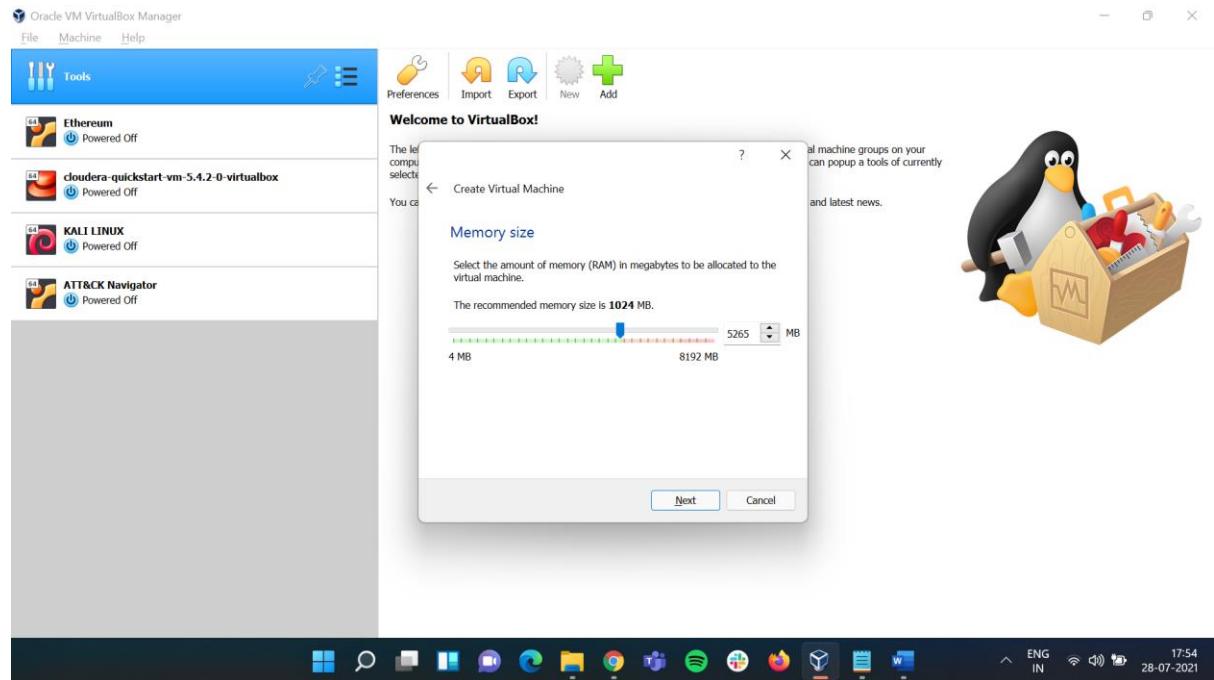
Under Tools click on New



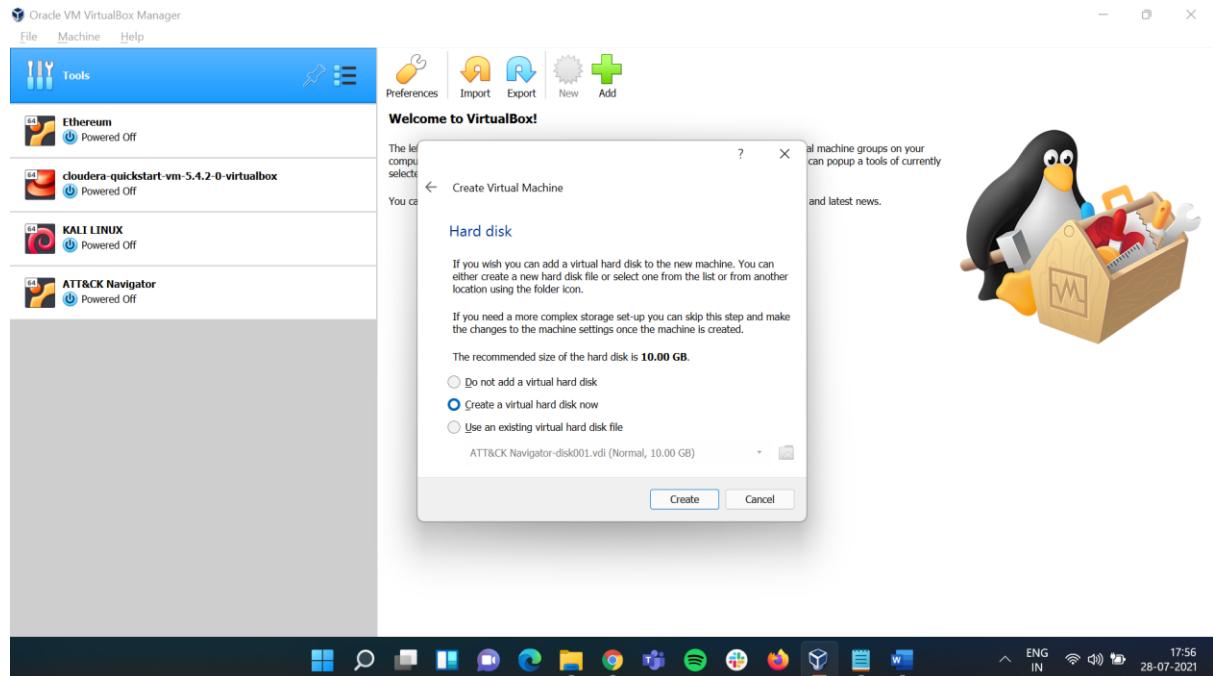
In Name and Operating System Sub-window under Name, name it as “Ubuntu”. And click on Next.



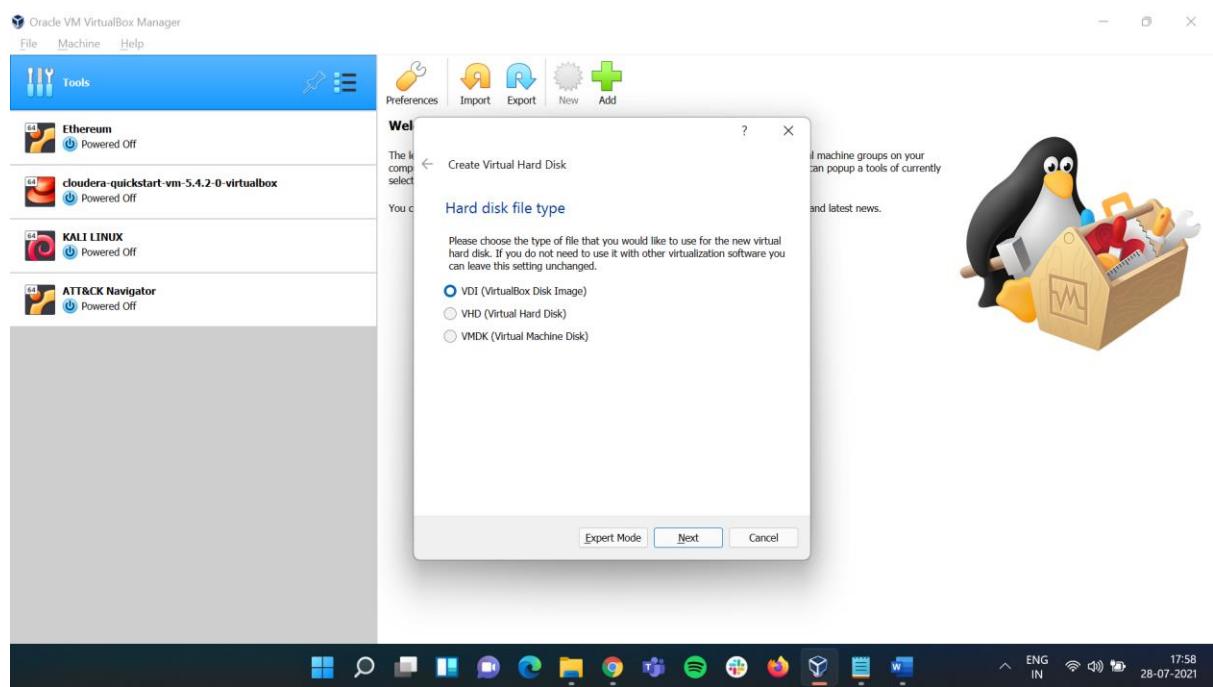
In Memory Size Sub-window set the memory size up to the green bar which in my case will be at 5265 MB. After doing that click on Next.



