Mawlana Bhashani Science and Technology University

# Lab-Report

Report No: 01

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**Experiment No : 01**

**Experiment Name :** How to install Linux operating system.

**Theory :**

Just like Windows, iOS, and Mac OS, Linux is an operating system. In fact, one of the most popular platforms on the planet, Android, is powered by the Linux operating system. An operating system is software that manages all of the hardware resources associated with your desktop or laptop. To put it simply, the operating system manages the communication between your software and your hardware. Without the operating system (OS), the software wouldn?t function.

The Linux operating system comprises several different pieces:

1. **Bootloader –** The software that manages the boot process of your computer. For most users, this will simply be a splash screen that pops up and eventually goes away to boot into the operating system.
2. **Kernel –** This is the one piece of the whole that is actually called ?Linux?. The kernel is the core of the system and manages the CPU, memory, and peripheral devices. The kernel is the lowest level of the OS.
3. **Init system –** This is a sub-system that bootstraps the user space and is charged with controlling daemons. One of the most widely used init systems is systemd? which also happens to be one of the most controversial. It is the init system that manages the boot process, once the initial booting is handed over from the bootloader (i.e., GRUB or GRand Unified Bootloader).
4. **Daemons –** These are background services (printing, sound, scheduling, etc.) that either start up during boot or after you log into the desktop.
5. **Graphical server –** This is the sub-system that displays the graphics on your monitor. It is commonly referred to as the X server or just X.
6. **Desktop environment –** This is the piece that the users actually interact with. There are many desktop environments to choose from (GNOME, Cinnamon, Mate, Pantheon, Enlightenment, KDE, Xfce, etc.). Each desktop environment includes built-in applications (such as file managers, configuration tools, web browsers, and games).
7. **Applications –** Desktop environments do not offer the full array of apps. Just like Windows and macOS, Linux offers thousands upon thousands of high-quality software titles that can be easily found and installed. Most modern Linux distributions (more on this below) include App Store-like tools that centralize and simplify application installation. For example, Ubuntu Linux has the Ubuntu Software

Center (a rebrand of GNOME Software? Figure 1) which allows you to quickly search among the thousands of apps and install them from one centralized location.

**Linux Distribution :**

Because Linux is open source, there is no one vendor selling it; theoretically, you could download the kernel, a desktop environment and various other utilities and applications, and install them all yourself. In practice, these OS components are packaged together into what's called a distribution — basically, a Linux OS tweaked in a particular way that's ready to use out of the box.

**Different types of Linux Distribution –**

Some of the better known Linux distributions are:

- Ubuntu
- SuSE
- Debian
- Red Hat
- Fedora
- Oracle Linux
- CentOS
- Arch Linux
- Mandriva

**Installing process :**

There are various methods to install ubuntu---

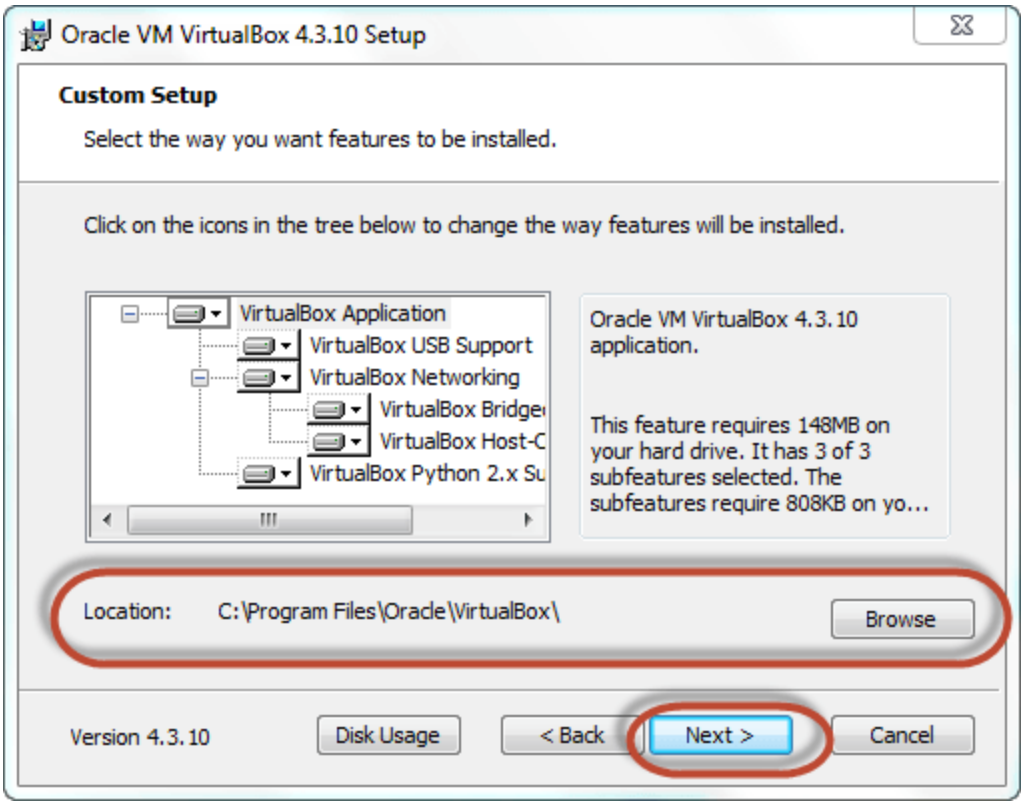
1. Using USB stick.
2. Using CD ROM.
3. Using Virtual Machine.

