Linux Ubuntu Installation

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1 Why Linux ?

We prefer Linux distributions over other operating systems while learning OS is because of the following reasons,

- Freely available
- Open source
- Runs on any hardware
- Mostly light weight

- Customization (you can add remove modules as per requirement)
- Can get basic level information of hardware
- High security (can get effected by viruses easily)
- High stability (runs exactly as fast as it did when first installed, even after several years)

- ease of maintenance

2 What is Linux distribution (distro)

A Linux distribution (often abbreviated as distro) is an operating system made from a software collection that is based upon the Linux kernel and, often, a package management system. The software is usually adapted to the distribution and then packaged into software packages by the distribution's maintainers.

Some of the well known Linux distros are as follows,

2.1 Desktop (client) based

1. Ubuntu
2. Linux Mint
3. elementary OS
4. MX Linux
5. Zorin OS
6. Pop_OS

2.2 Server based

1. Ubunto Server
2. Red Hat Enterprise Linux
3. SUSE Linux Enterprise Server
4. CentOS

2.3 For older computers

1. Puppy Linux
2. Solus Budgie
3. Bodhi
4. antiX
5. Sparky Linux

2.4 Linux for Advanced Users

1. Arch Linux
2. Gentoo
3. Slackware

2.5 Multi-purpose Linux Distribution

1. Fedora
2. Manjaro (based on Arch Linux). KDE desktop environment
3. Debian (ideal for desktop and servers)

2.6 Windows users

1. Linux Lite (windows 7 look alike)
2. Zorin OS (resembles windows and macOS)
3. Kubuntu (flavour of Ubuntu. KDE's Plasma distro)
4. Linux Mint
5. Ubuntu MATE

2.7 Hackers

1. Kali Linux (most advanced penetration testing tools)
2. BackBox (best known ethical hacking tools)
3. Parrot Security OS
4. BackArch (advance flavor of Arch Linux)
5. Bugtraq
6. DEFT linux
7. Samurai Web Testing Framework
8. Pentoo Linux (flavor of Gentoo linux with customized tools)
9. Cain (system forensics and analysis purposes)
10. Network Security Toolkit
11. Fedora Security Spin
12. Arch Strike
13. Cyborg
14. Matriux
15. Weakerth4n

2.8 Gamers

1. Steam OS (only steam games)
2. batocera.linux (only retro games, supports NVIDIA GPUs)
3. Linux Console (tailored for children)
4. Game Drift Linux (windows games supported, dedicated game store)
5. Lakka OS (steam or windows games are not supported)
6. Fedora Games (thousands of Linux games)
7. Ubuntu GamePack (Linux, Steam, Windows, and console games supported)
8. mGAMe (not suitable for heavy games)
9. Sparky Linux GameOver Edition

2.9 Programmers

1. Ubuntu
2. openSUSE
3. Fedora
4. Pop!_OS
5. elementary OS
6. Manjaro
7. Arch Linux
8. Debian
9. Raspbian
10. Nitrux (based on Ubuntu)

2.10 Privacy buffs (to protect your privacy)

1. Tails (ideal for live system usb and anonymous browsing)
2. Whonix
3. IprediaOS (based on Tor protocol, i.e., invisible internet project)
4. Discreet Linux
5. Mofo Linux
6. Subgraph OS (uses Tor to provide anonymity, uses sandbox layer of security)

3 Ubuntu Installation

Linux Ubuntu (or any OS) can be installed in the following three ways,

- Stand alone
- Dual boot
- Virtual Machine such as VMWARE

3.1 Ubuntu stand alone installation

When you install only Ubuntu on your system.

3.2 Ubuntu Virtual machine Installation

In this case, first you install an environment such as VMWARE on your host operating (say Windows 10) and then you install Ubuntu as a virtual machine in the VMWARE that runs on the host OS. Following are the steps for installing the Ubuntu using VMWARE,

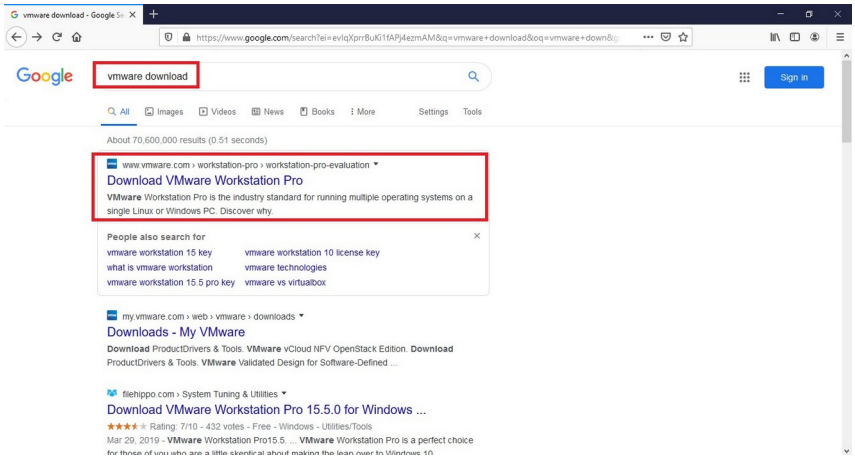

Figure 1: Write WMWARE download in the google search and open the very first link