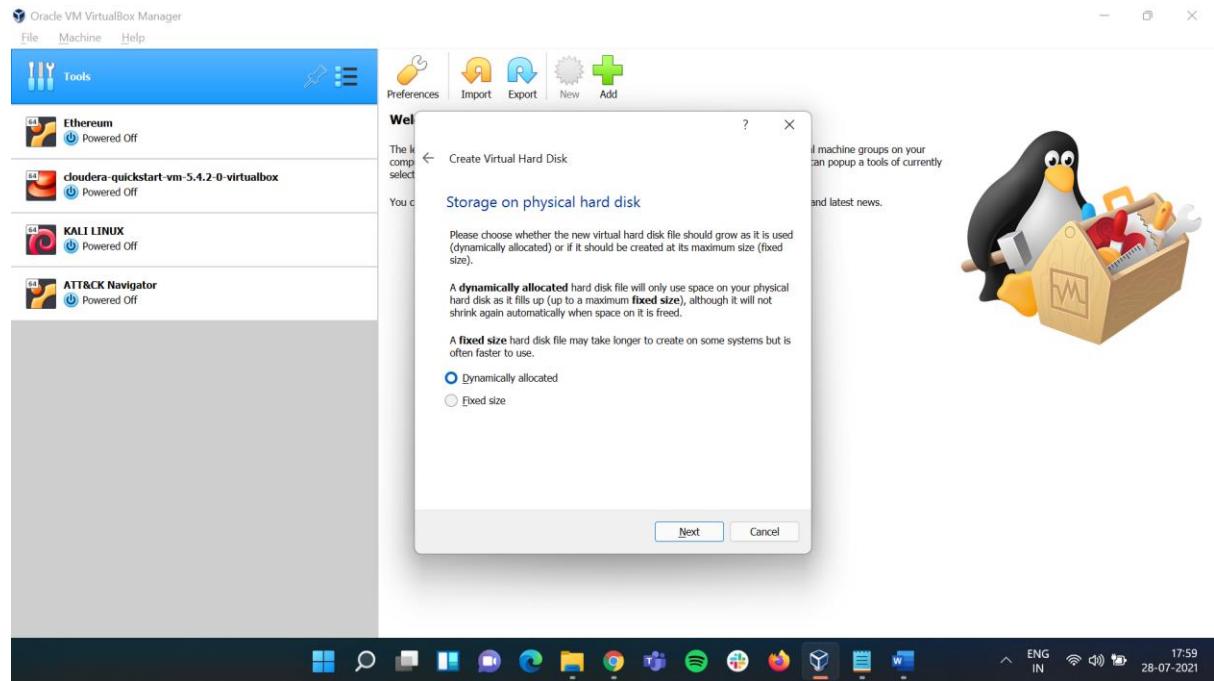
Under Hard Disk Sub-window leave it as default and click on **Create**.



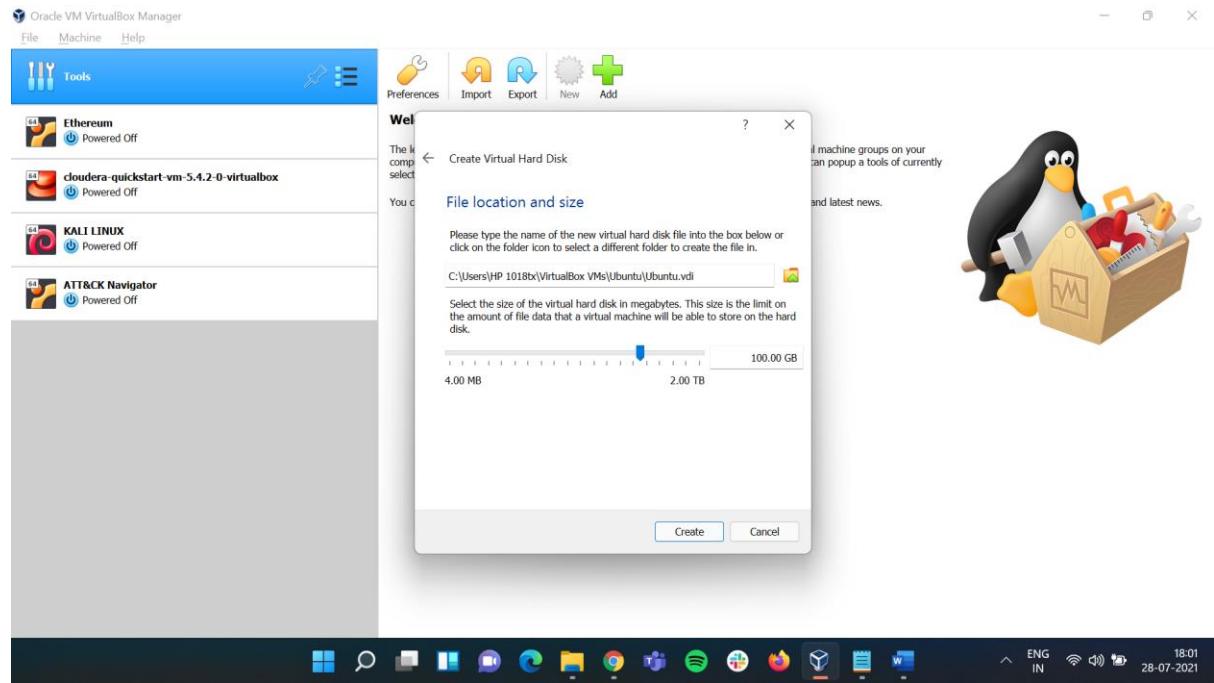
Under Hard Disk File Type Sub-window click on **VDI (Virtual Disk Image)**. After that click on **Next**.



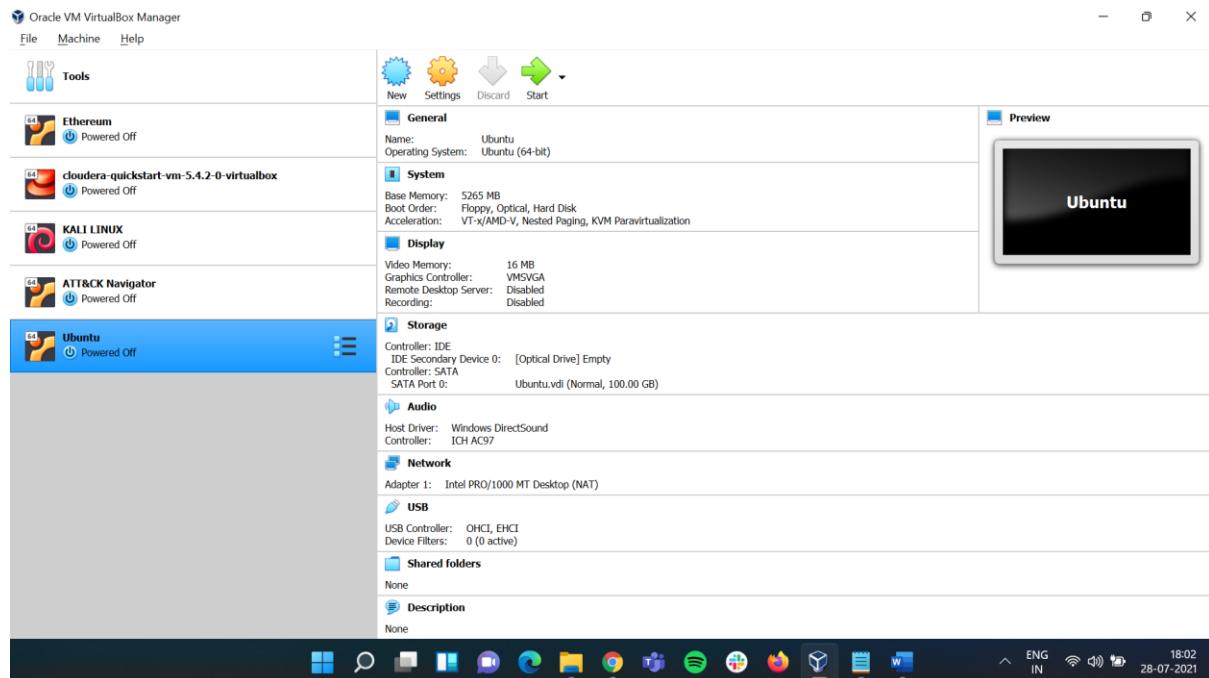
Under Storage on physical Hard Disk Sub-Window click on Dynamically Allocated.  
After that click on Next.