Here we will see how to install linux using **Virtual machine** --

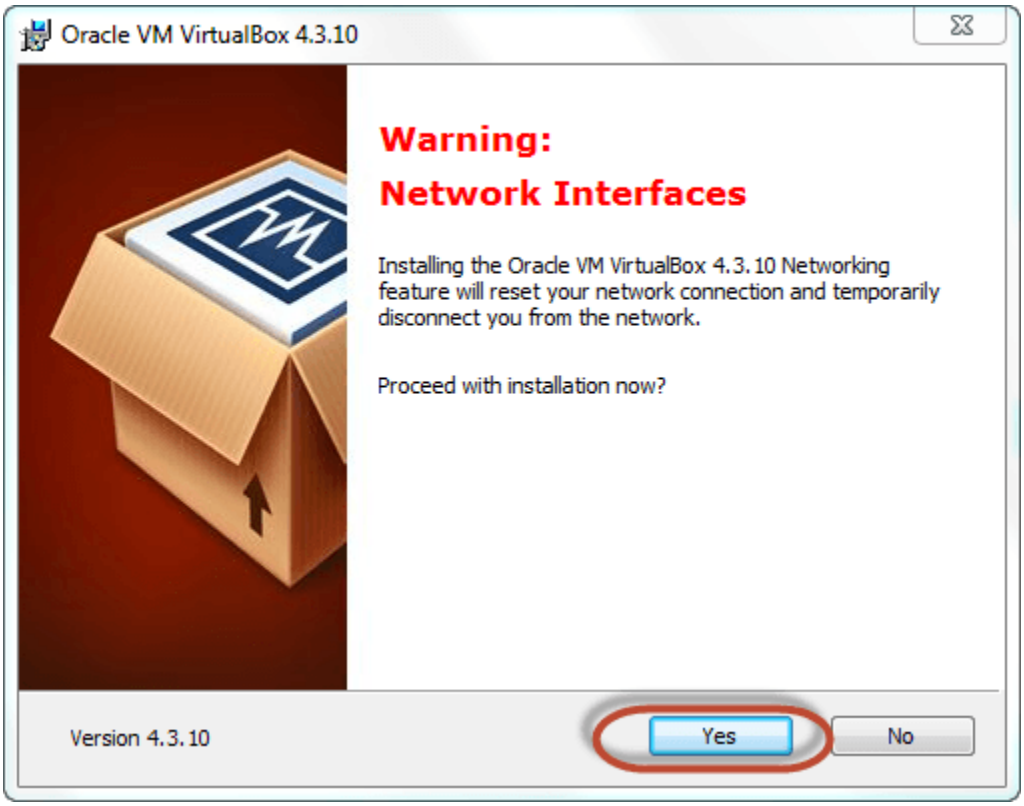
**Step-1:** Download Virtual box-


**Step-2:** Once the download is complete, Open setup file and follow the step and click on next.

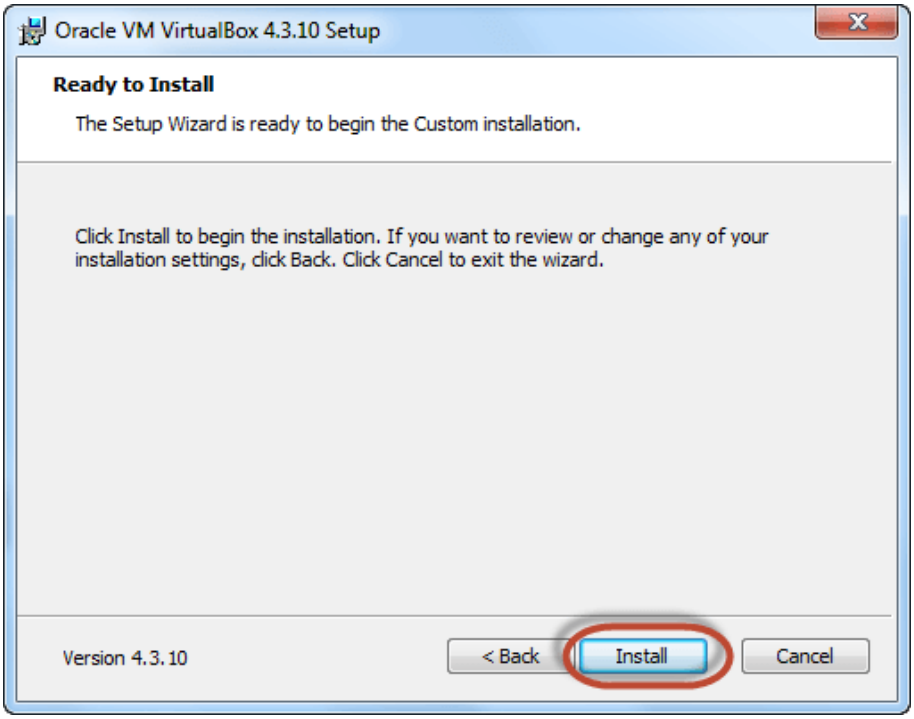

**Step-3:** Select the directory to install VirtualBox and click on next.




