Linux Installation:

Linux Structure & Diff. Ways to Install Linux

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Linux Structure

Operating System is a program that mediates between the user and the computer hardware. Hides hardware details of the computer system by creating abstractions (virtual machines).

Examples:

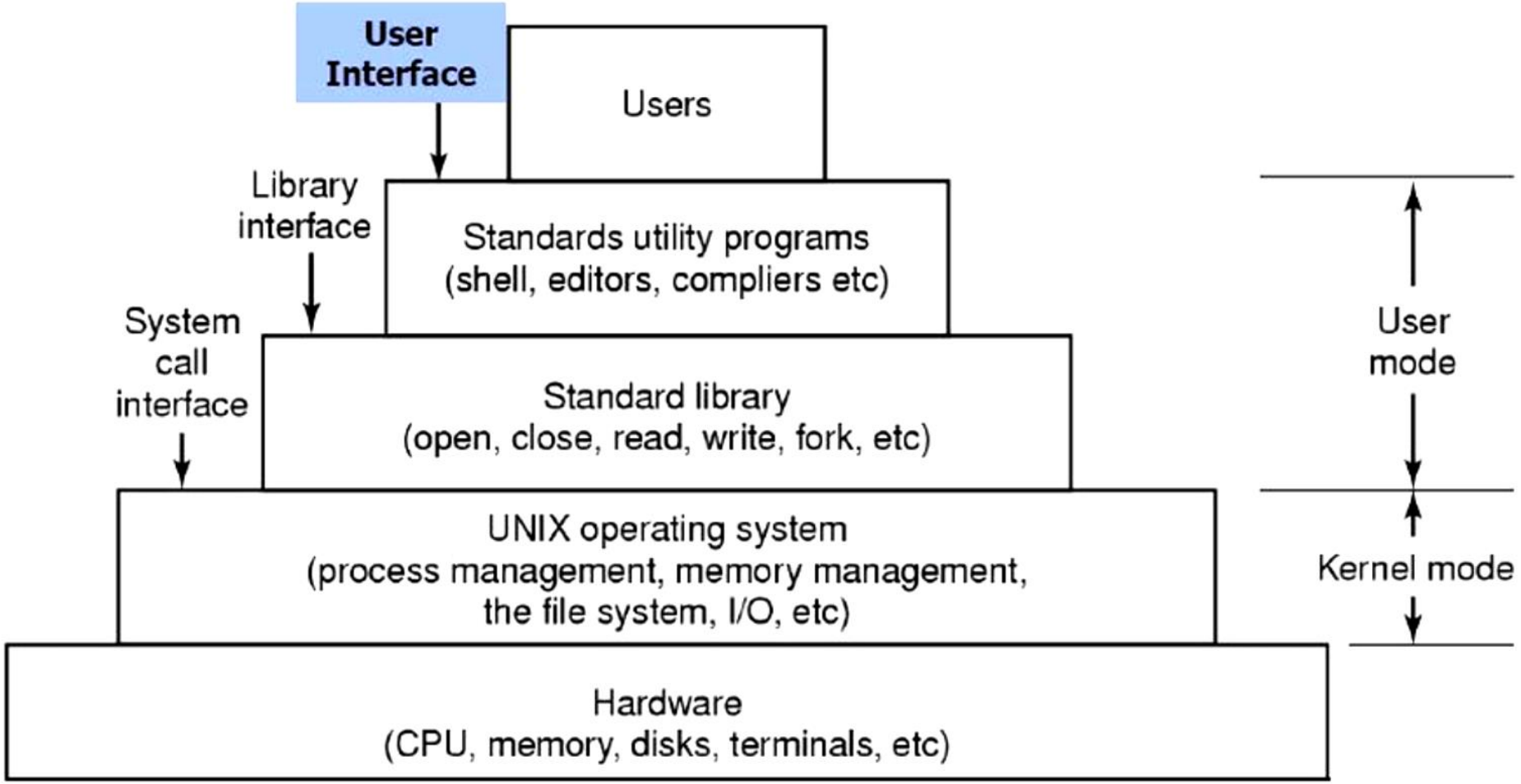
- **a unified way to access external devices,**
- **sets of disk blocks seen as files with symbolic names,**
- **large, fast, dedicated operating memory,**
- **concurrent program execution (as an abstraction of parallelism), – a container provides OS-level virtualization by abstracting the „user space”.**

Linux Structure

Manages Resources:

- **resources are objects necessary to execute the program, e.g. memory, processor (CPU), input/output, communication ports,**
- **strategies for allocation and deallocation of resources (memory management, processor management, file management, device management),**
- **efficiency of resource management determines the efficient operation of computer hardware.**

Other activities: security, job accounting, error-detecting tools, etc.



Computer system layers (source: Stallings, Operating Systems)

Ways to Install Linux on your System:

Linux is an open-source operating system that is free to download and install. Anyone who knows how to program can change and create their own operating system to meet their needs. It has become easier to use over the years and now has a lot of features, such as:

When used with servers, reliable.

No need of virus protection

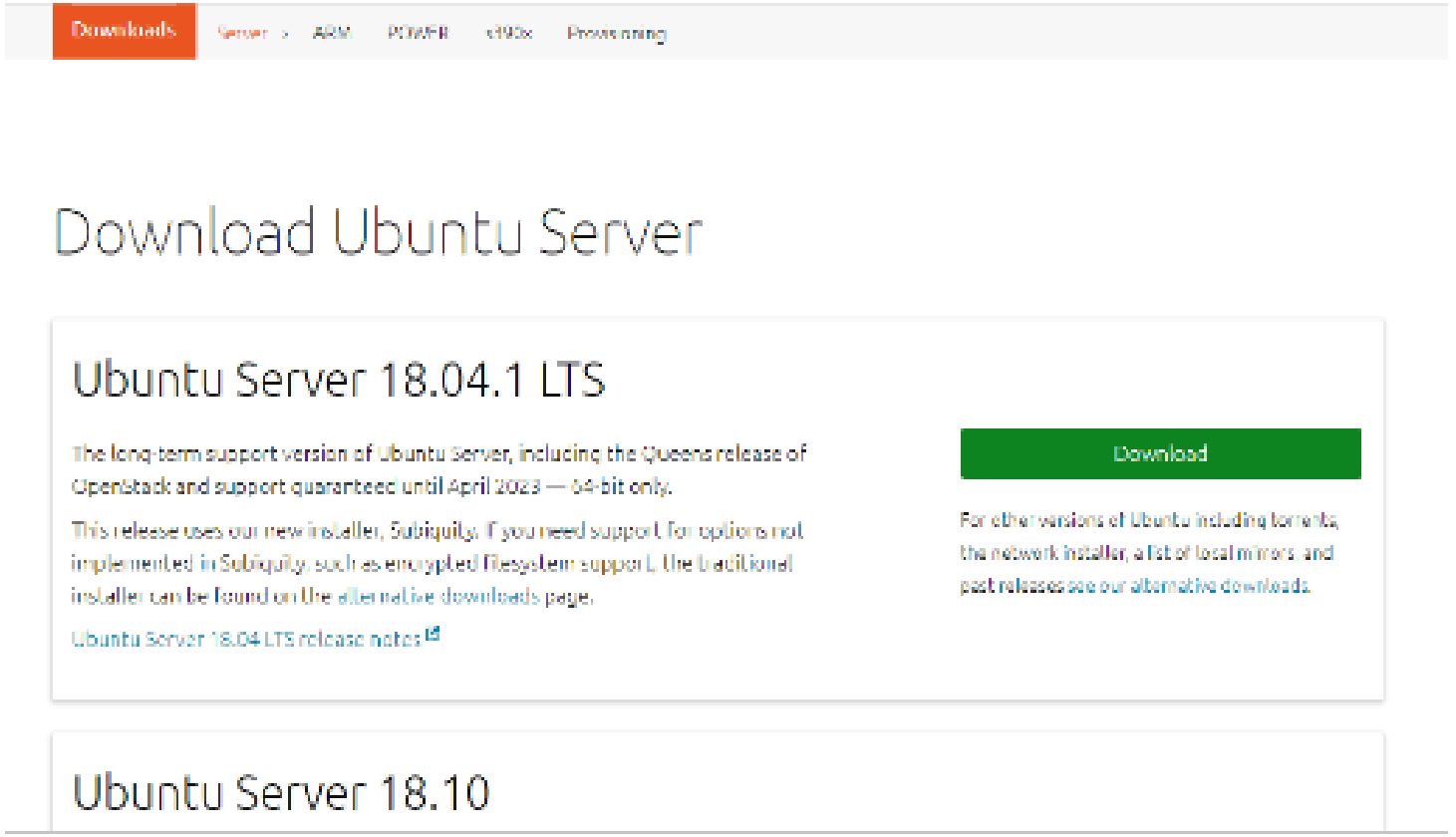
A Linux server can run without stopping for many years if it is set to boot.