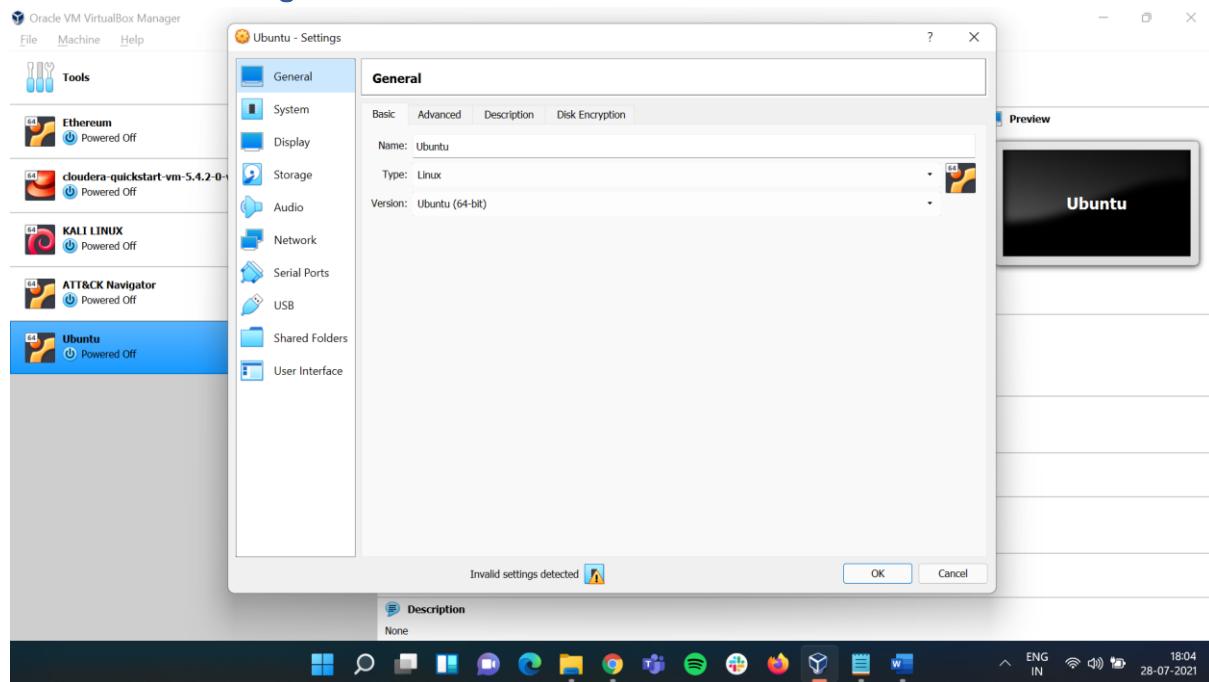
We are now at the last step. In the File location and Size Sub-Window change the memory size to 100.00 GB. After that click on Create.



Now Ubuntu has been added to Oracle VM.