**Step-4:** Select Desktop icon and click on next, now click on yes

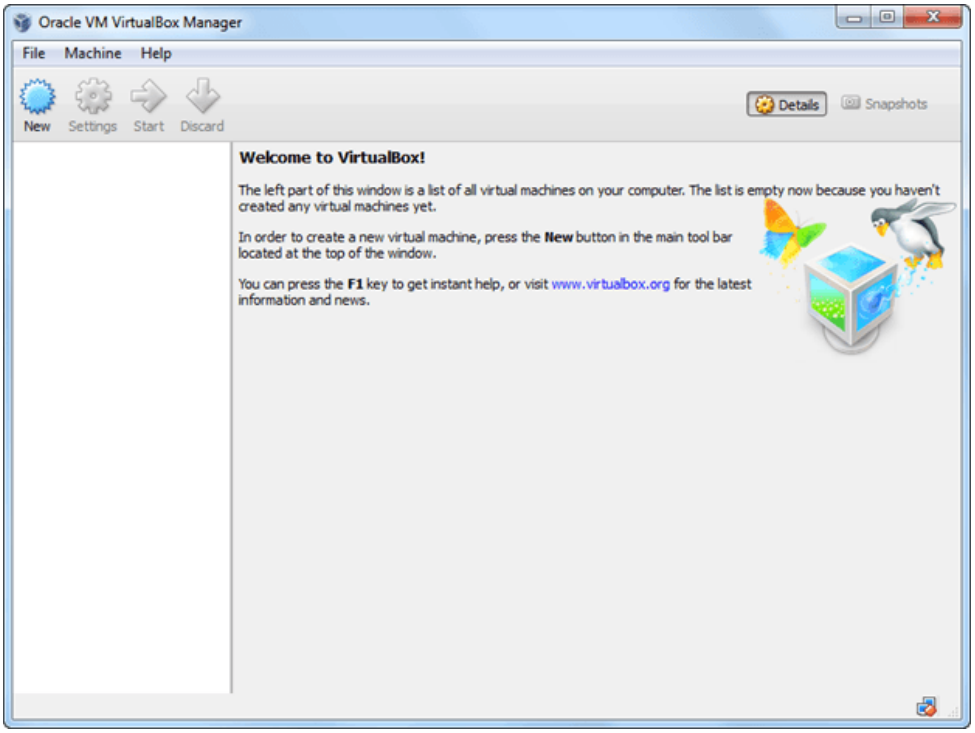


**Step-5:** Click On install.

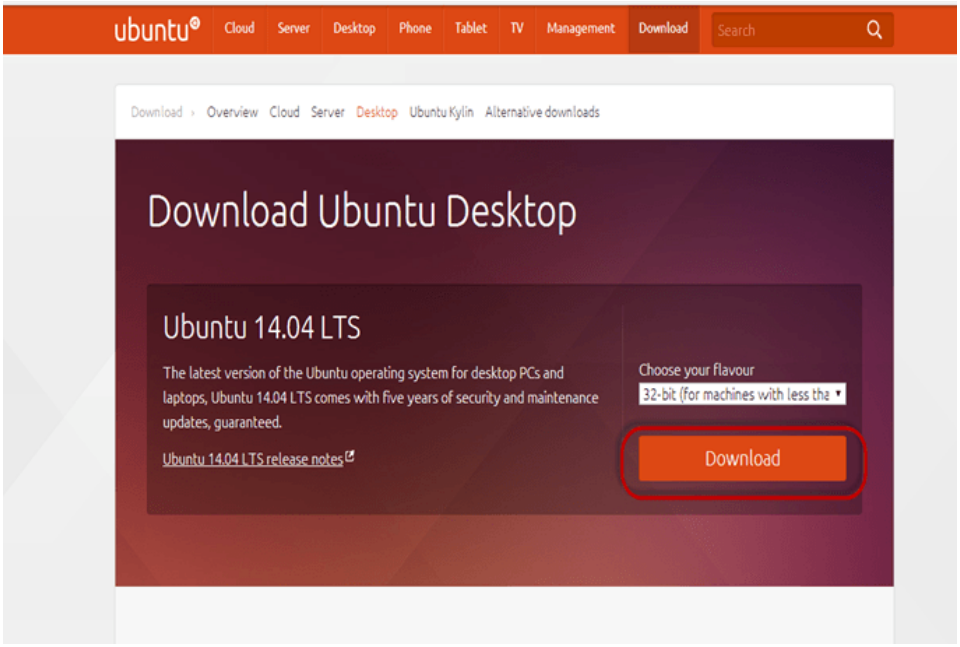



**Step-6:** Now installation of the virtual box will start. Once complete, click on Finish Button to start Virtual Box.

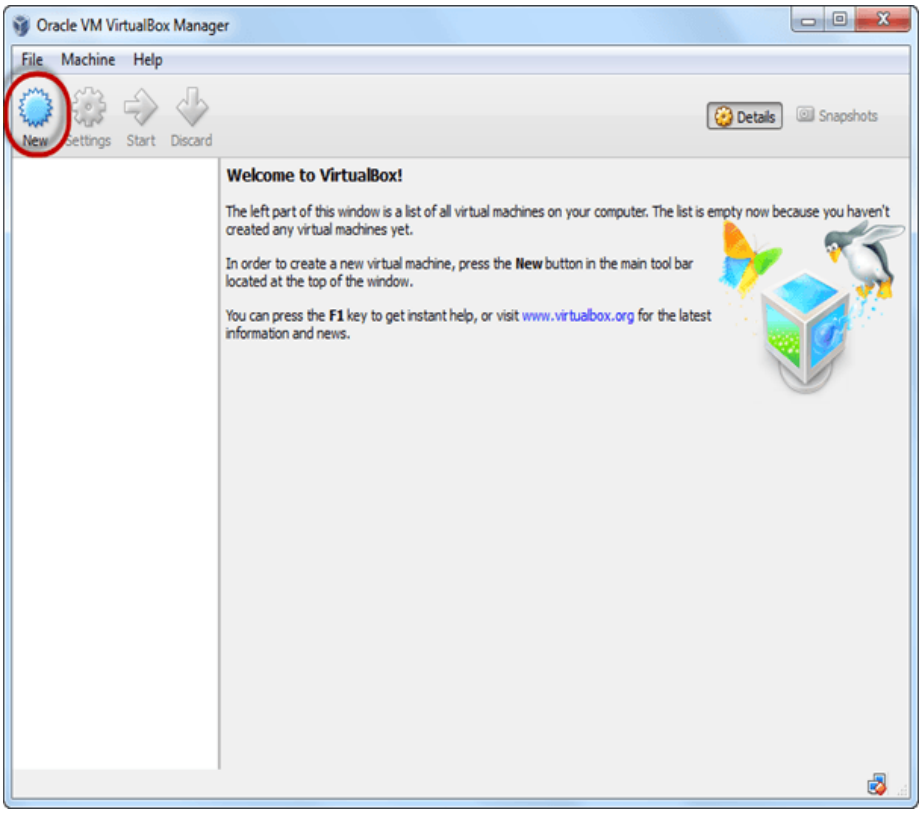
The virtual box dashboard looks like this-