It has a lot of different versions, like Ubuntu, Fedora, Redhat, and Debian, but they all run on top of Linux servers. Installation is the same for all distributions, so we'll talk about Ubuntu here.

So, let's start using this great operating system in one of the ways below.

A. Install Linux Using CD-ROM or USB Stick

Download .iso or the ISO files on a computer from the internet and store it on the CD-ROM or USB stick after making it bootable using Pen Drive Linux and UNetBootin

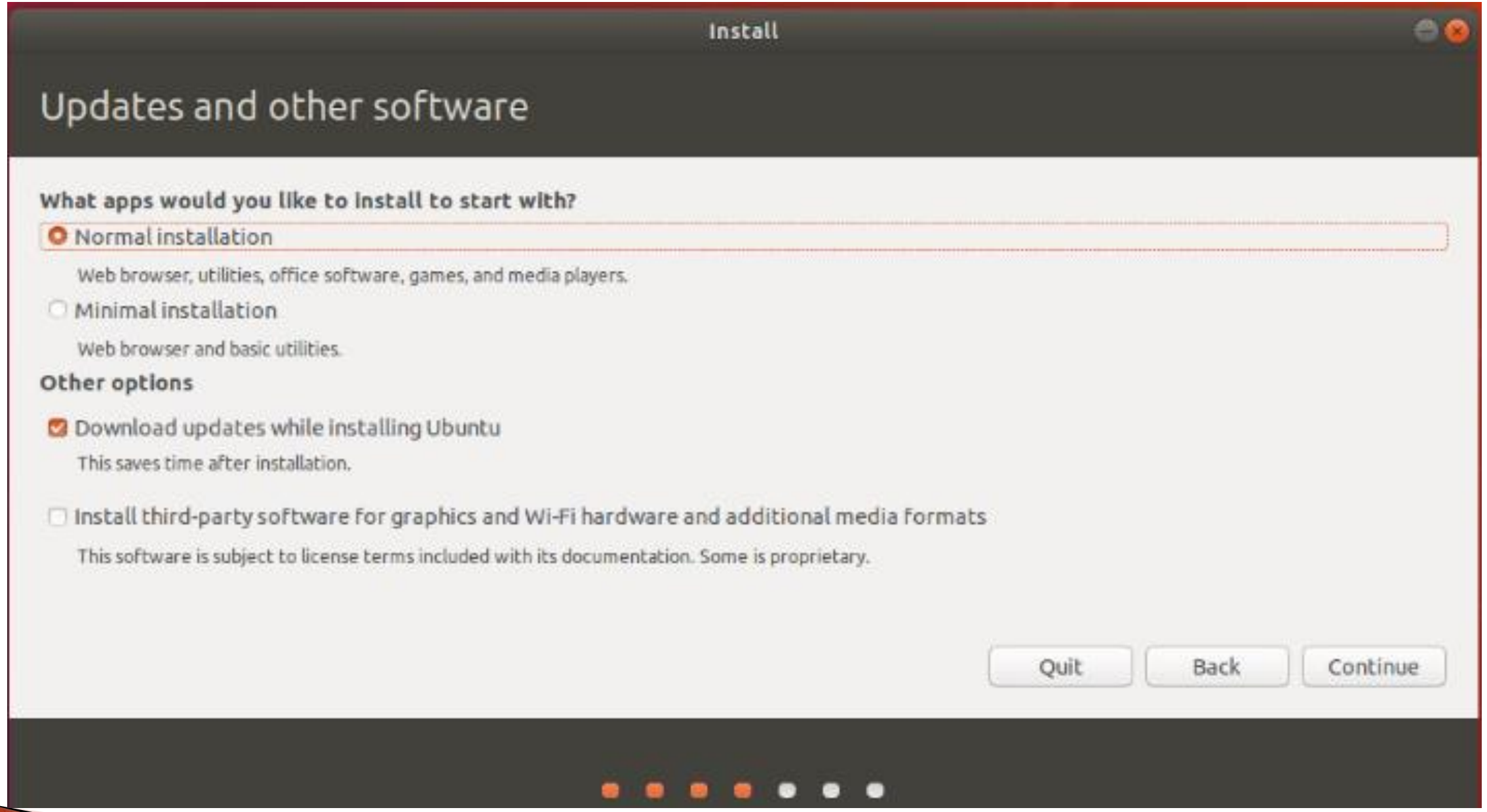


1. Boot into the USB Stick

You need to restart your computer after attaching CD –ROM or pen drive into the computer. Press enter at the time of boot, here select the CD-ROM or pen drive option to start the further boot process. Try for a manual boot setting by holding F12 key to start the boot process. This will allow you to select from various boot options before starting the system. All the options either it is USB or CD ROM or number of operating systems you will get a list from which you need to select one.

Note:- You will see a new screen when your computer boots up called “GNU GRUB”, a boot loader that handles installations for Linux. This screen will only appear in case there is more than one operating system.

- Set the keyboard layout.
- Now you will be asked What apps would you like to install to start with Linux? The two options are ‘Normal installation’ and ‘Minimal installation’.