3.2.1 To increase the size for the new created virtual machine

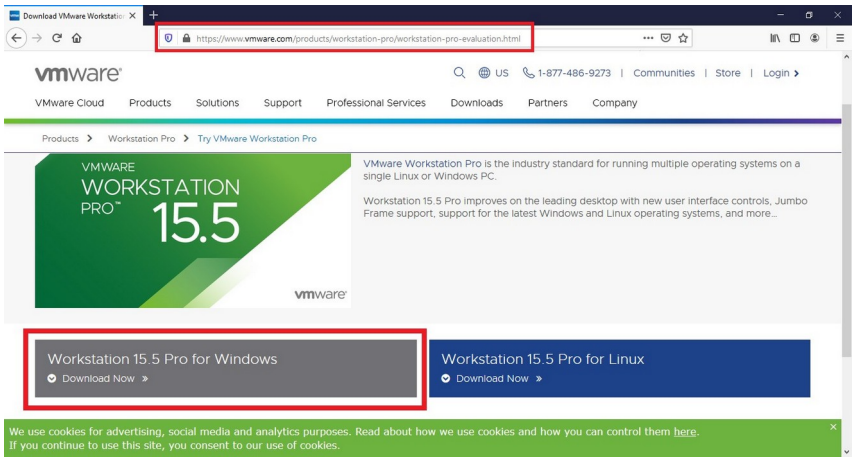

Figure 2: Download the VMWARE workstation

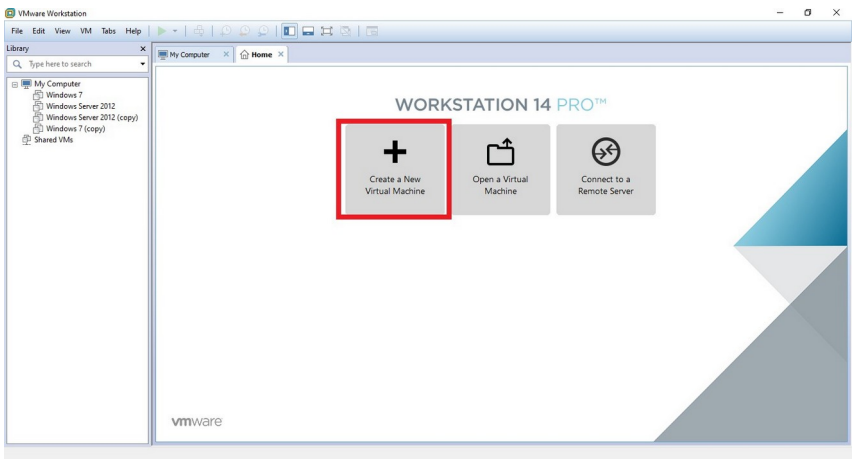

Figure 3: Click on the "Create a new virtual machine"

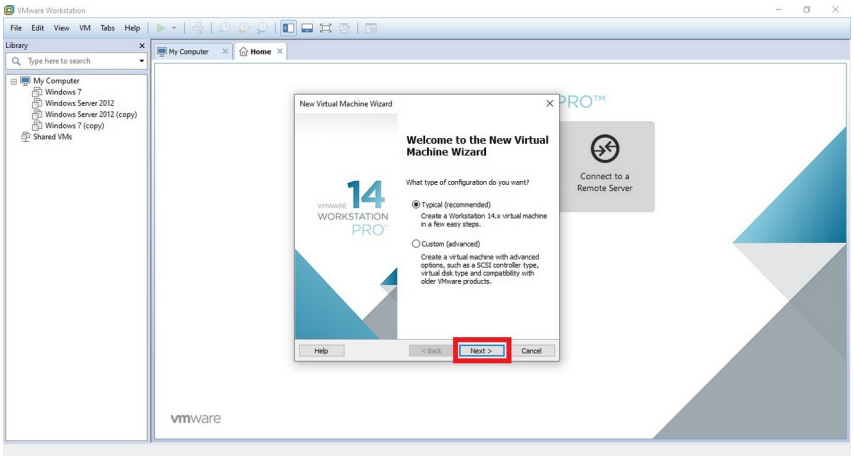

Figure 4: Click on the next button

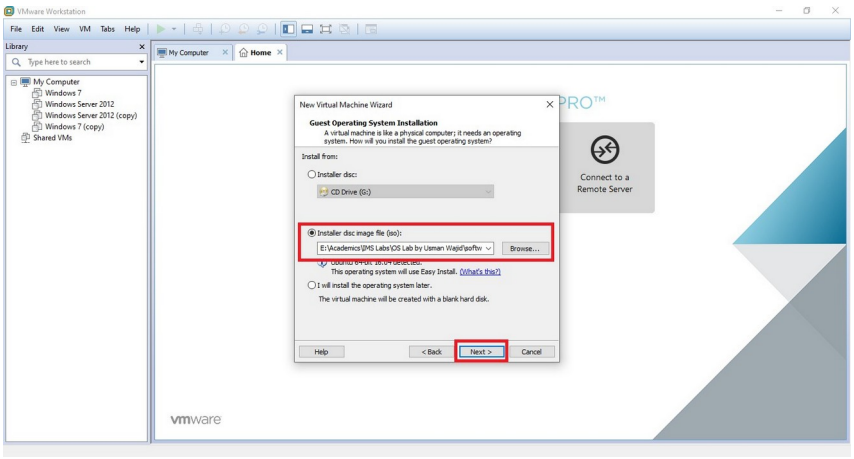

Figure 5: browse the ISO image location or inserct the Ubuntu CD and click on the next button