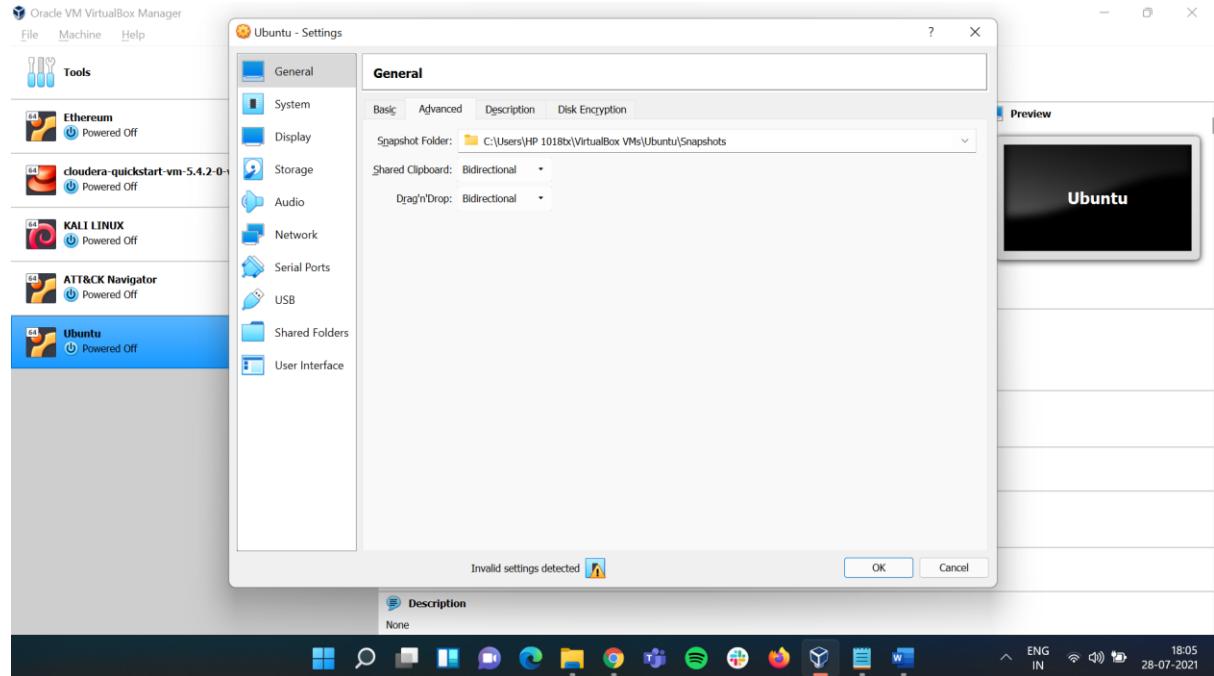


Here click on Settings

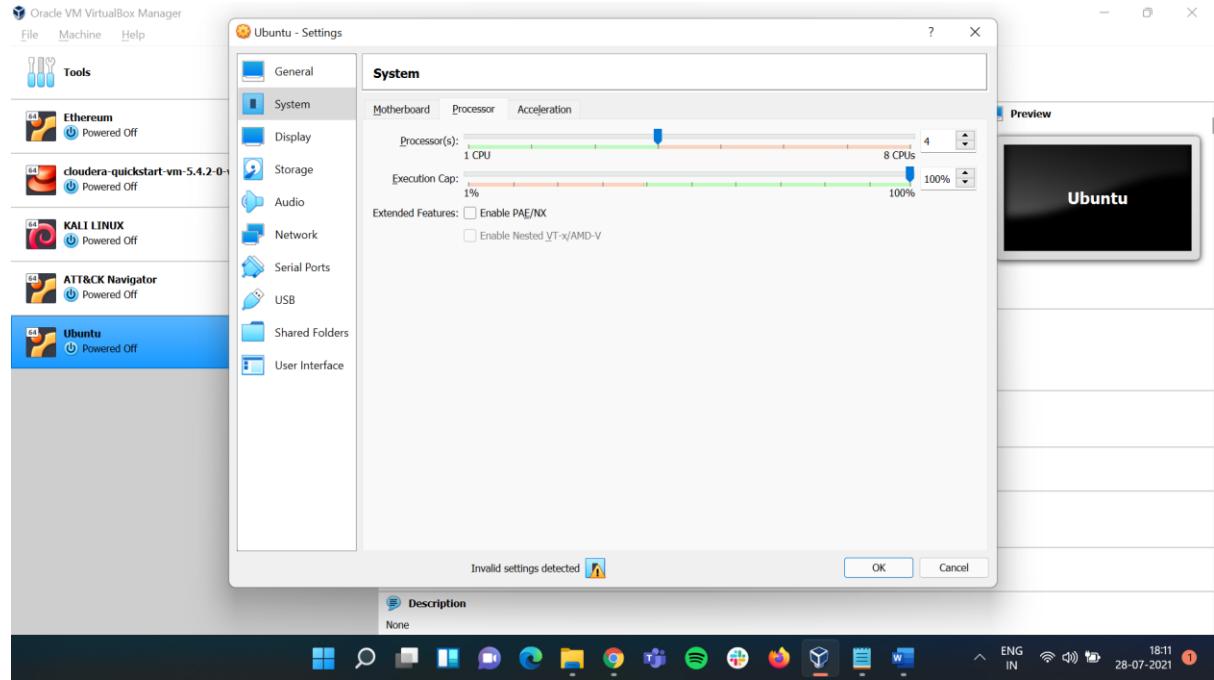


On the **Settings** Sub-window under

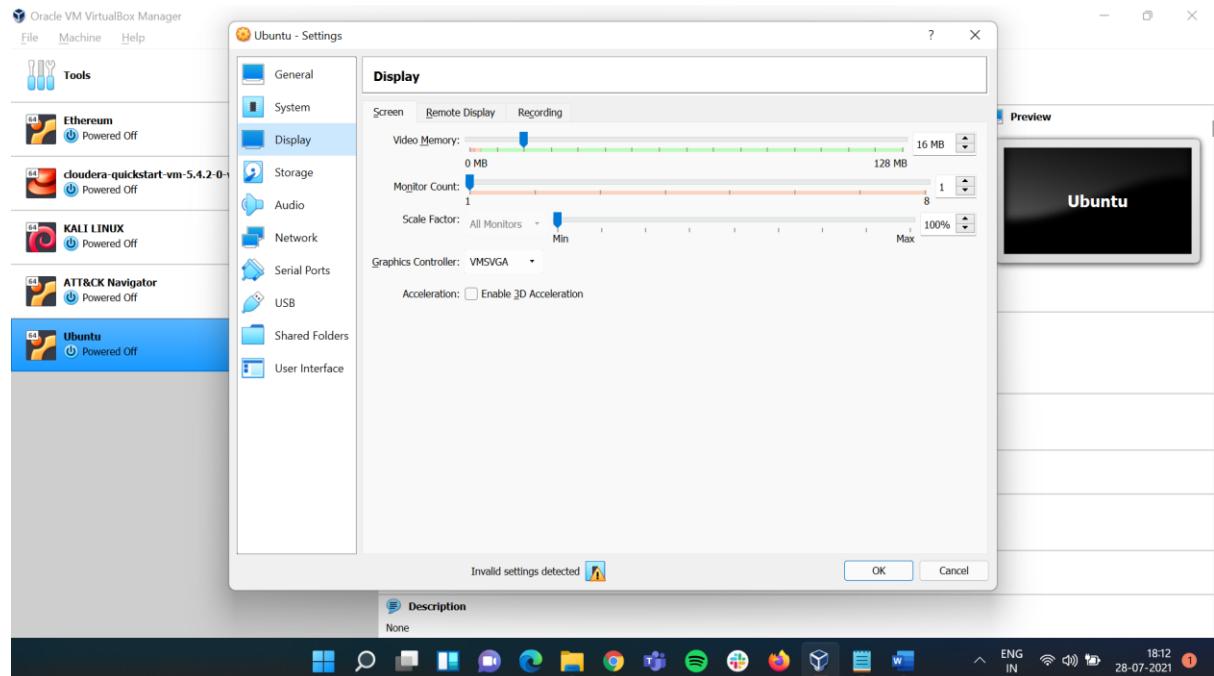
**General** click on **Advanced** and change **Shared Clipboard Drag'n'Drop** from **Disabled** to **Bidirectional**.



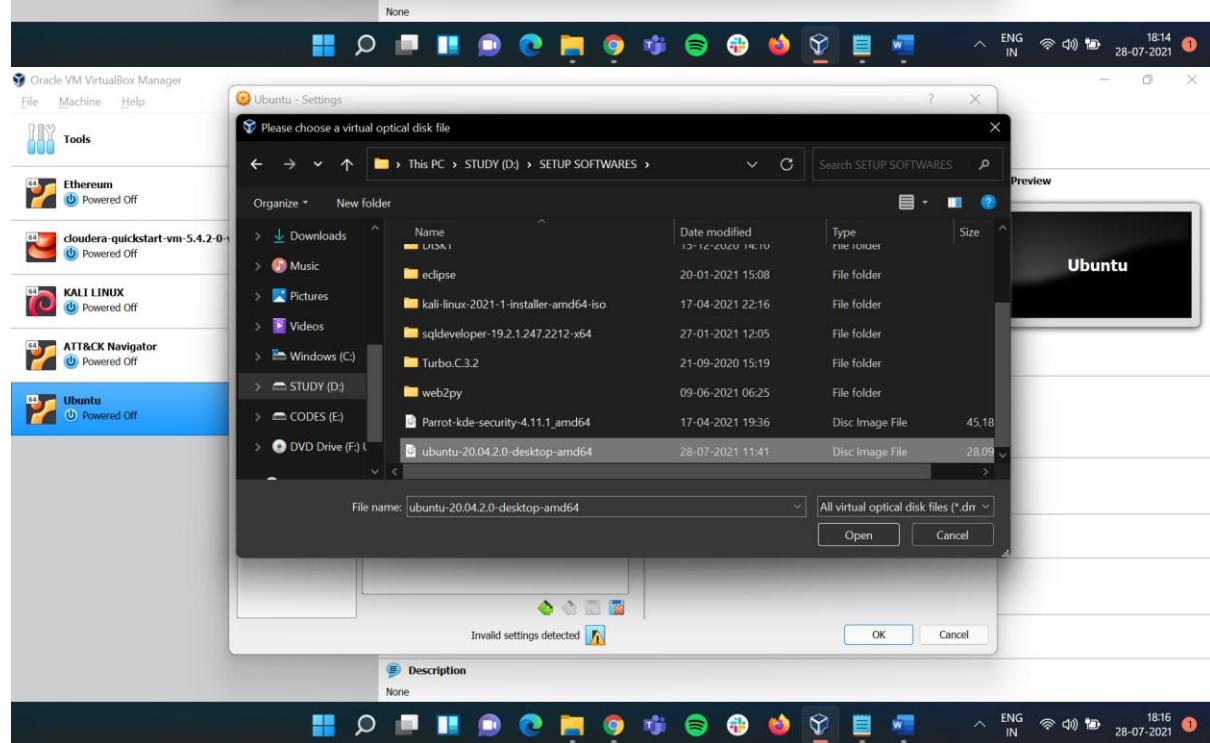
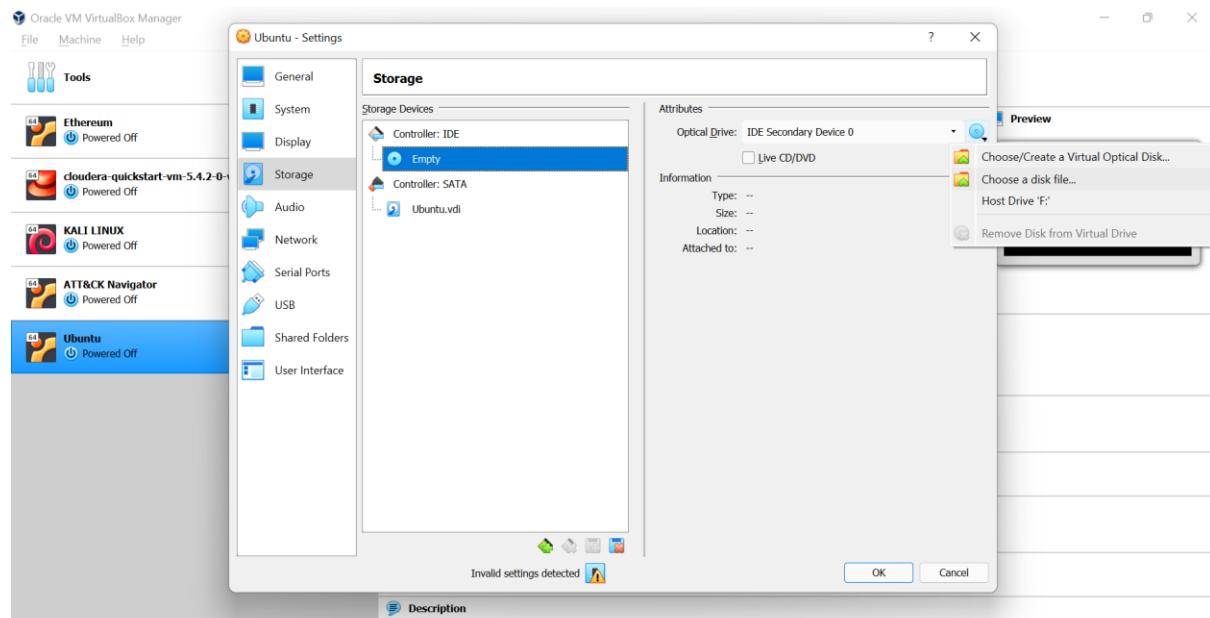
System click on Processor and change Processor(s) from 1 CPU to 4 CPU.