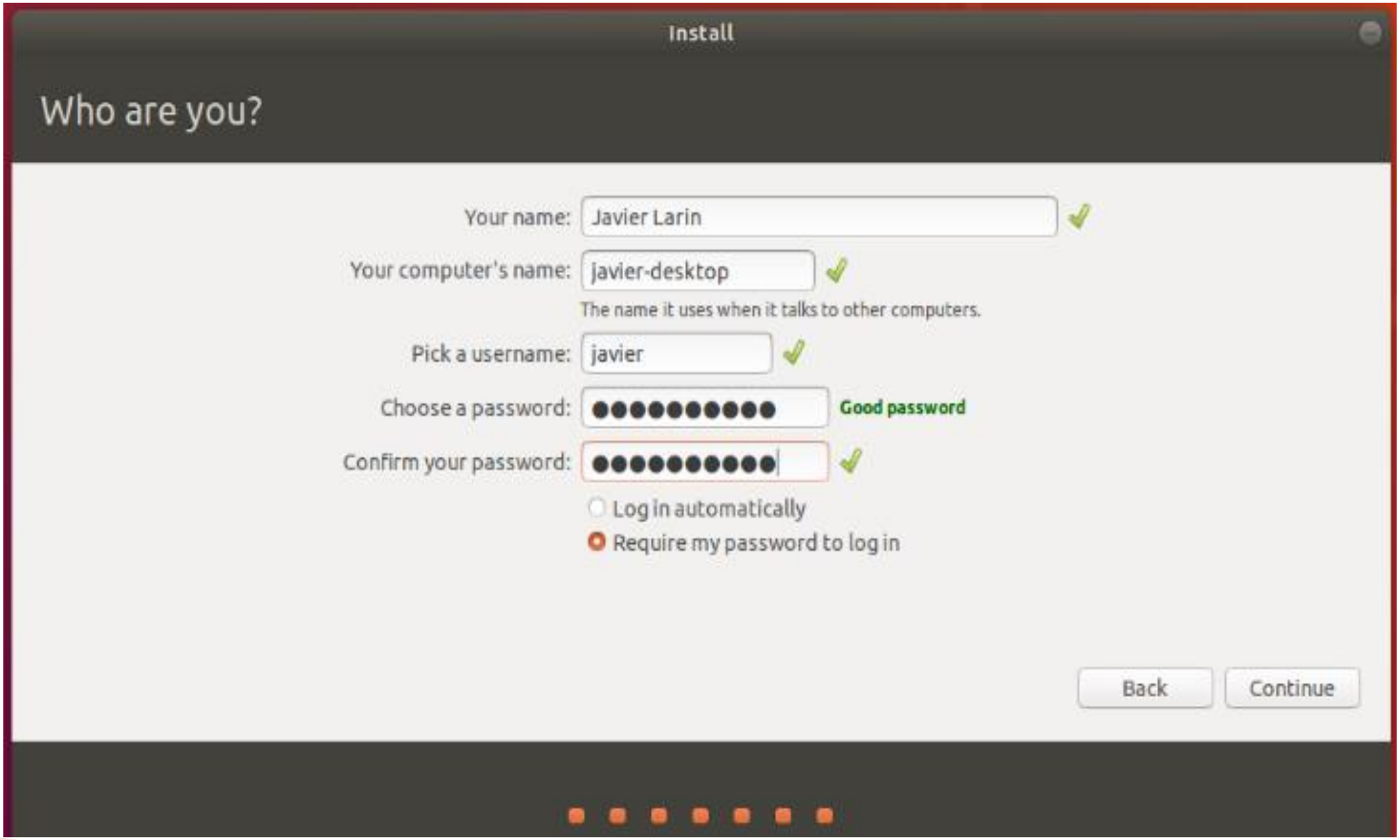


2. Derive Selection

Select the drive for the installation of OS to be completed. Select “Erase Disk and install Ubuntu” in case you want to replace the existing OS otherwise select the “Something else” option and click INSTALL NOW.

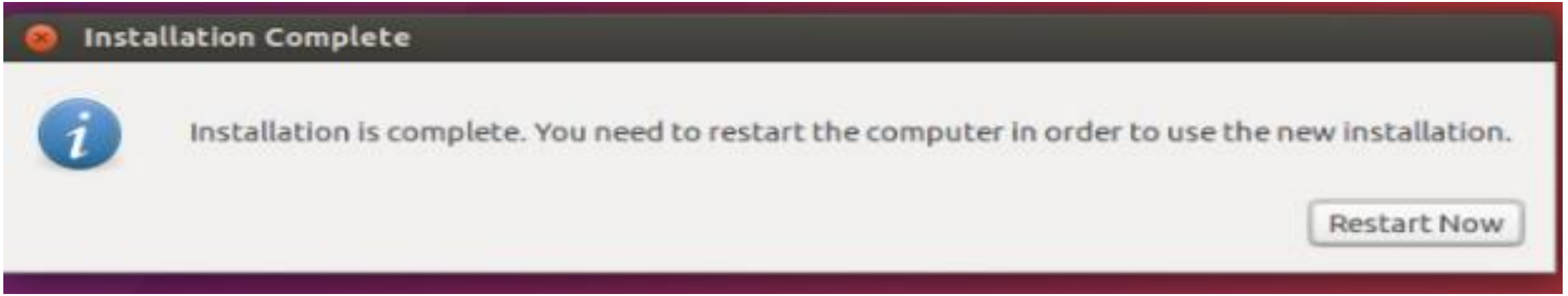
3. Start Installation

- A small panel will ask for confirmation. Click Continue in case you don’t want to change any information provided. Select your location on the map and install Linux.
- Provide the login details.



4. Complete the installation process

After the installation is complete you will see a prompt to restart the computer.



- You can also download drivers of your choice through the System Settings menu. Just follow these steps:
- Additional Drivers > select the graphics driver from the list.
- Many useful drivers, such as Wi-Fi drivers, will be available on the list.
- There are many other options also available to use and install Linux

B. Install Linux Using Virtual Box VMWARE

In this way, nothing will affect your Windows operating system.

What Are Requirements?