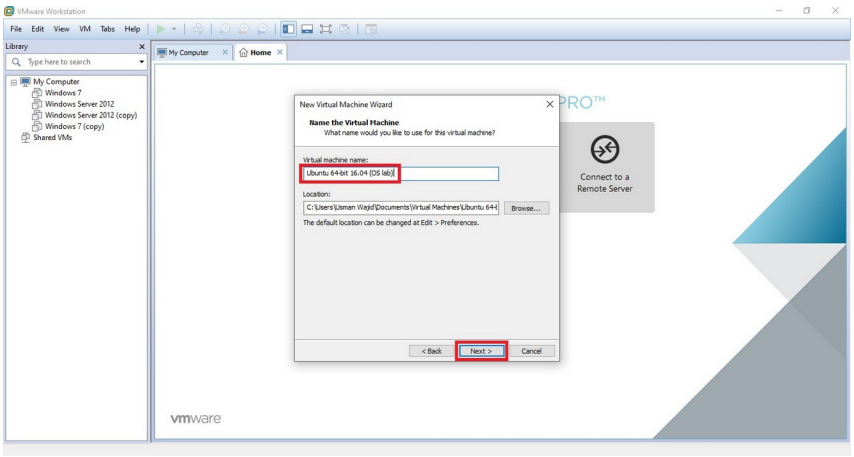

Figure 6: Provide the name for this new virtual machine and set the path for the backup directory

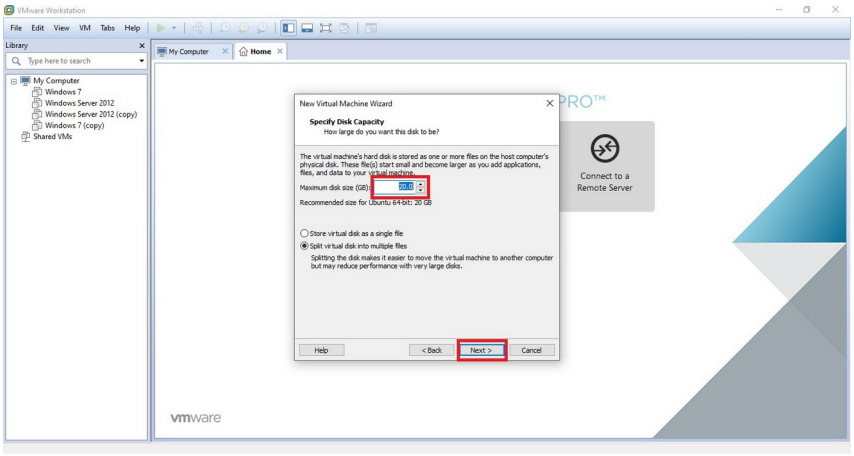

Figure 7: Set the maximum space volume that this new virtual machine can use (minimum 16 GB) and click on the next button