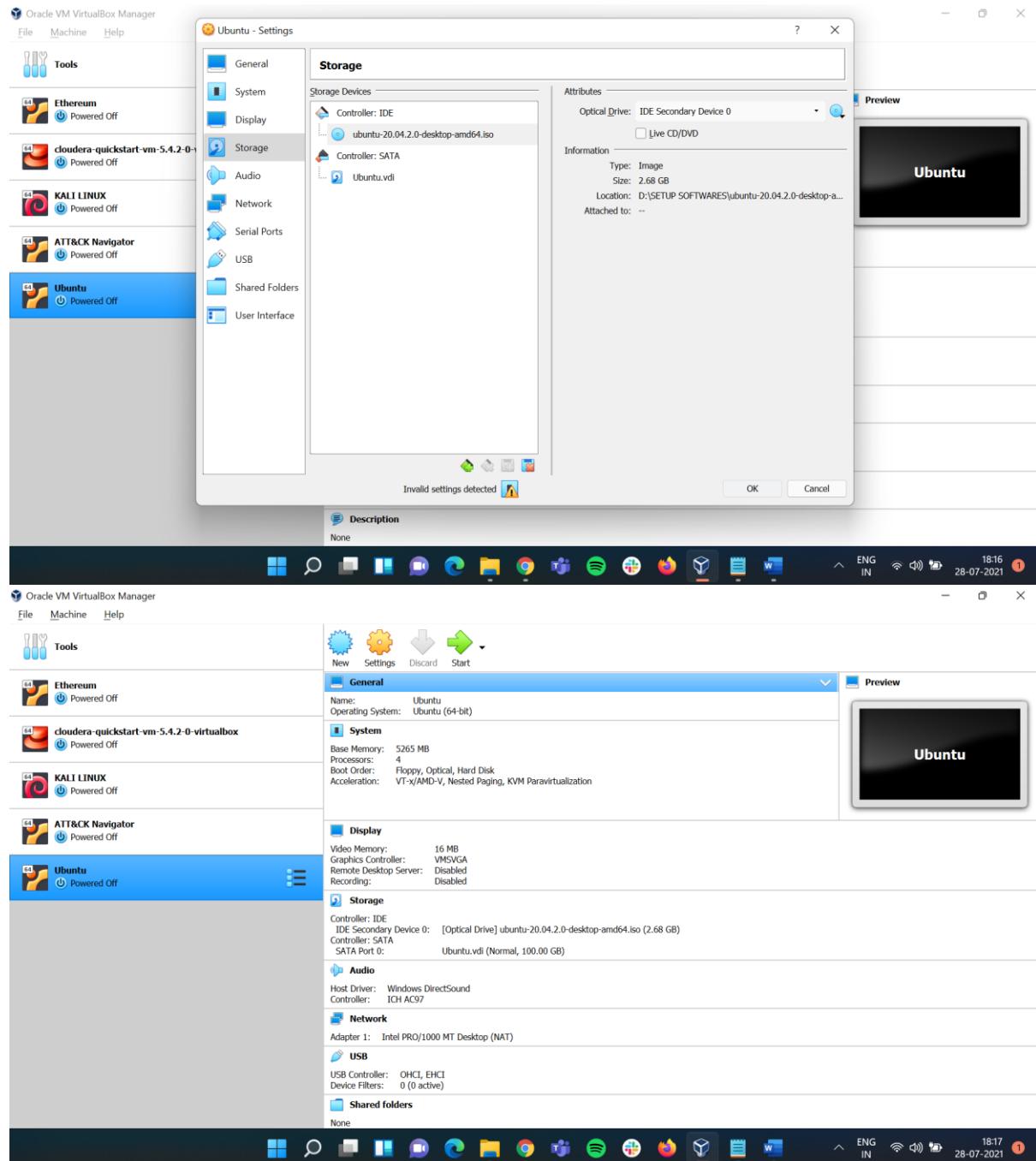
## Display leave it as default



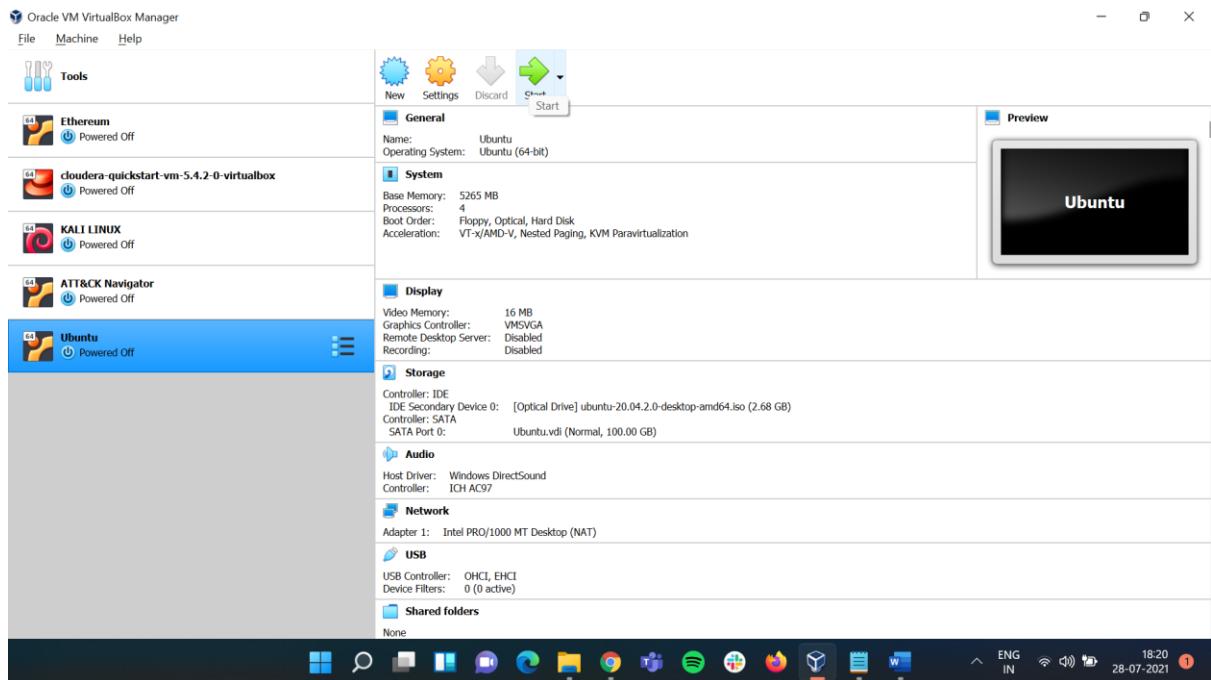
**Storage** click on **Controller : IDE – Empty** here we have to add the **ISO** file we downloaded for that click on the **disk icon** then on **Choose a disk file** and choose the ISO file