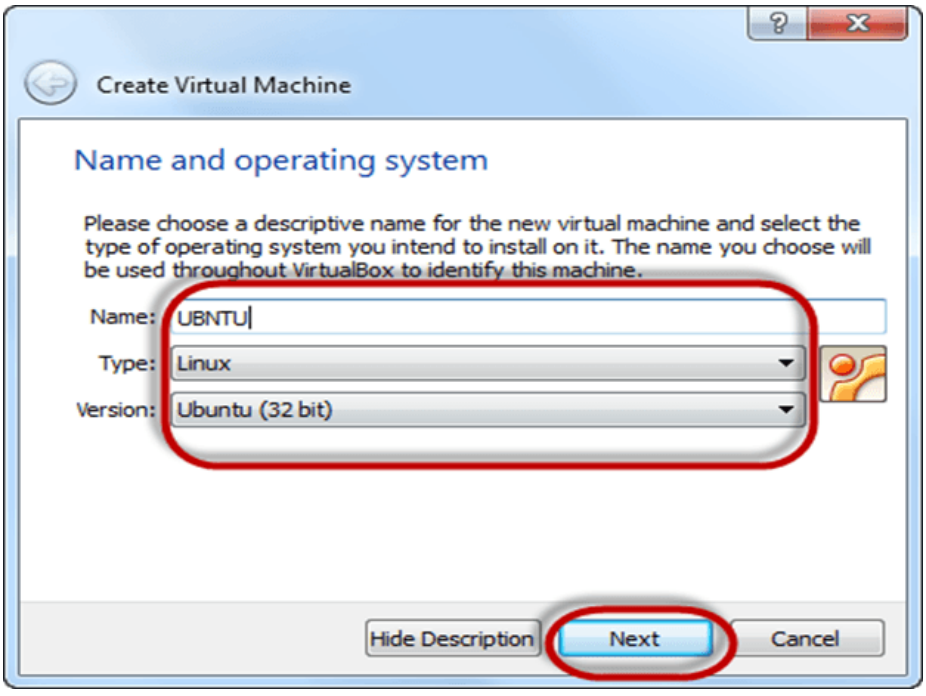

**Step-7:** Download Ubuntu. You can select 32/64-bit versions as per your choice.



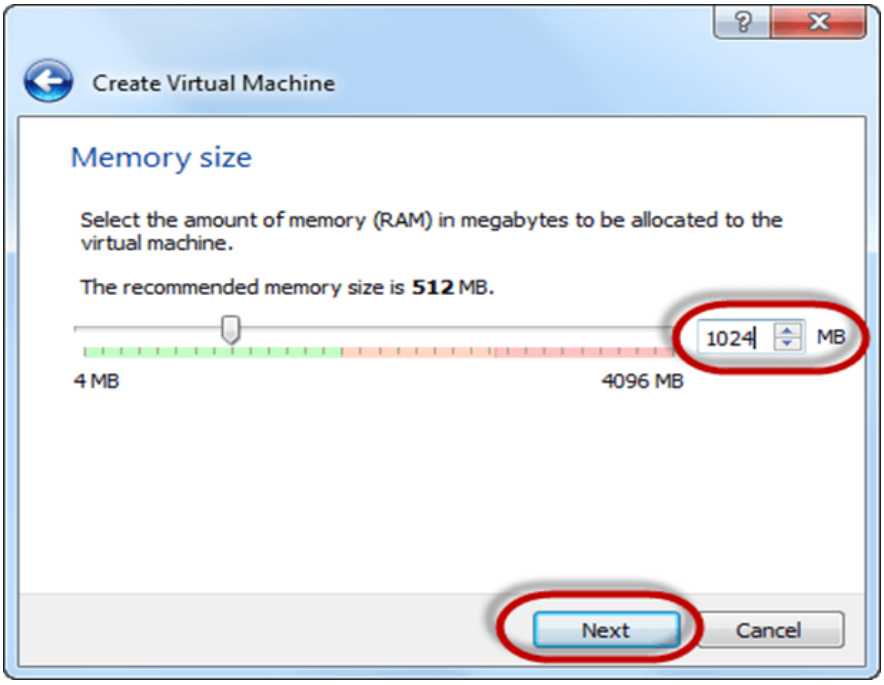

**Step-8:** Open Virtual box and click on new button




**Step-9 :** In next window,we have to give the name of our OS which we are installing in virtual box. And select OS like Linux and version as Ubuntu 32 bit. And click on next

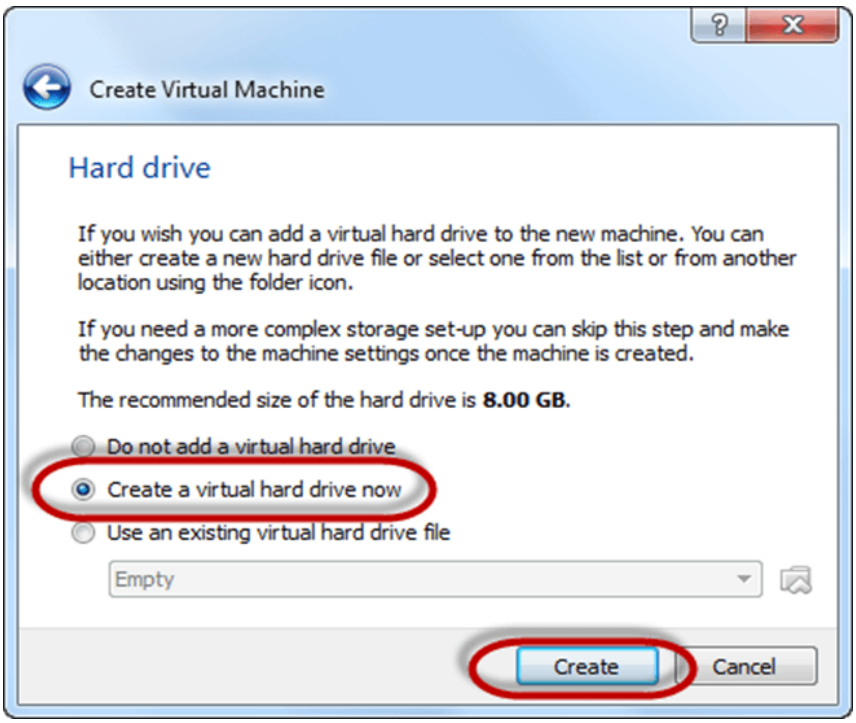


**Step-10 :** Now have to allocate Ram Size To our Virtual OS. I recommended keeping 1024mb (1 GB) ram to run Ubuntu better. And click on next.