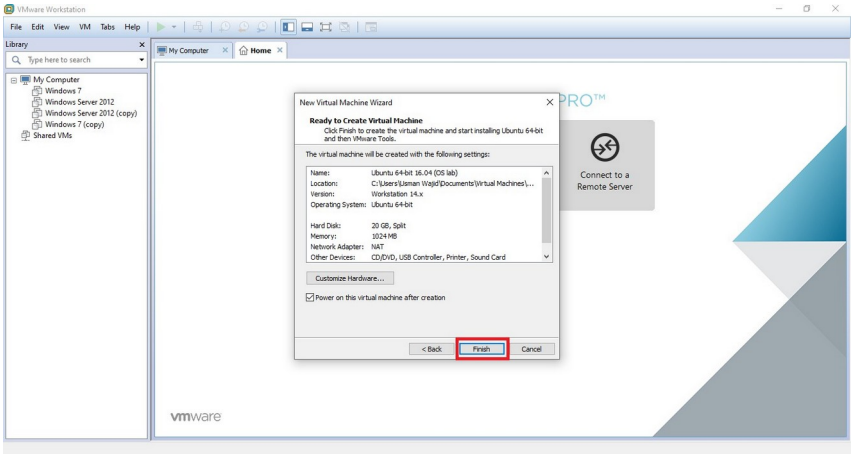

Figure 8: Click on the finish button to start installing Ubuntu

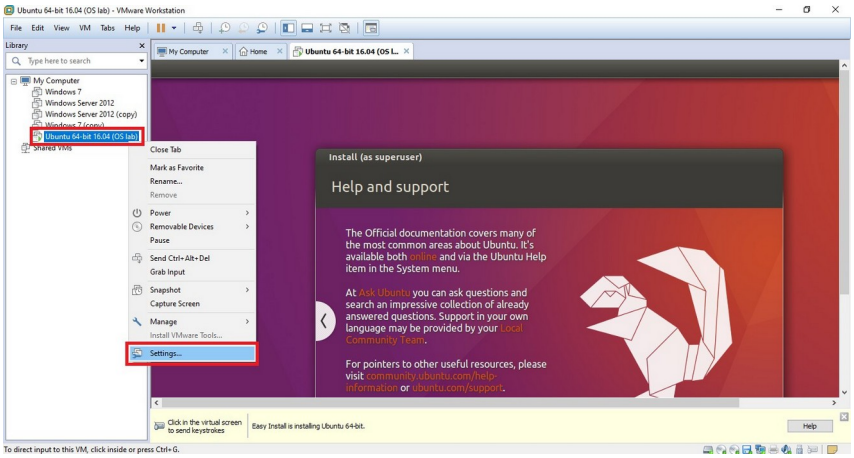

Figure 9: Select the virtual machine from the left panel, right click on it and click on the "settings" option

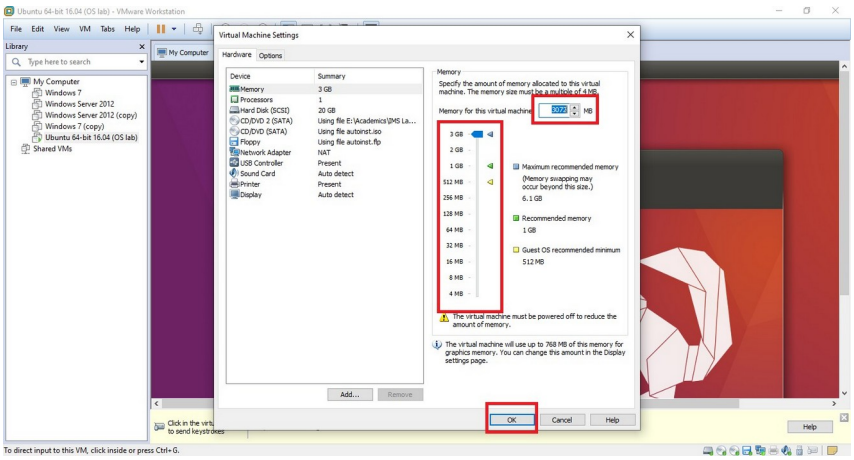

Figure 10: Increase the capacity of RAM that this virtual machine can use at max

3.3 Dual boot

When you install Ubuntu along with other one or more operating systems such as windows 10 etc. Fol- lowing are the steps to install Ubuntu via dual boot,

Warning: Backup all your important data or there is a good chance that you may lose all your data while installing Ubuntu in dual boot

3.3.1 Pre-requisites

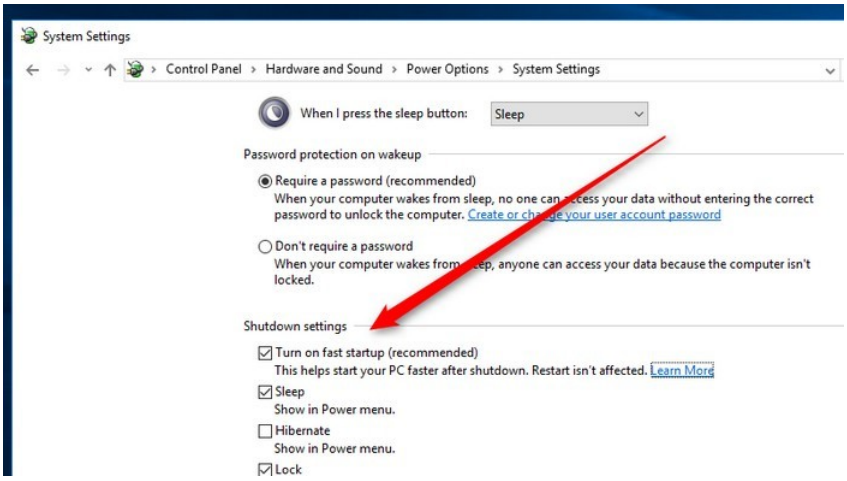

Figure 11: fast startup should be **disabled**

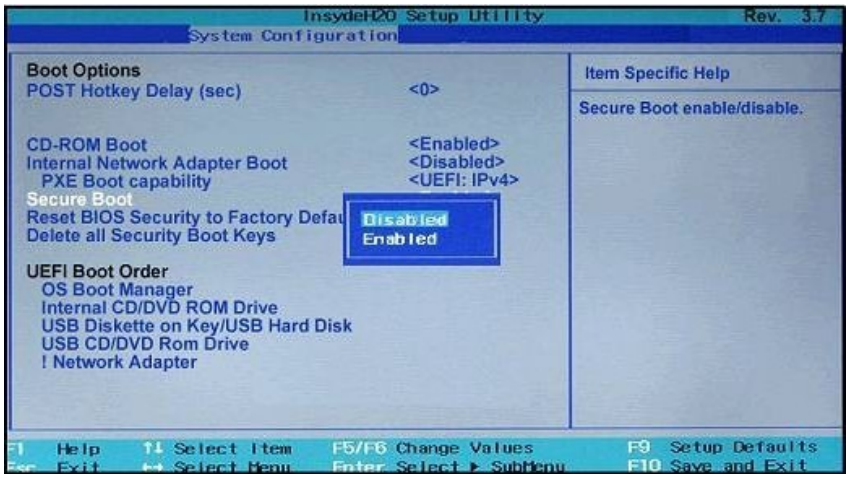

Figure 12: secure boot should be disabled

3.3.2 Free space allocation in your Hard disk

The free space should be atleast 15 GB or more as per your need. Following are the step-wise figures depicting how to allocate free space in your hard-disk,