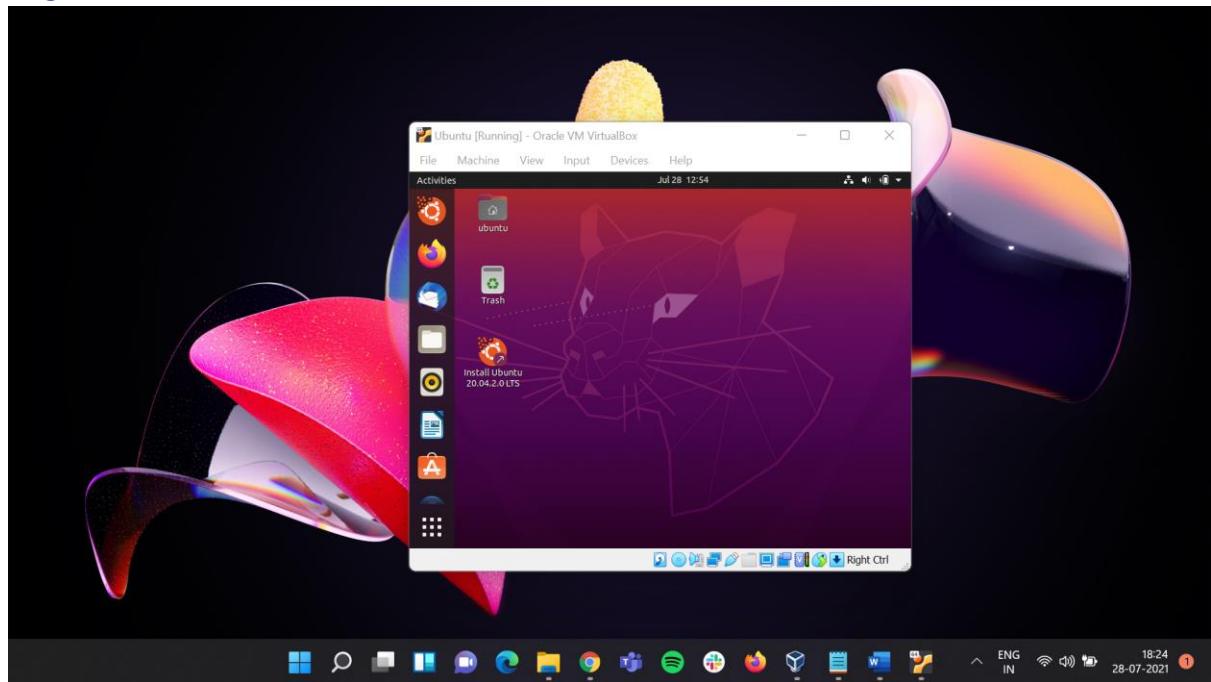
Once added click on **Ok** and then the main page will open.



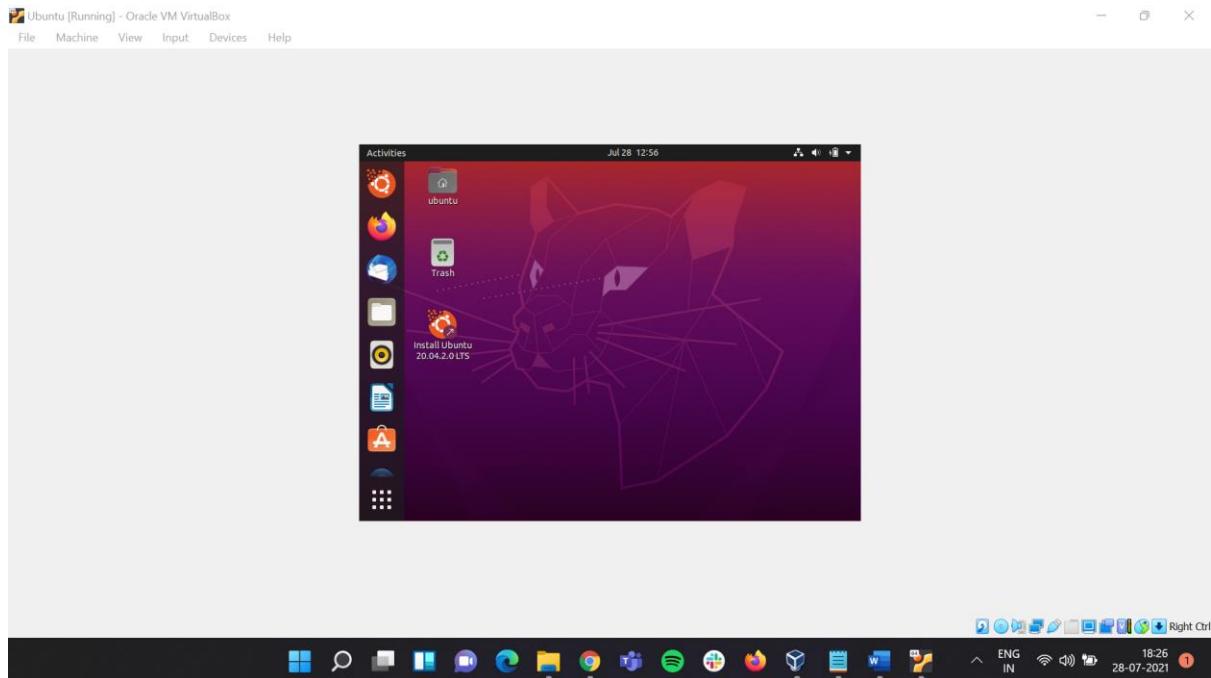
Once the above steps are followed click on **Start**.



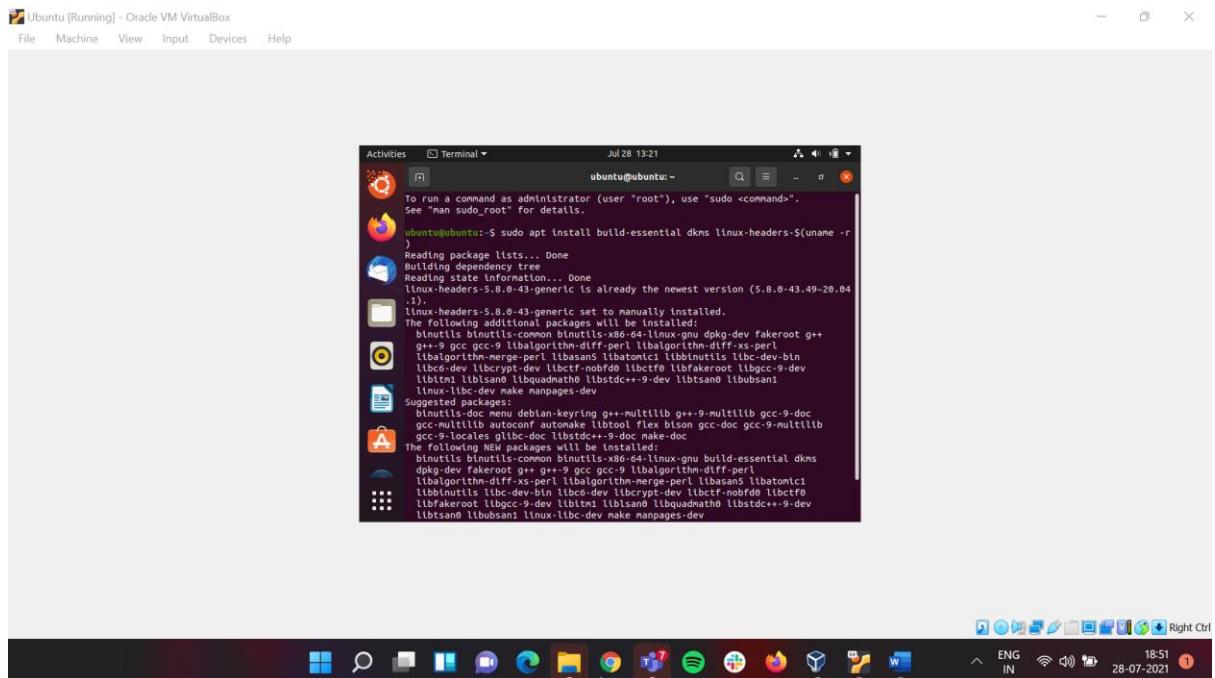
Once clicking on **Start** a new window will open with Ubuntu here set the language as English and Ubuntu will start up.