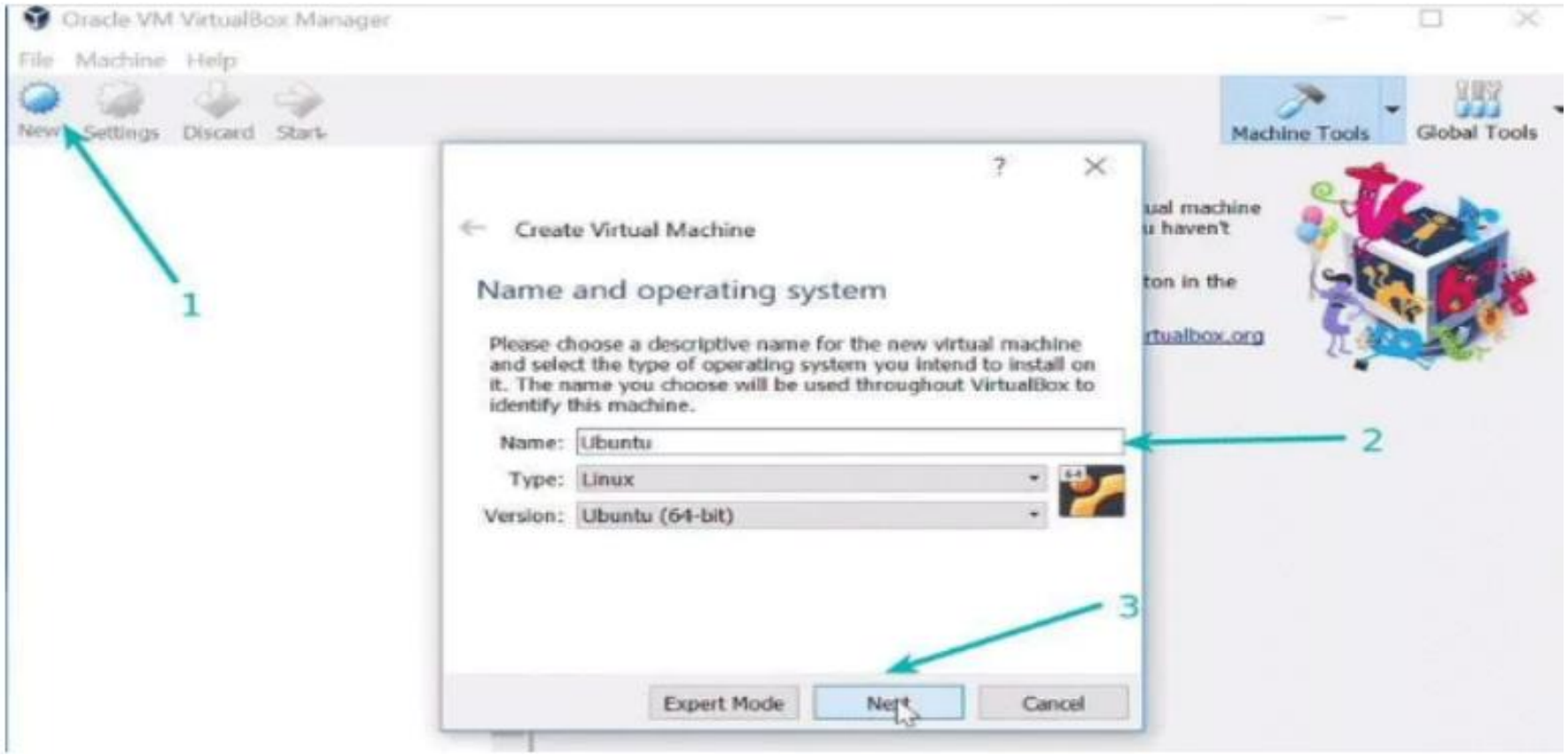
- Good internet connection
- At least 4GB RAM
- At least 12GB of free space

Steps:

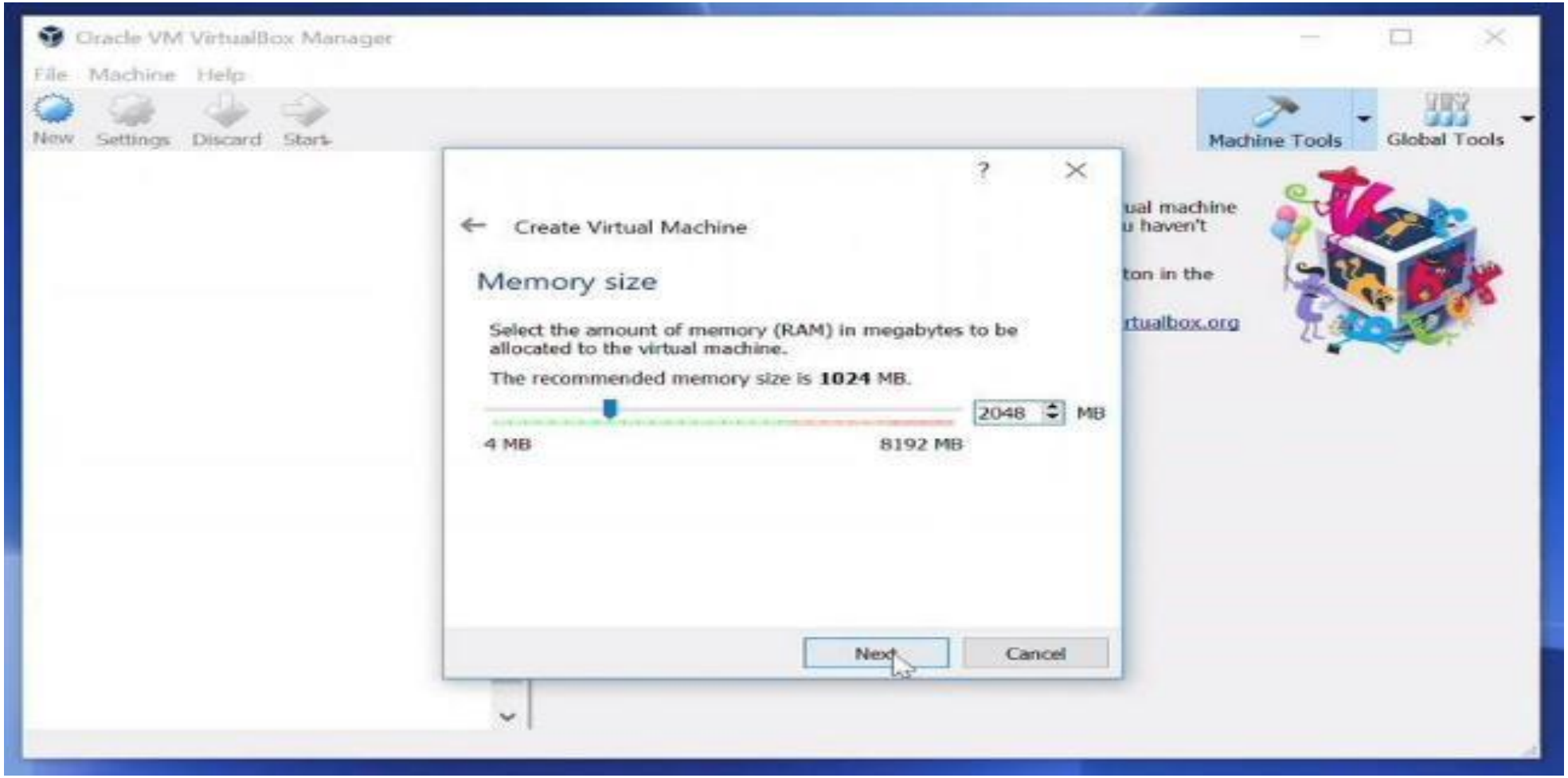
1. Download the VIRTUAL BOX from the original ORACLE VIRTUAL BOX site. You can refer to below link https://www.virtualbox.org/