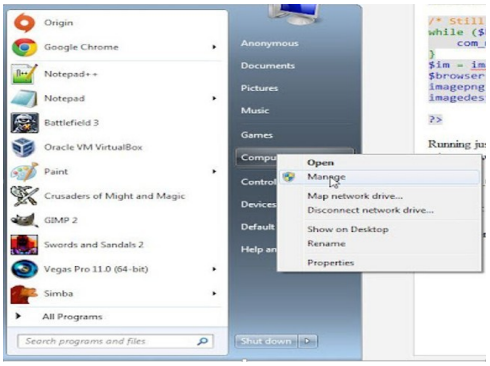

Figure 13: Right click on My computer and click on manage option or press window button write "computer management" in search bar and press enter

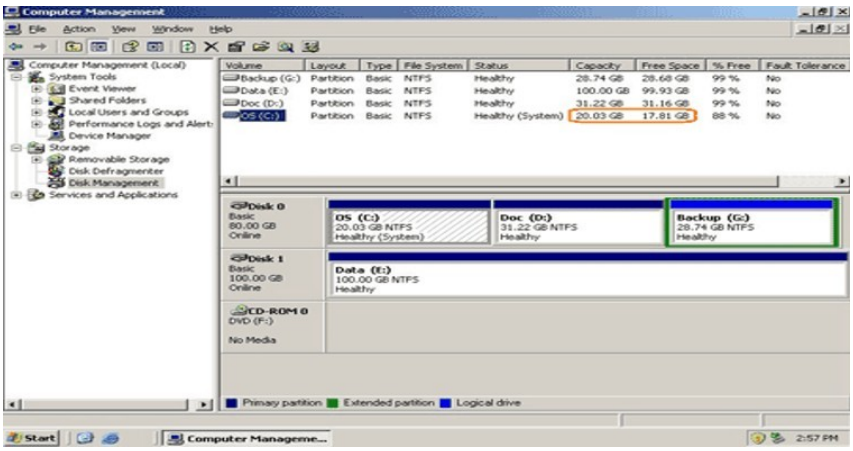

Figure 14: This window will show you all the drives on your hard-disk their total space, used space and free space

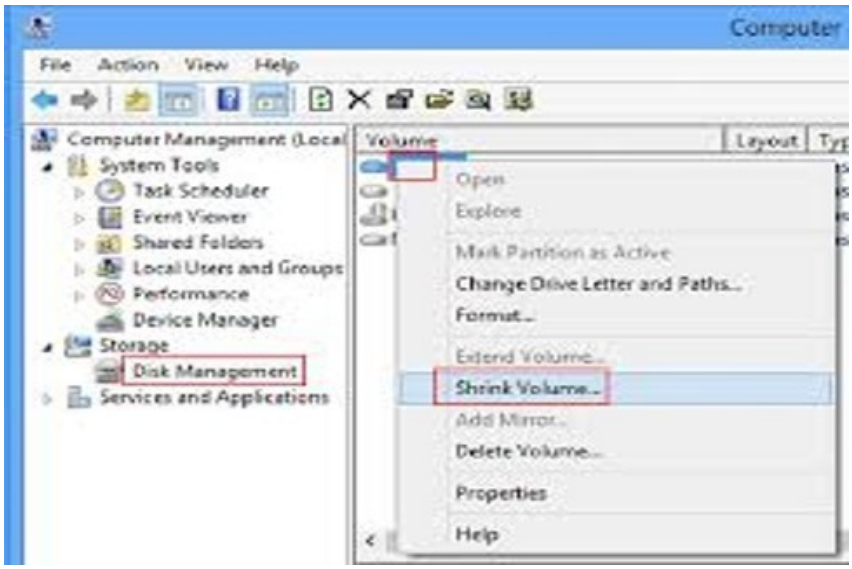

Figure 15: Select the volume or drive you want to take free space from and shrink it

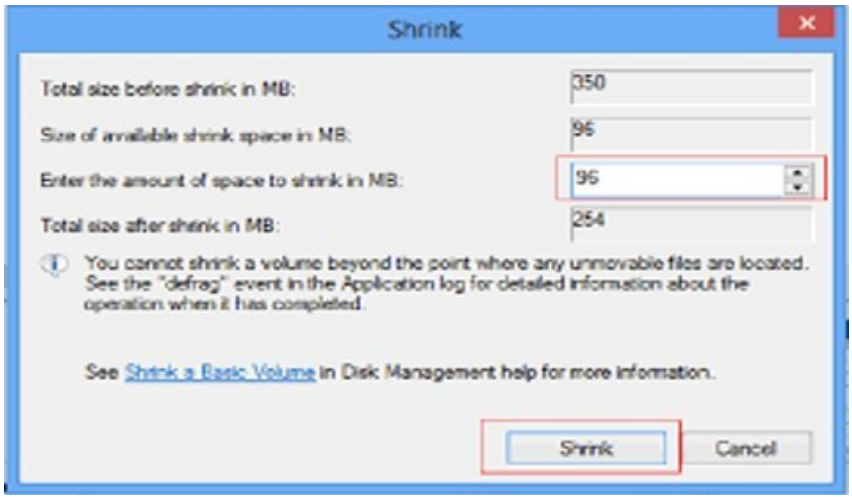

Figure 16: right click on the selected drive, click on the shrink volume option and provide the amount of volume you want to shrink to get the free space allocation. A minimum of 16 GB space should be left a free space

