Lab No 01.a

Ubuntu Installation

Objective: Is to understand the process of Linux installation.

Scope: Linux distribution Ubuntu 18.04 installation.

Task:

Step 1) Download Ubuntu 18.04 LTS ISO File

Please make sure you have the latest version of Ubuntu 18.04 LTS, If not, please download the ISO file from the link here

https://www.ubuntu.com/download/desktop

Since Ubuntu 18.04 LTS only comes in a 64-bit edition, so you can install it on a system that supports 64-bit architecture.

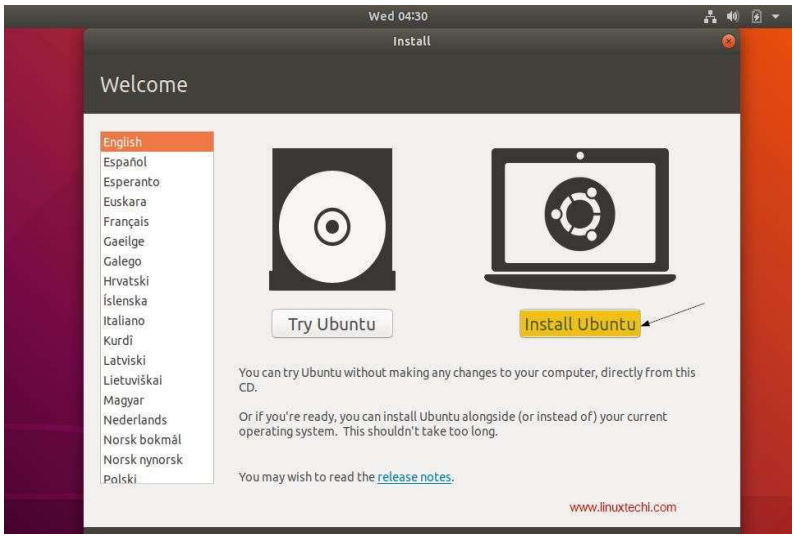
Step 2) Create a Bootable Disk

Once the ISO file is downloaded then next step is to burn the downloaded ISO image into the USB/DVD or flash drive to boot the computer from that drive.

Also make sure you change the boot sequence so that system boots using the bootable CD/DVD or flash drive.

Step 3) Boot from USB/DVD or Flash Drive

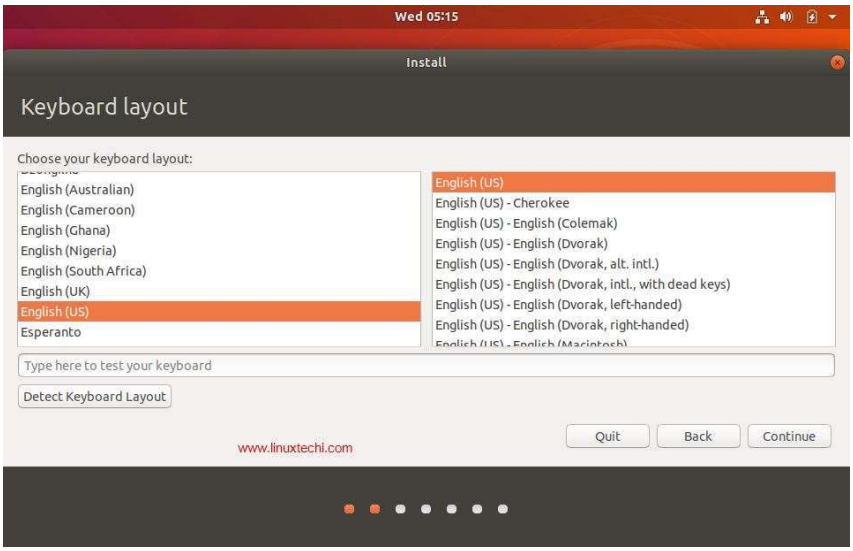
Once the system is booted using the bootable disk, you can see the following screen presented before you with options including "**Try Ubuntu**" and "**Install Ubuntu**" as shown in the image below,



Even though when you click "Try Ubuntu" you can have a sneak peek into the 18.04 LTS without installing it in your system, our goal here is to install Ubuntu 18.04 LTS in your system. So click "**Install Ubuntu**" to continue with the installation process.