2. Install Linux Using Virtual Box

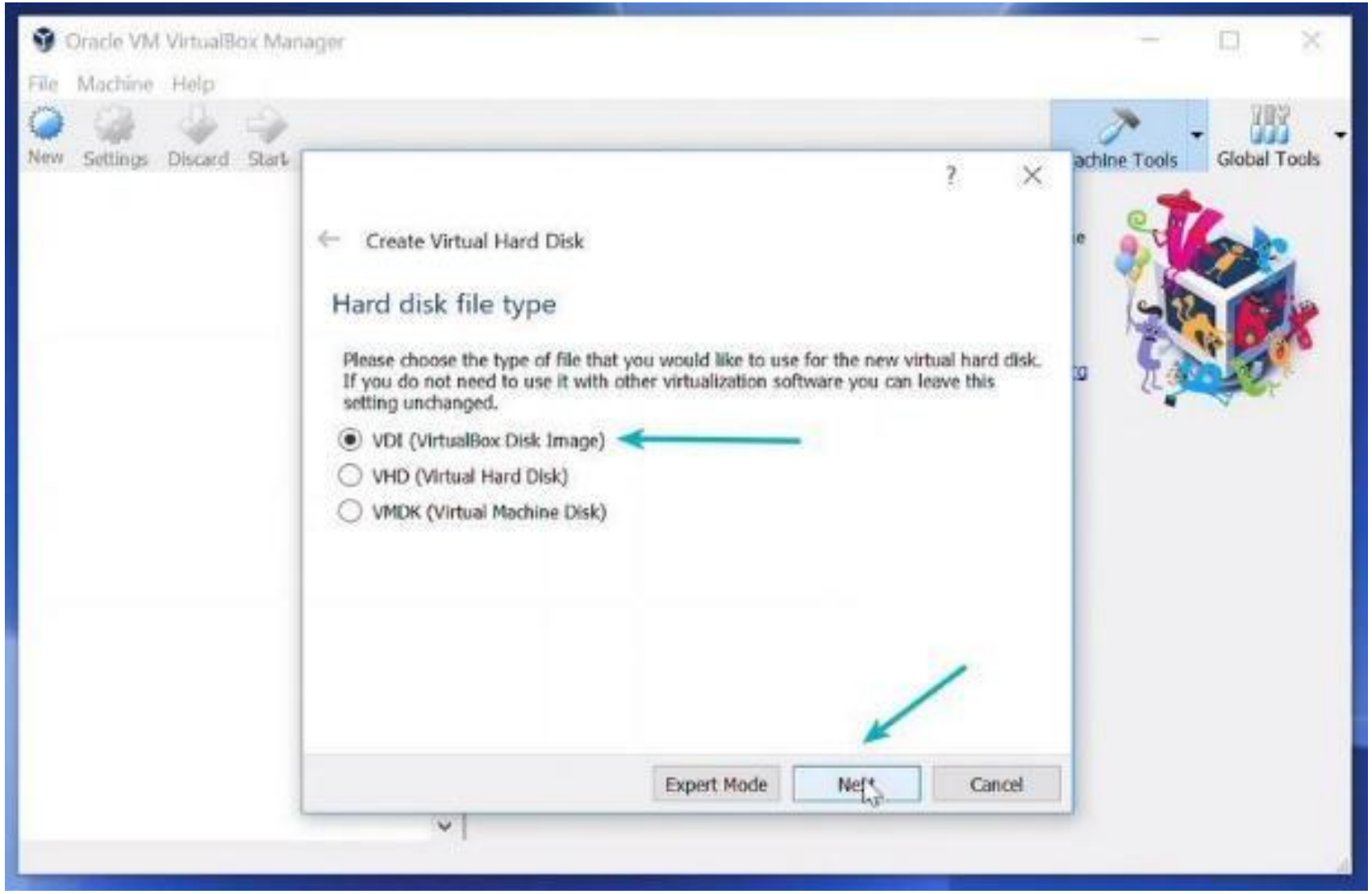
Use the .iso file or ISO file that can be downloaded from the internet and start the virtual box. https://www.virtualbox.org/



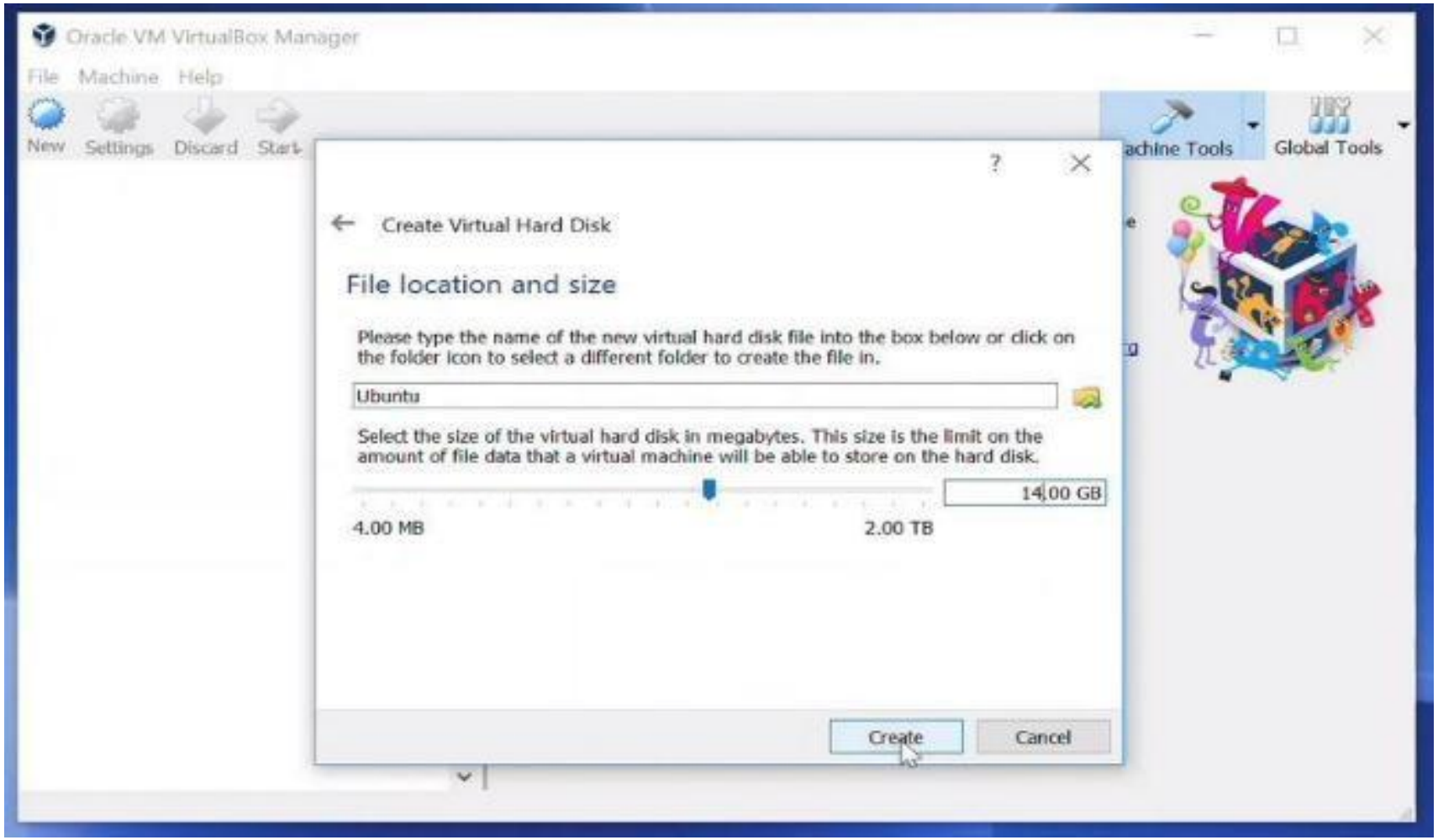
Here we need to allocate RAM to virtual OS. It should be 2 GB as per minimum requirement.