3.3.3 Download Linux Ubuntu ISO file

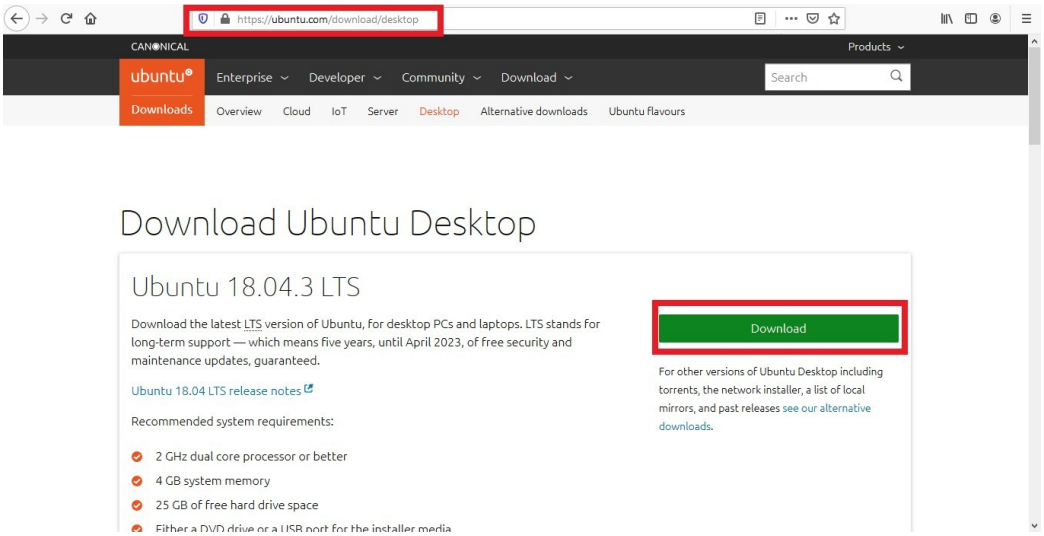

Figure 17: you can download latest Ubuntu version from https://ubuntu.com/download/desktop

3.3.4 Creating Live USB key with Linux Ubuntu bootable setup

Following are the step-wise figures depicting how to create bootable USB key with Linux Ubuntu setup,

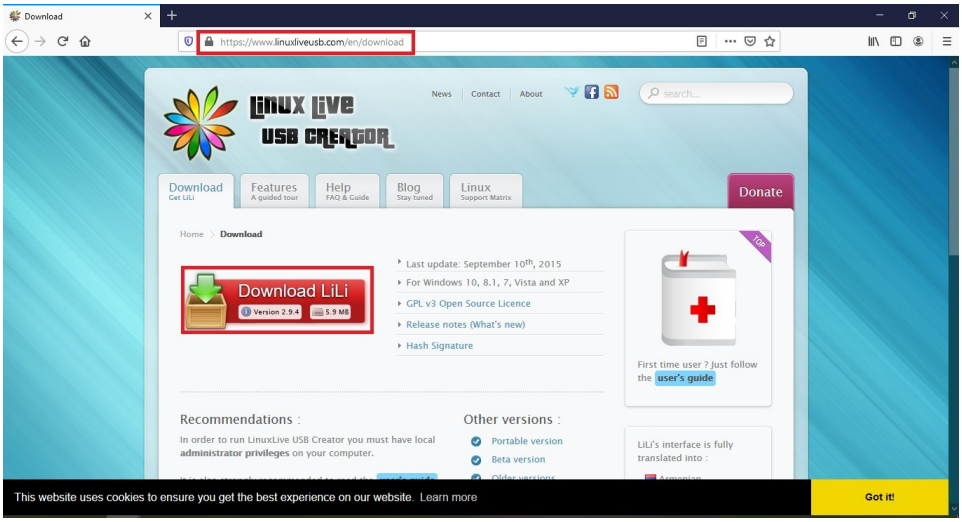

Figure 18: go to https://www.linuxliveusb.com/en/download and download live USB creator