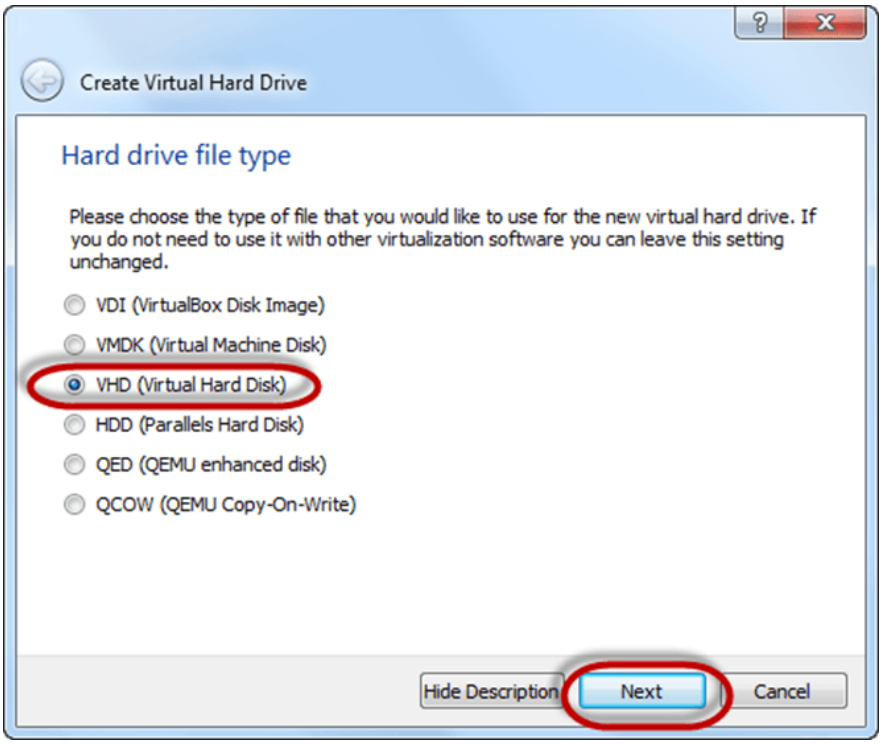



**Step-11 :** Now To run OS in virtual box we have to create virtual hard disk, click on create a virtual hard drive now and click on create button.

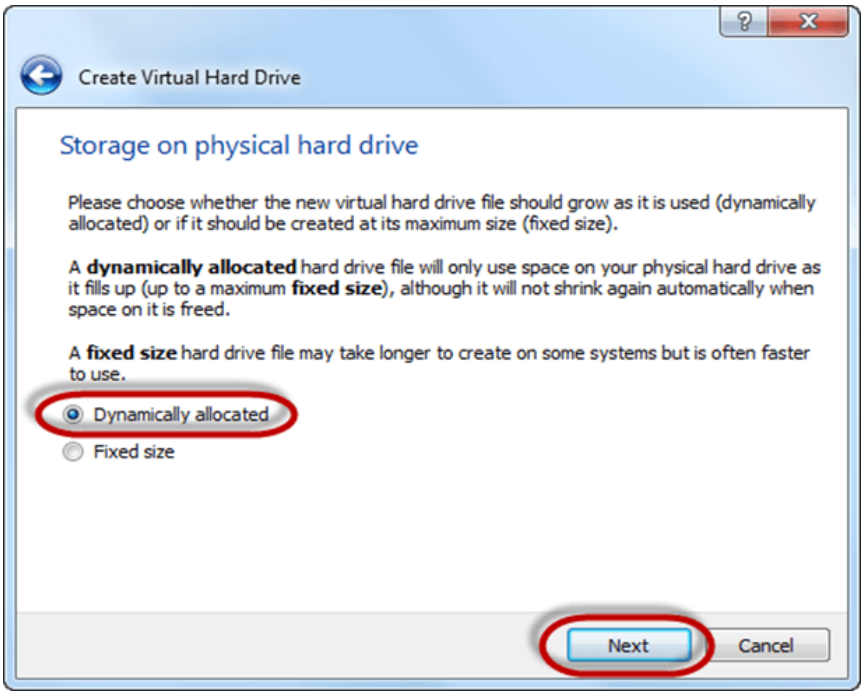
The virtual hard disk is where the OS installation files and data/applications we create/install in this Ubuntu machine will reside