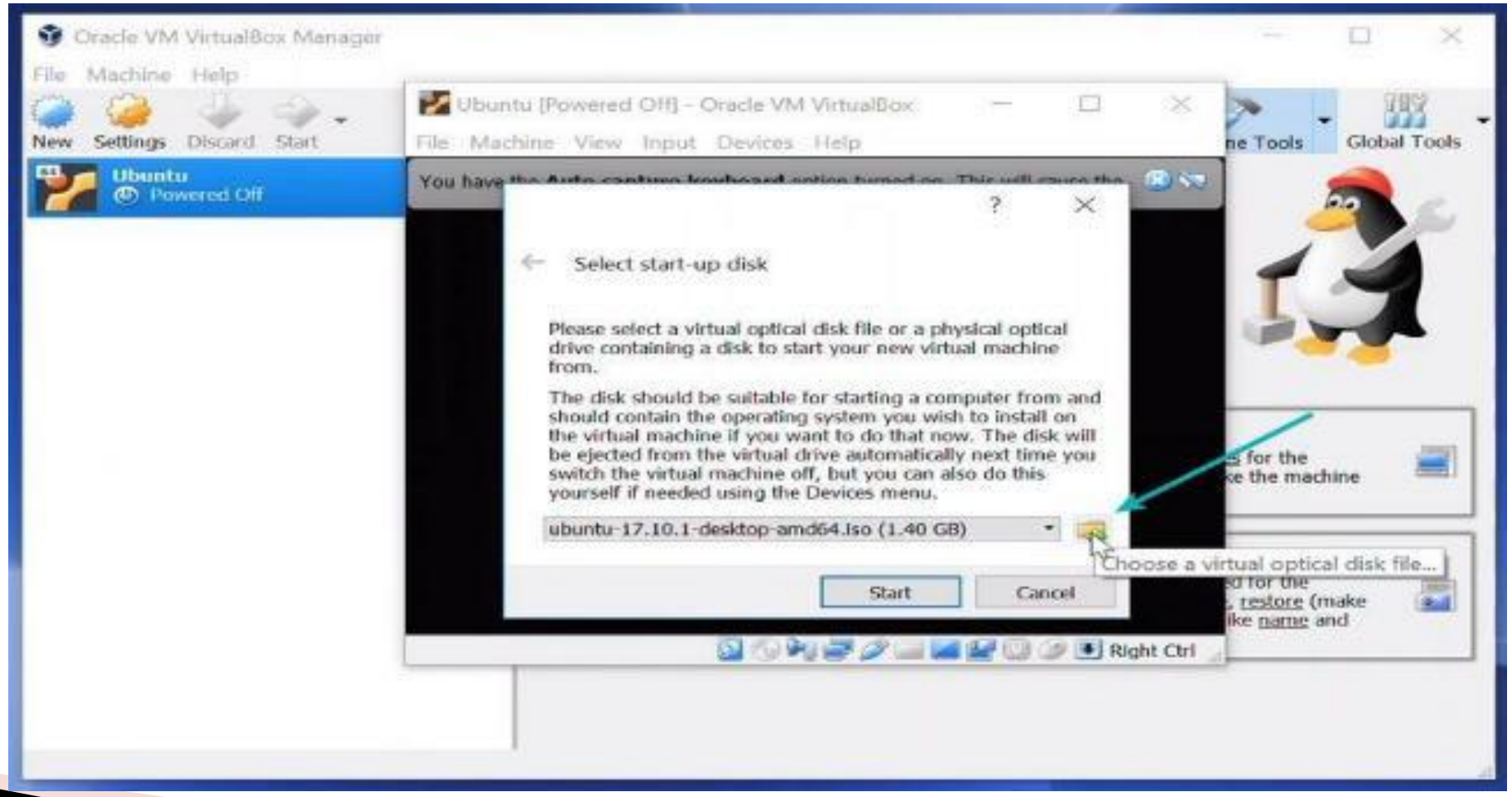
Choose an option under Create a virtual disk.



Choose a type of storage on physical hard disk. And choose the disk size(min 12 GB as per requirement)