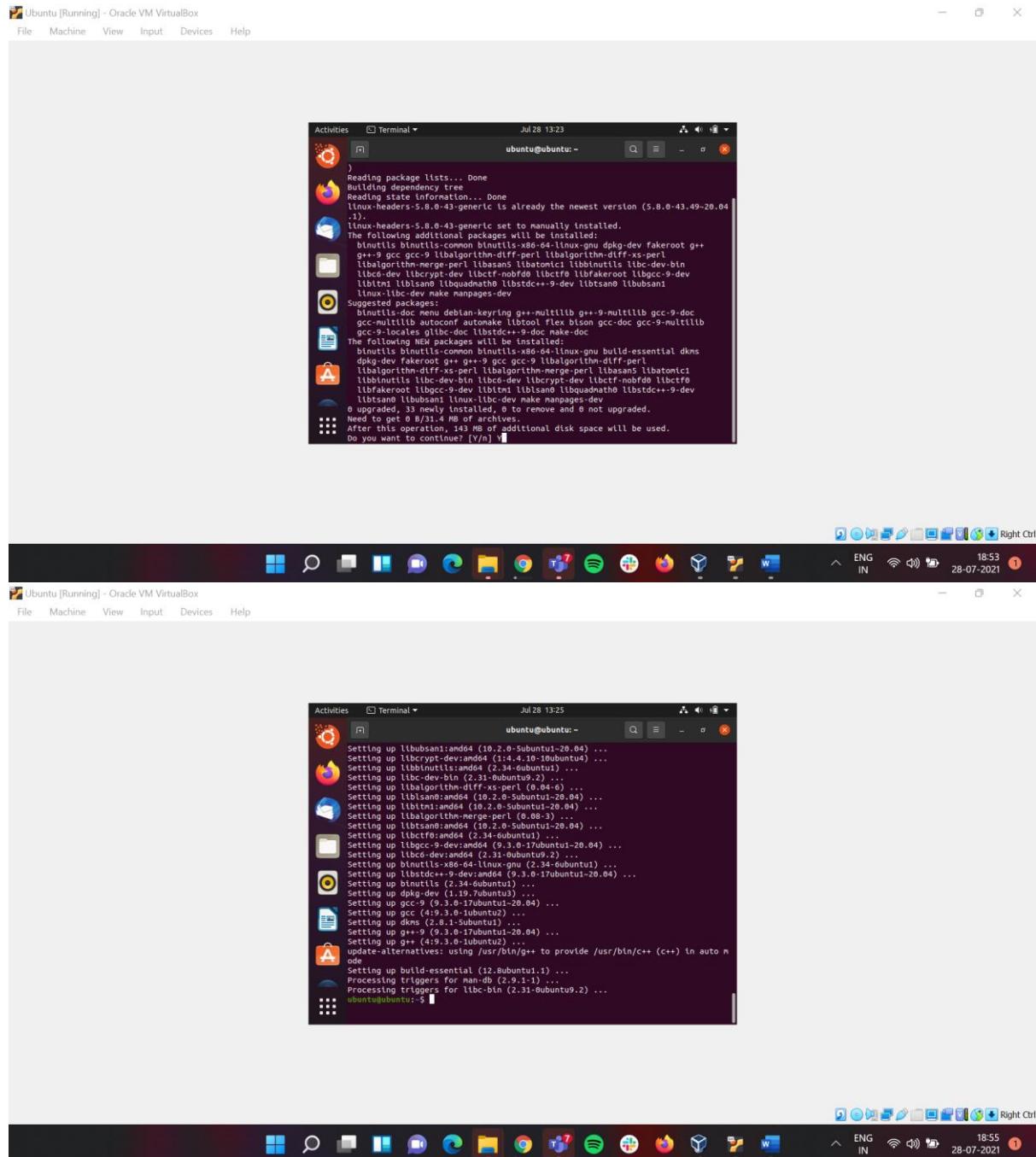


After this **Maximize the Main window** there you will see the **Ubuntu window** is not same as the main window.

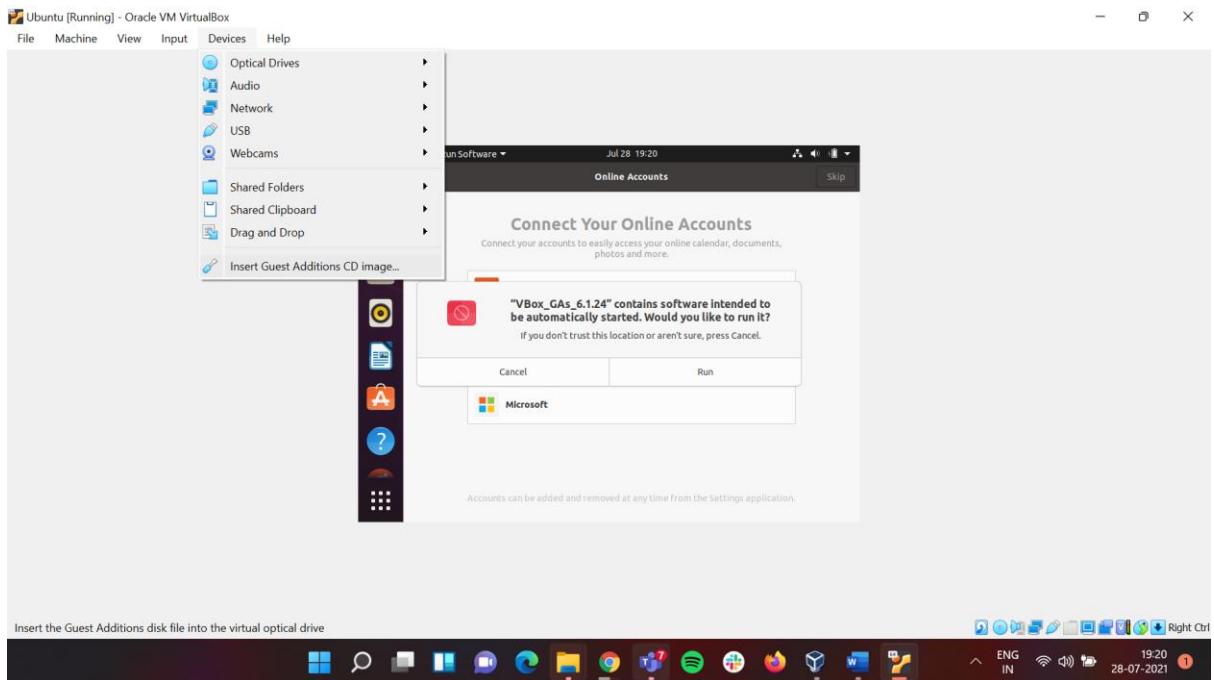


To resolve the error, open the **cmd** in Ubuntu and run the following code: `$ sudo apt install build-essential dkms linux-headers-$(uname -r)` and follow the rest of instructions