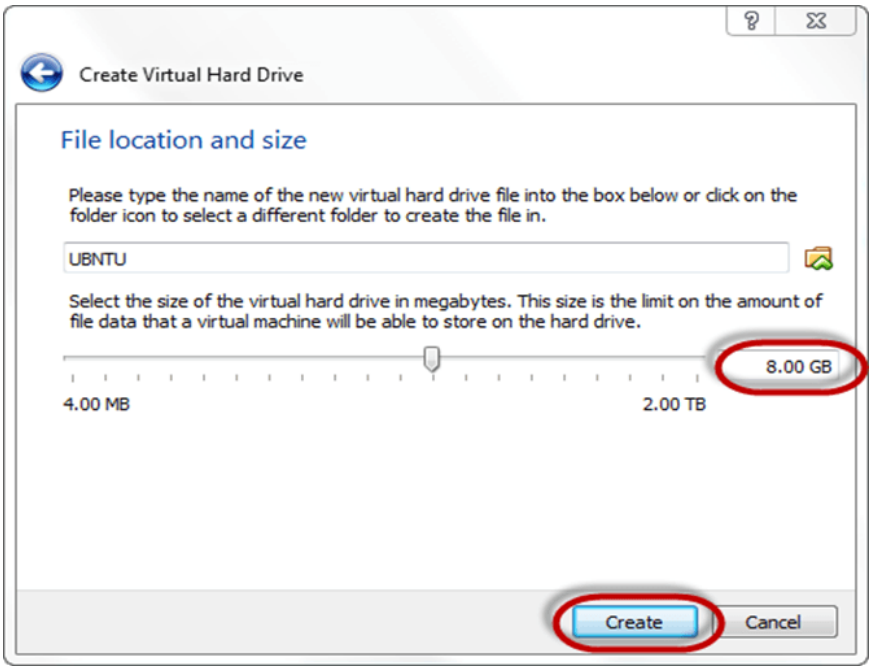

**Step-12 :** select VHD (virtual hard disk) option and click on next.



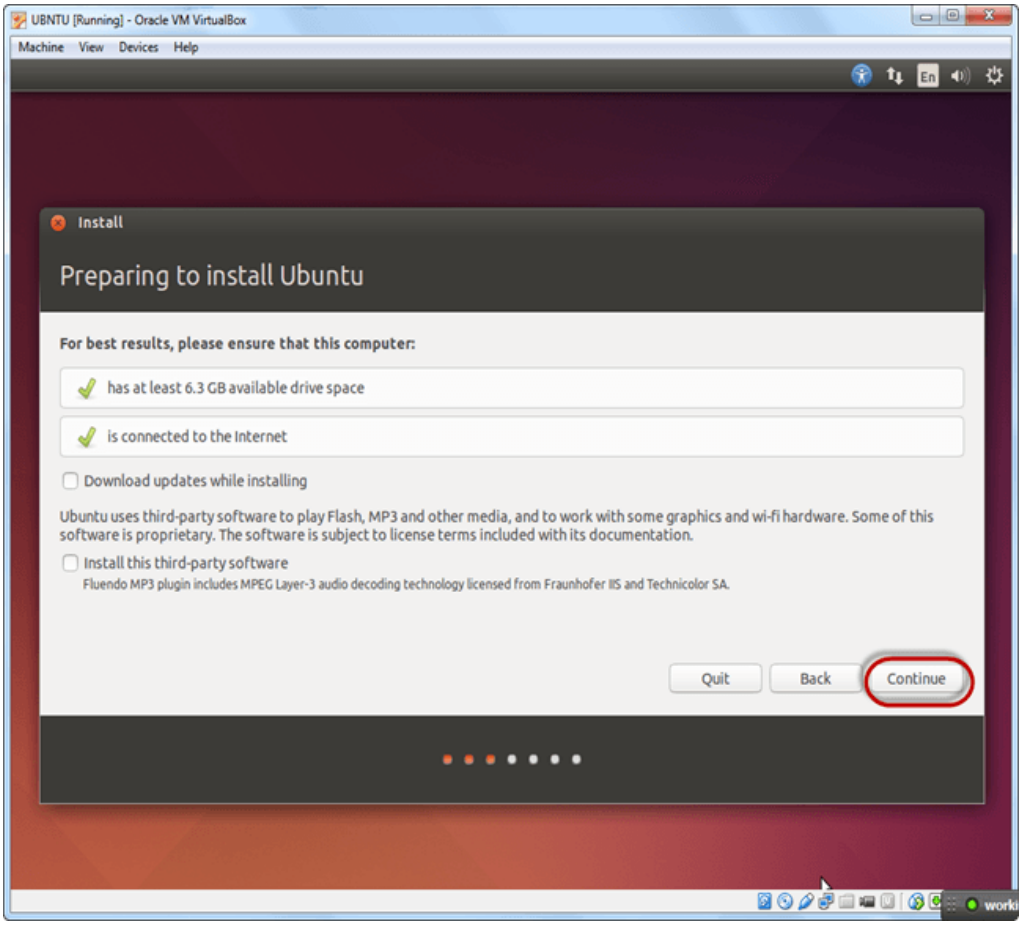

**Step-13:** Click on dynamic allocated and click on next. This means that the size of the disk will increase dynamically as per requirement.