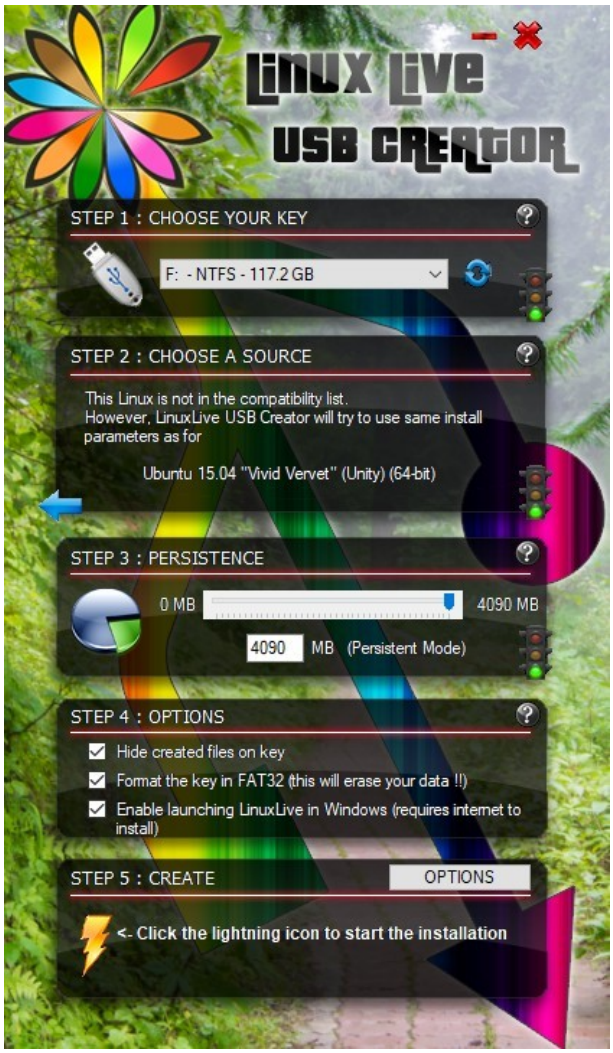

Figure 19: **Step 1:** select the USB, **Step 2:** provide the path for the Ubuntu ISO file, **Step 3:** set Persistence as 4090 MB, **Step 4:** tik mark all the three options, **Step 5:** click on the lightening icon to start creating bootable USB key

- **Warning:** Do not tick mark "Format the key in FAT32" if your system do not support FAT32 format. This option will also erase all your current data on the USB

3.3.5 Set USB a first boot priority

Restart your computer and set the USB as first priority boot device. Save your settings and exit as depicted in the image below,

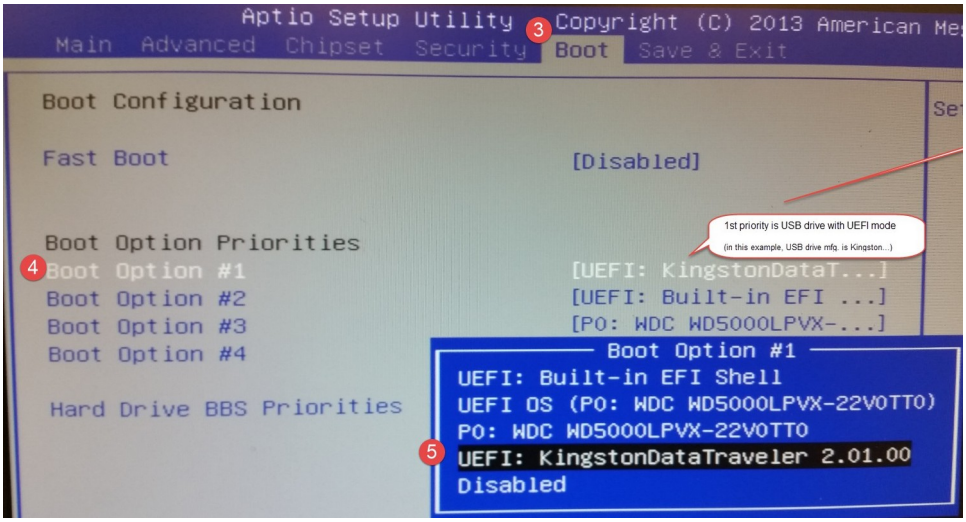

Figure 20: Setting USB as first boot priority device

3.3.6 Installing Ubuntu from a bootable USB

The following step-wise figures depicts how to install Ubuntu from a boot-able USB,

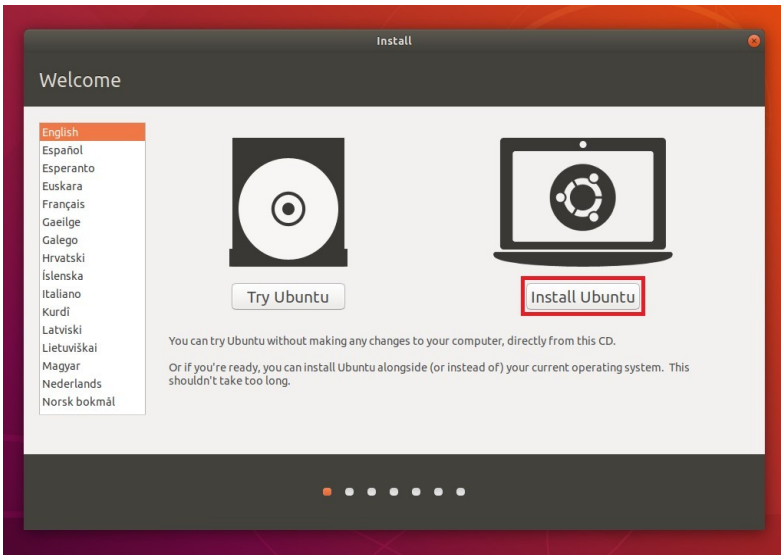

Figure 21: Click on the "Install Ubuntu option"