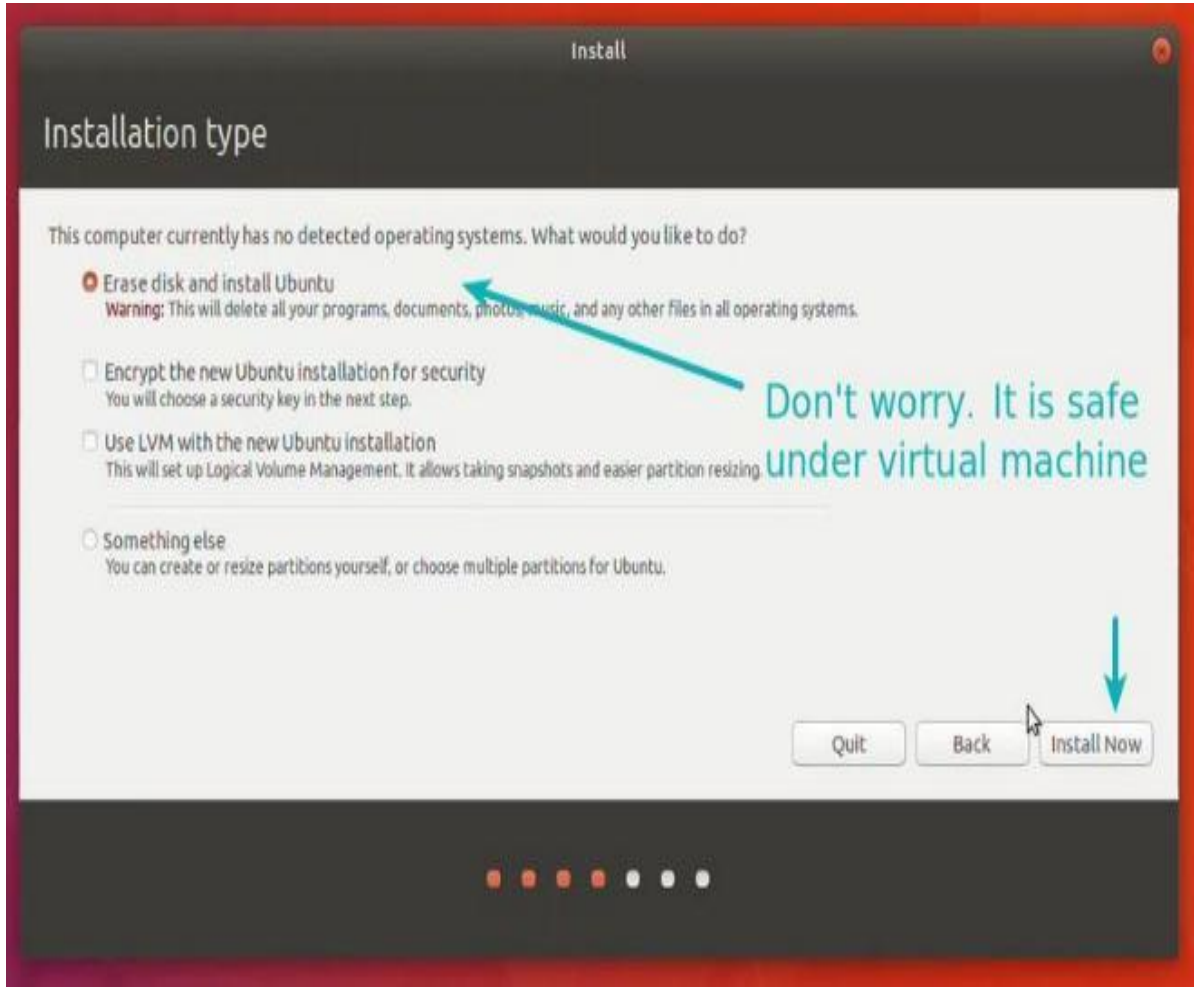


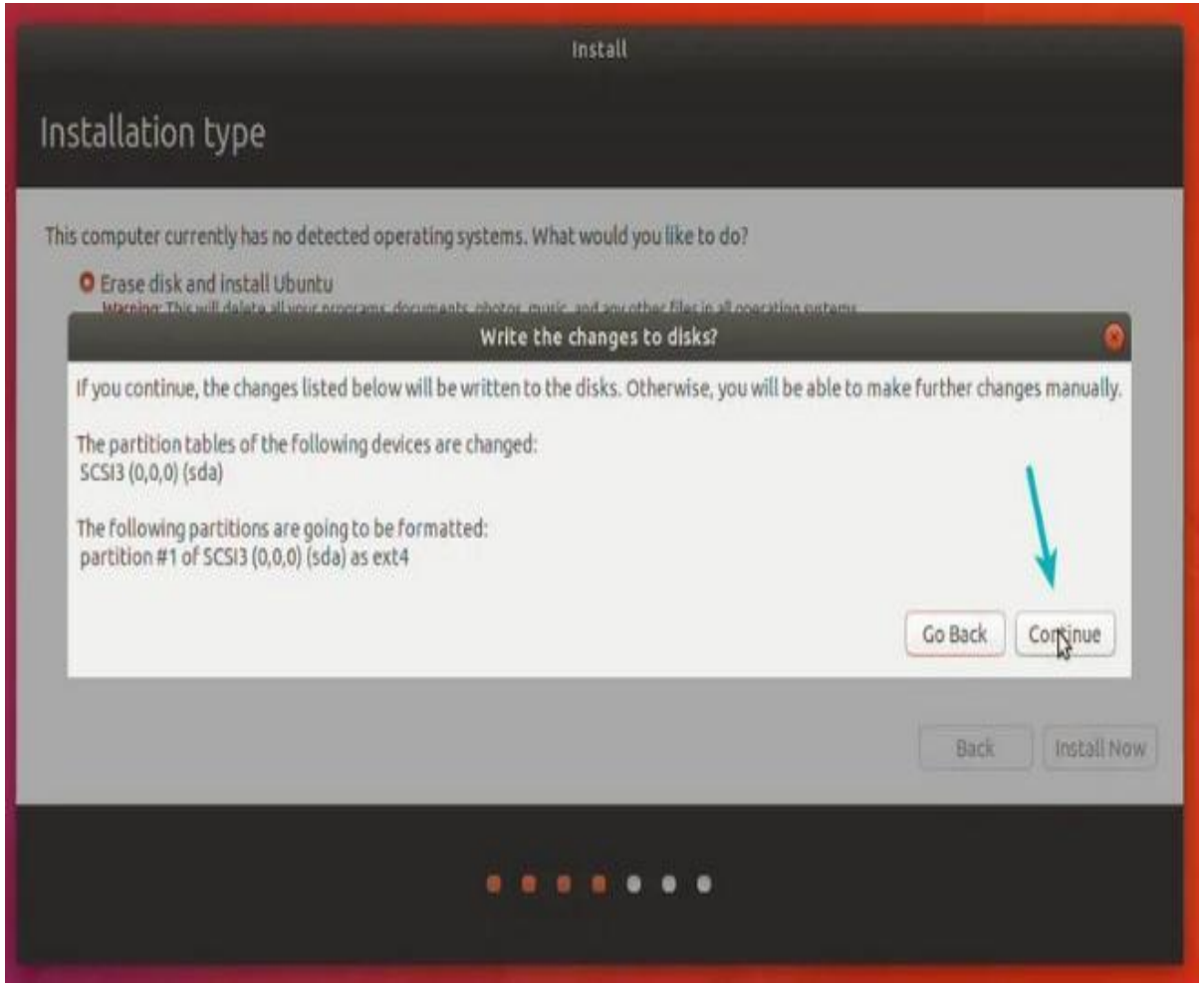
Click on create option and then click on the START button to start the virtual box and browse to the location of the .iso file of the OS.

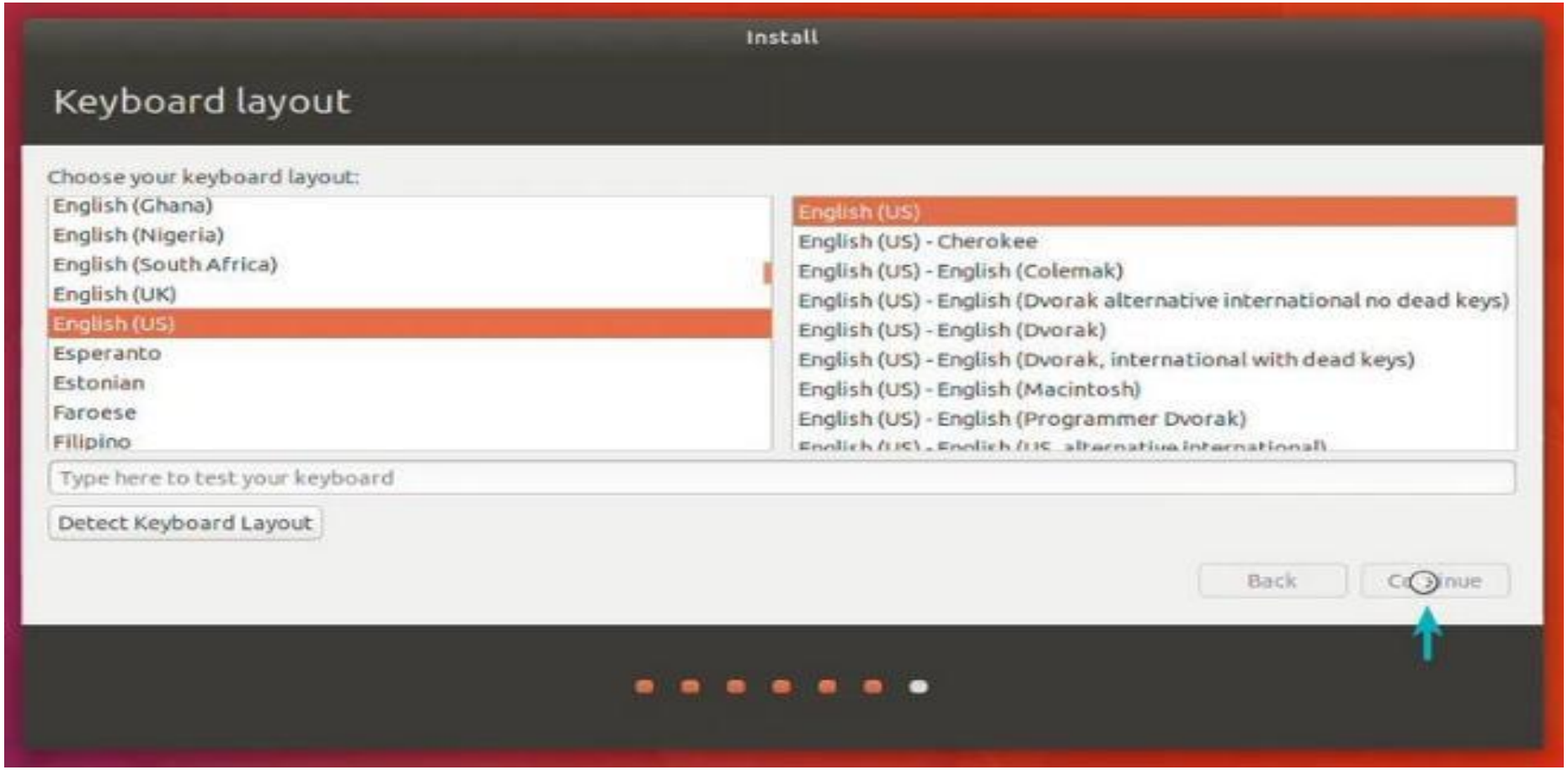


Now Linux OS will start, Click on install option.