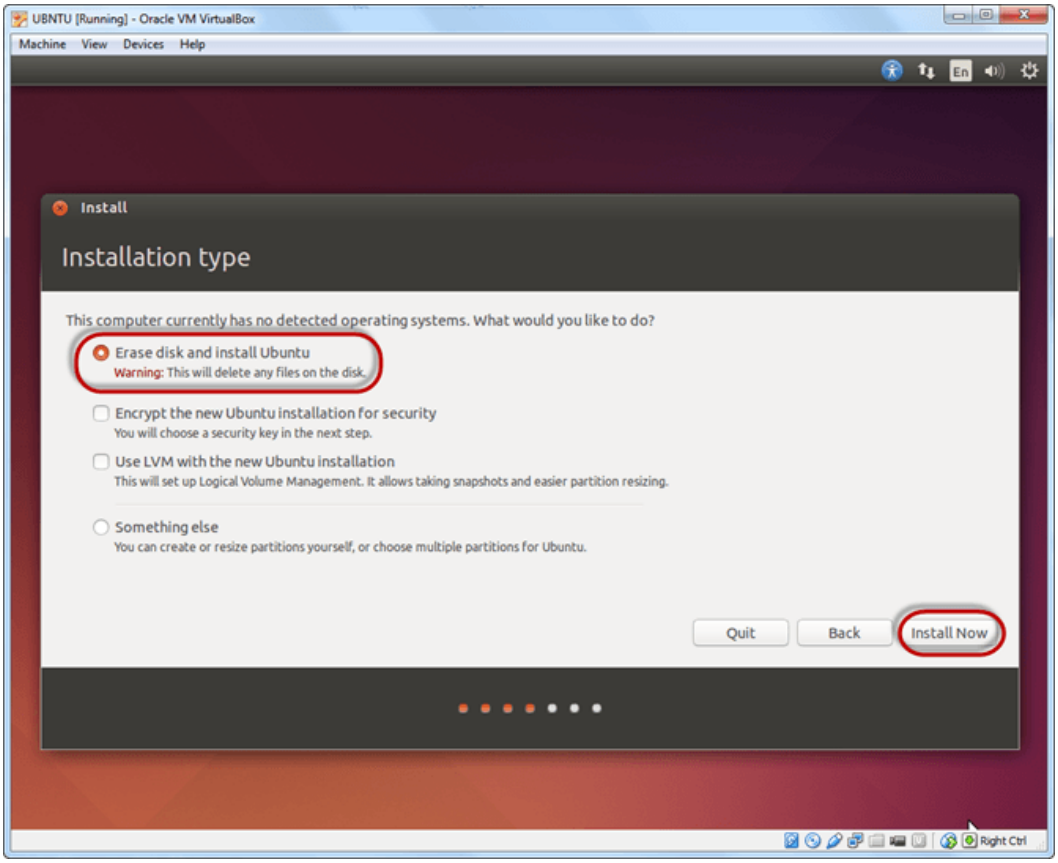

**Step-14:** Allocate memory virtual hard drive .8GB recommended. Click on create button.



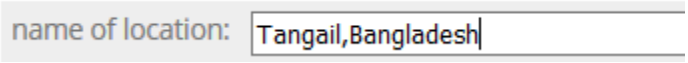

**Step- 15 :** click continue



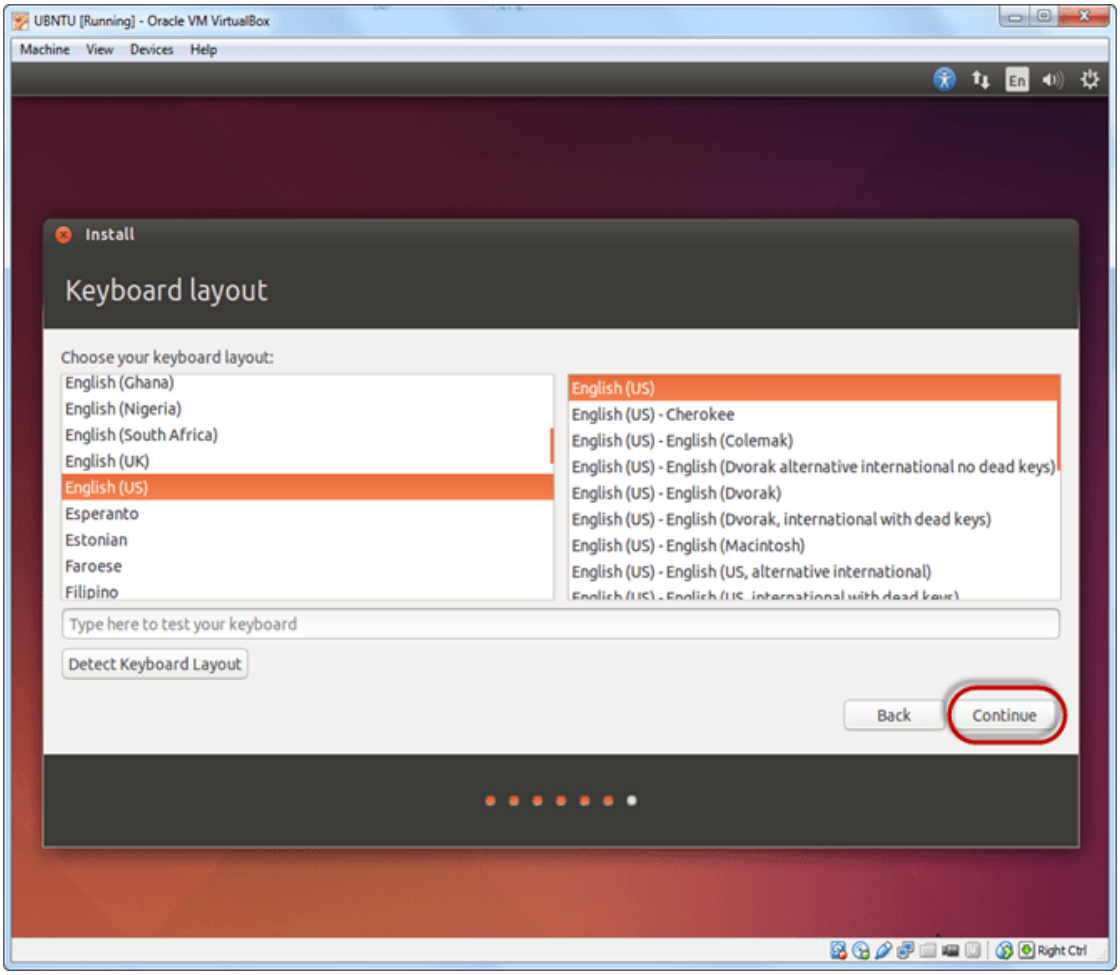

**Step-16:** Select option to erase the disk and install Ubuntu and click on install now. This option installs Ubuntu into our virtual hard drive which is we made earlier. It will not harm our PC or Windows installation