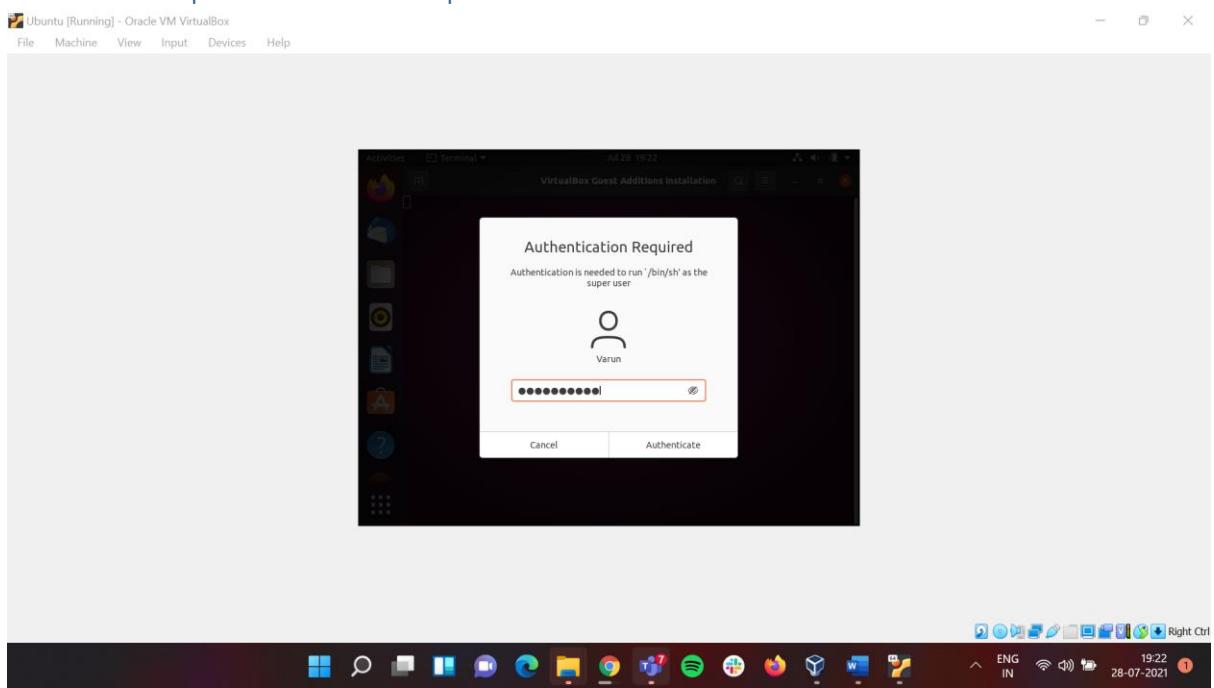




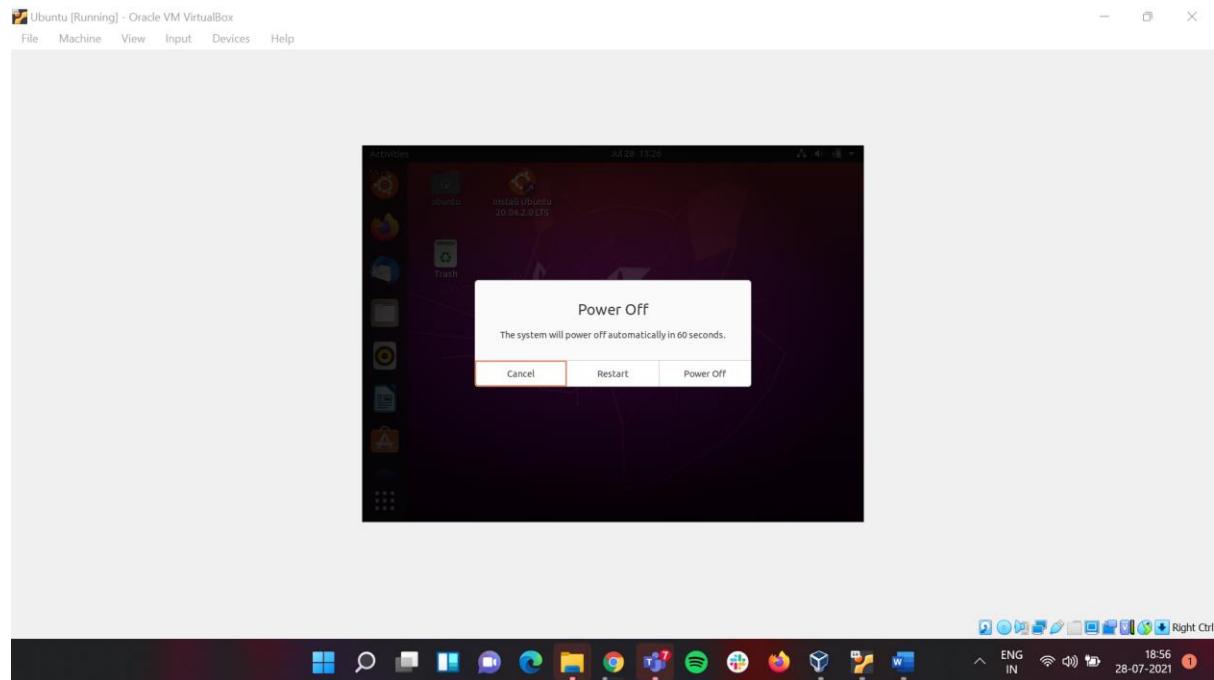
Once the code has been run successfully exit the cmd and click on **Devices** under that click on **Insert Guest Additions CD Image**. Then there will be a prompt click on **Run**.



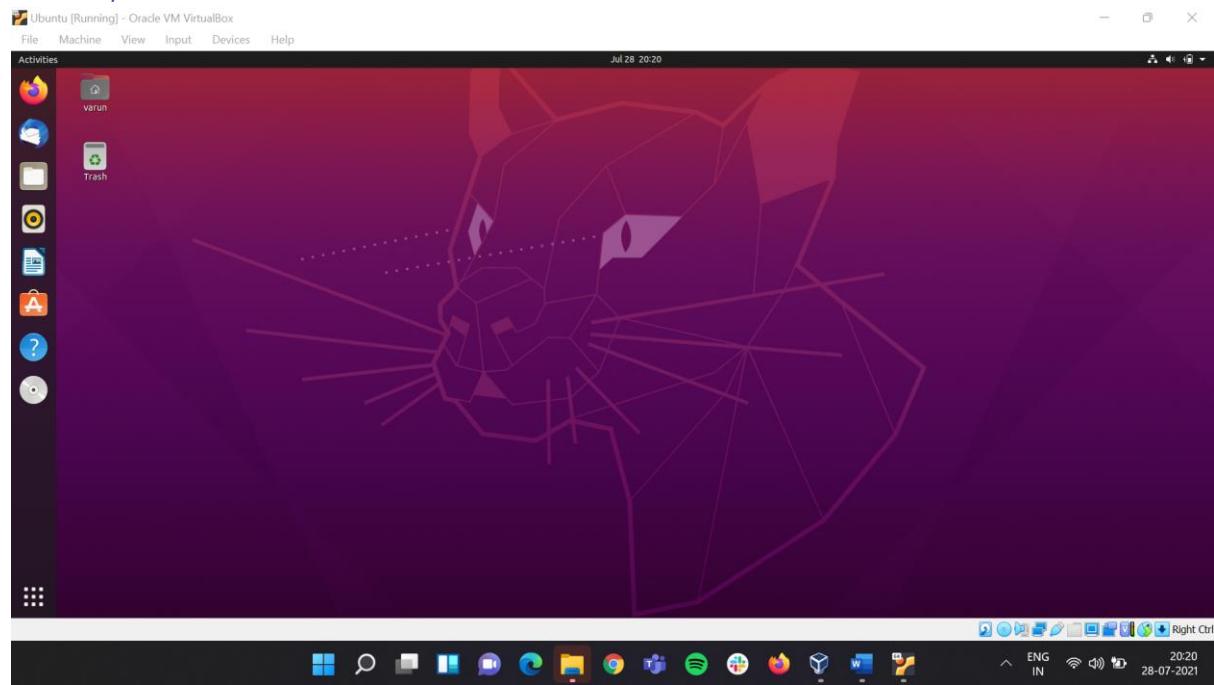
It will ask for password add the password and click on authenticate



## Now Restart Ubuntu



Hence you can see the issue has been resolved.



## Conclusion

Hence we were able to install Oracle VM and Ubuntu on Windows OS.