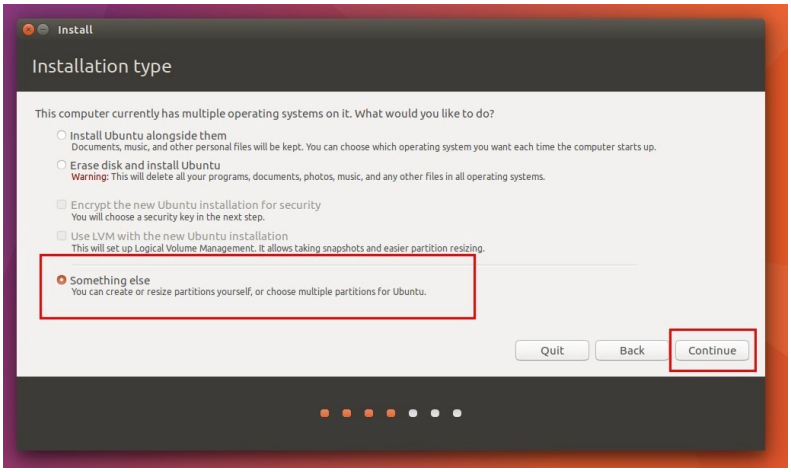

Figure 22: Select "Something else" option and click on the continue button

Warning: It is highly recommended you to read the warning messages carefully before select any other option other than "Something else" option.

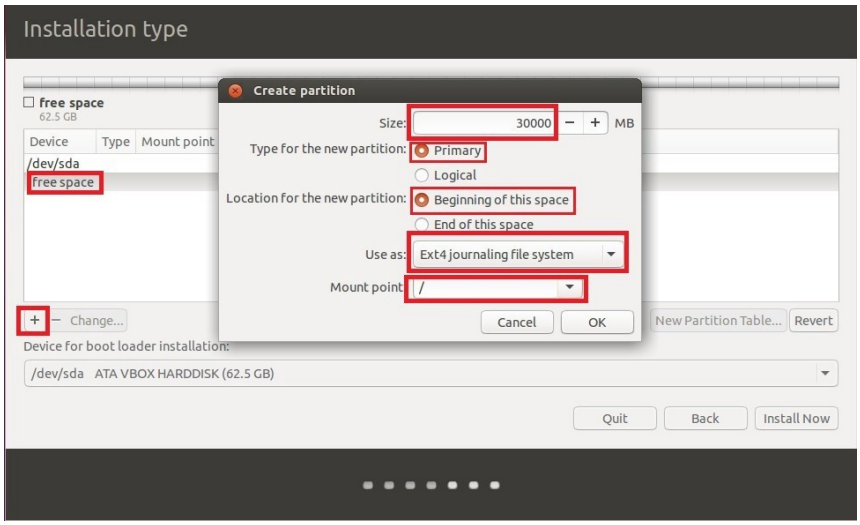

Figure 23: Select free space option from the Installation type window, Click on the "+" button and a new window "Create partion" will open. Specify the size (where Ubuntu will install, same as drive C for windows). Select "Ext4" from "Use as" drop down menu. FInally select / (forward slash) in "Mount point" option

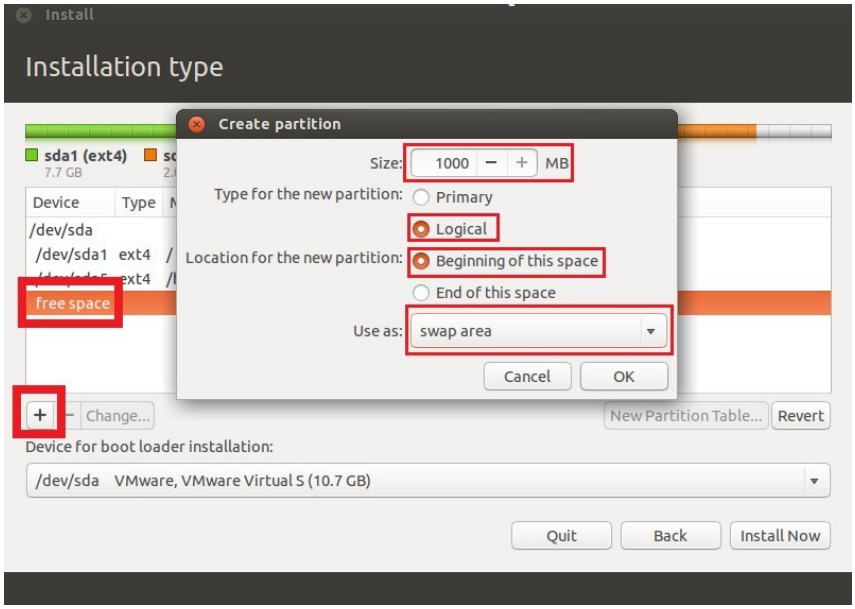

Figure 24: Select free space from the Installation type window. Click on the "+" button and a new window "create partition" will open. Specify the size (will be considered as a virtual memory when the RAM is full). Select "Swap" from "Use as" drop down menu

Info: Always specify the size for swap partition as double the size of your RAM. As an example, if your RAM size is 4GB then set the swap size as 8GB