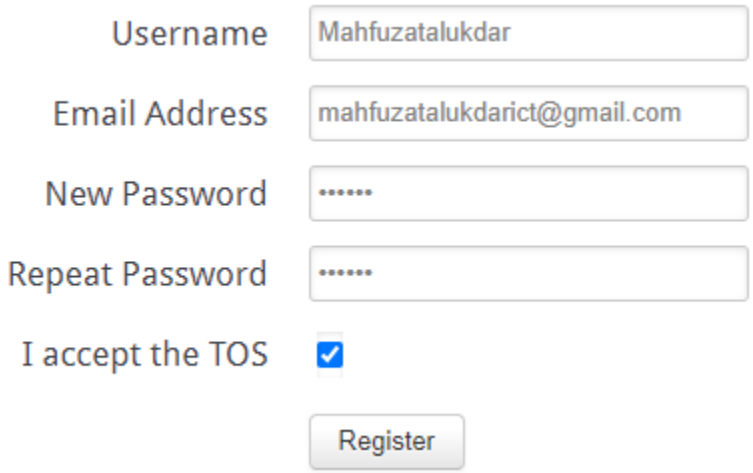

**Step-17:** Select location for setting up time zone, and click on continue



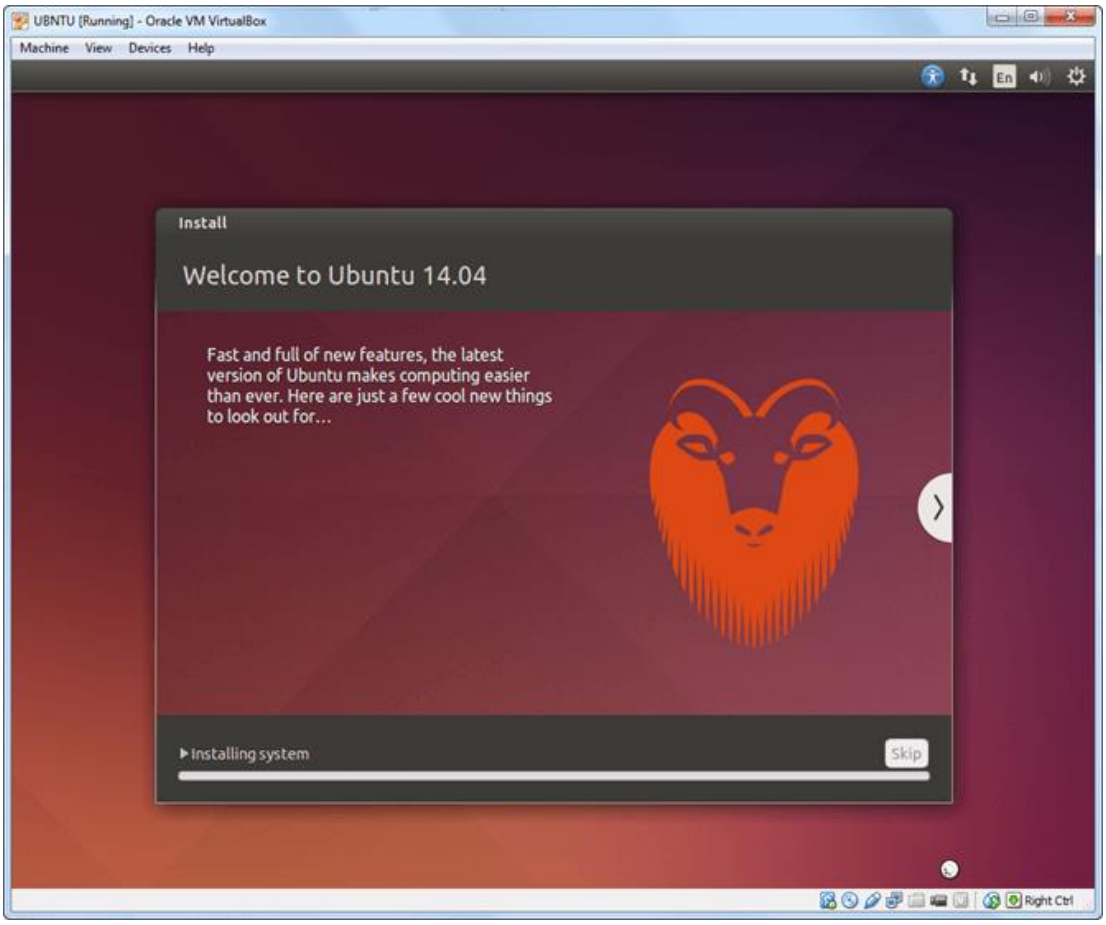

**Step-18:** Select keyboard layout, by default English (US) is selected but if we want to change then, we can select in the list. And click on continue



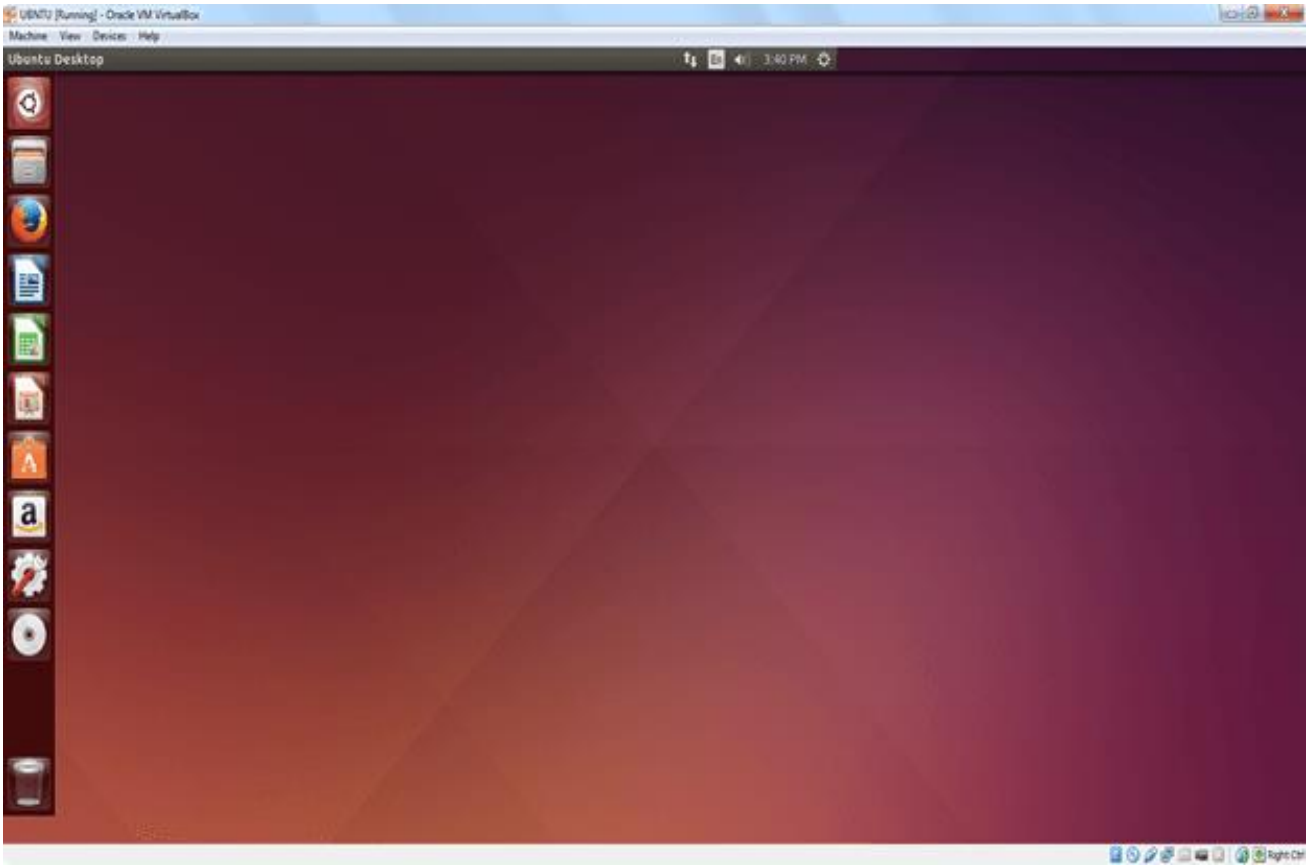

**Step-18:** Select username and password for Ubuntu admin account. This information has been needed for installing any software package into Ubuntu and also for login to OS. Fill up your details and tick on login automatically to ignore login attempt and click on continue



**Step-19:** Installation process starts. May take up to 30 minutes. Please wait until installation process completes.




**Step-20:** After finishing the installation, we will see Ubuntu Desktop.




**Discussion :**

From this lab,we have learnt that how to install linux. We have executed these steps to install linux. We can install linux using these steps in future.