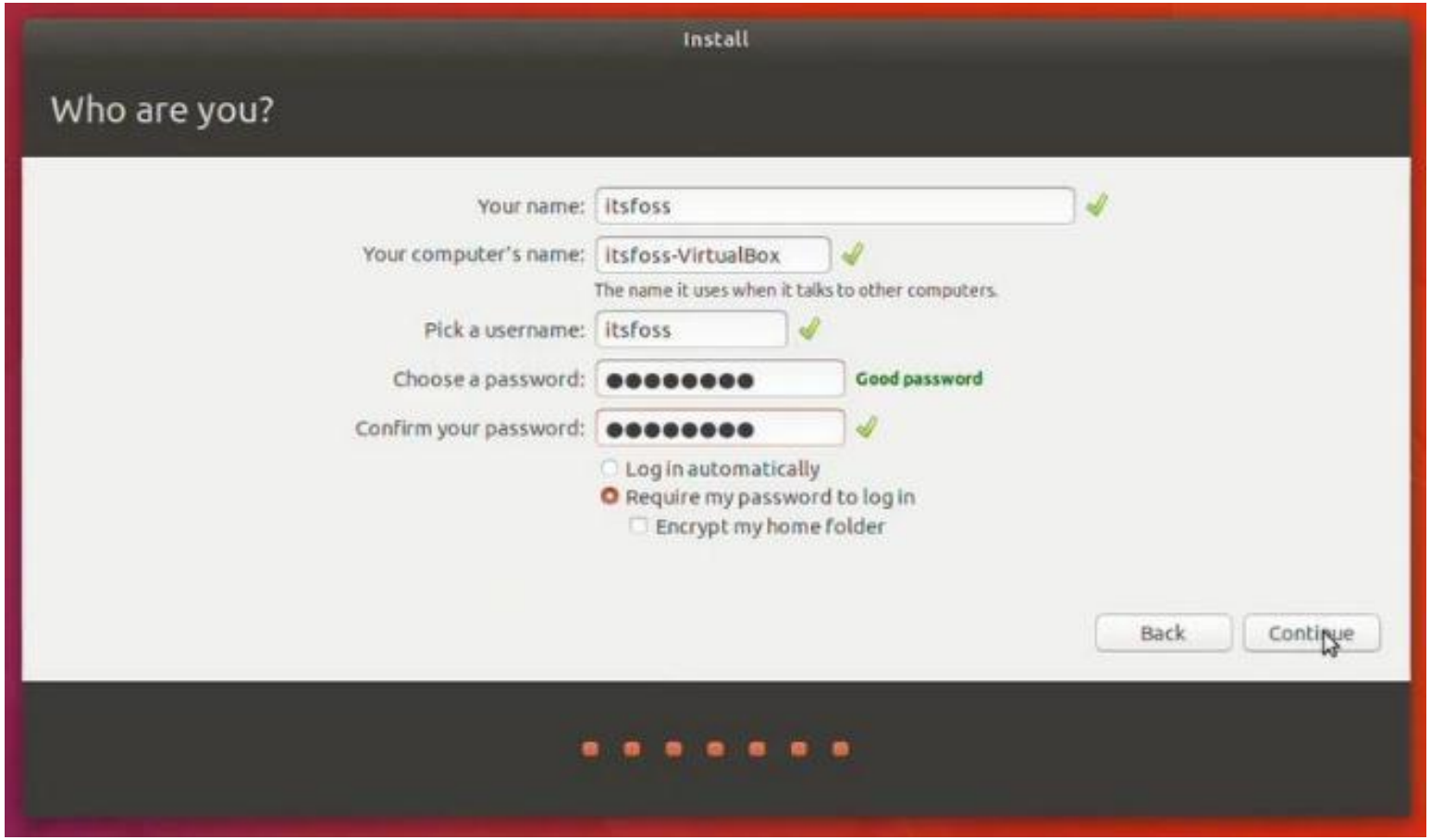
Select the drive for completing the OS installation. Select "Erase Disk and install Ubuntu" in case you want to replace the existing OS otherwise select the "Something else" option and click INSTALL NOW.



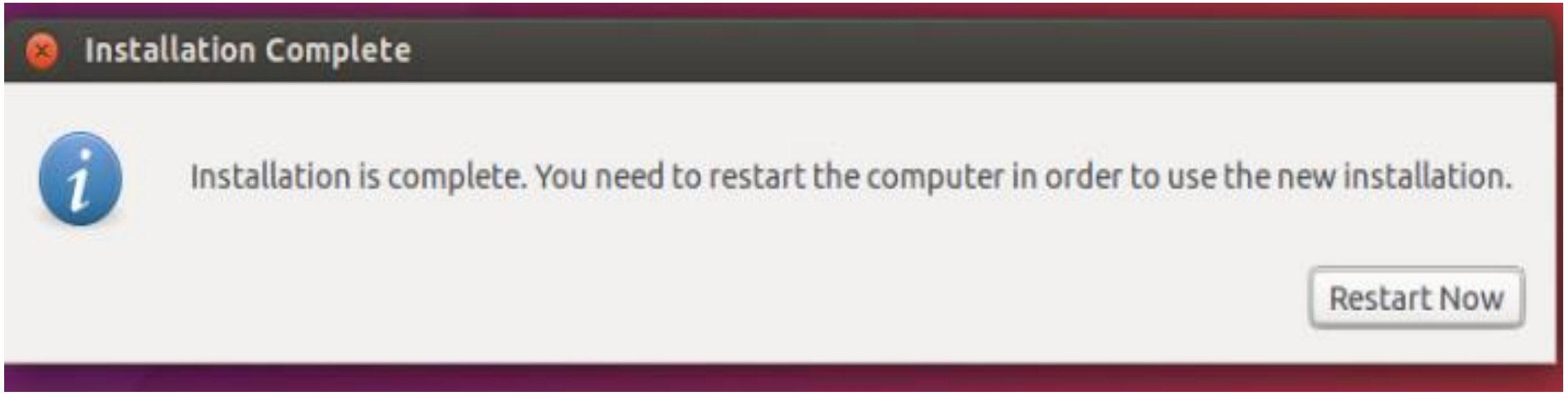




- **Click on Continue.**
- **Choose a username and password.**



You are almost done. It should take 10-15 minutes to complete the installation. Once the installation finishes, restart the system.



THANK YOU

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