Step 4) Choose your Keyboard layout

Choose your favorite keyboard layout and click "Continue". By default English (US) keyboard is selected and if you want to change, you can change here and click "Continue",

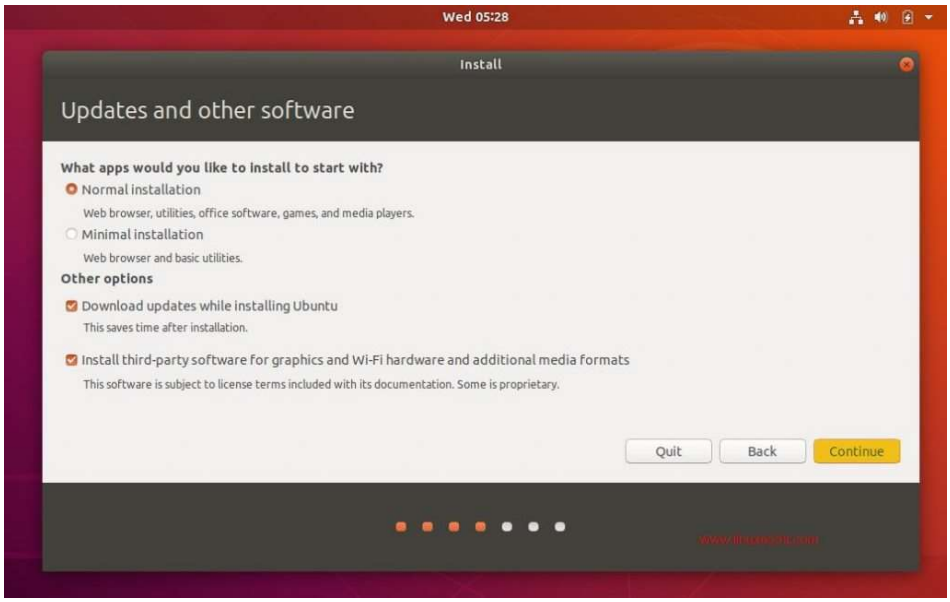


Step 5) Preparing to Install Ubuntu and other Software

In the next screen, you'll be provided following beneath options including:

Type of Installation:

- Normal Installation or Minimal installation, If you want a minimal installation then select second option otherwise go for the Normal Installation. In my case I am doing Normal Installation
- Download Updates While Installing Ubuntu (select this option if your system has internet connectivity during installation)
- Install third party software for graphics and Wi-Fi hardware, MP3 and additional media formats Select this option if your system has internet connectivity)



click on "**Continue**" to proceed with installation

Step 6) Select the appropriate Installation Type

Next the installer presents you with the following installation options including:

- Erase Disk and Install Ubuntu
- Encrypt the new Ubuntu installation for security
- Use LVM with the new Ubuntu installation
- Something Else

Where,

Erase Disk and Install Ubuntu – Choose this option if your system is going to have only Ubuntu and erasing anything other than that is not a problem. This ensures a fresh copy of Ubuntu 18.04 LTS is installed in your system.

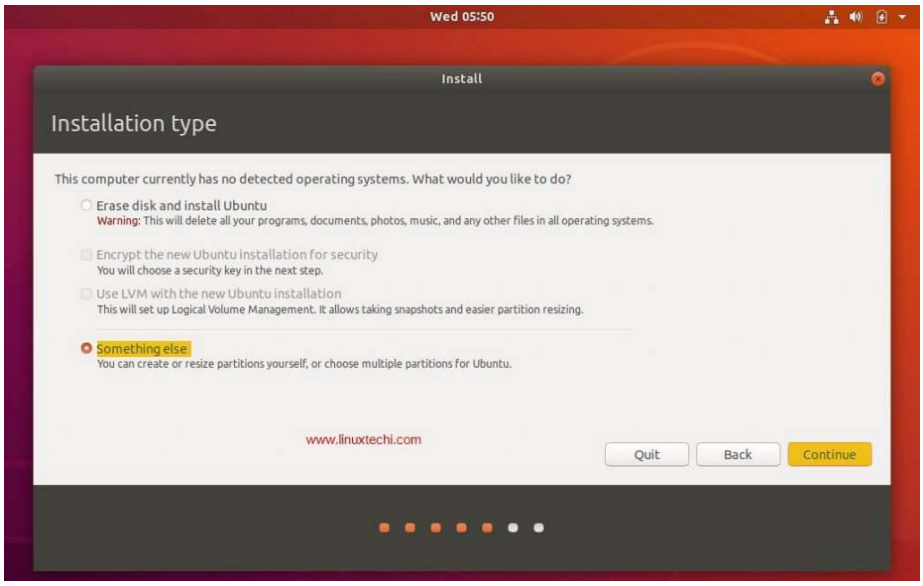
Encrypt the new Ubuntu installation for security – Choose this option if you are looking for extended security for your disks as your disks will be completely encrypted. If you are beginner, then it is better not to worry about this option.

Use LVM with the new Ubuntu installation – Choose this option if you want to use LVM based file systems.

Something Else – Choose this option if you are advanced user and you want to manually create your own partitions and want to install Ubuntu along with existing OS (May be Windows or other Linux Flavor)

In this article, we will be creating our custom partitions on a hard disk of 40 GB and the following partitions are to be created:

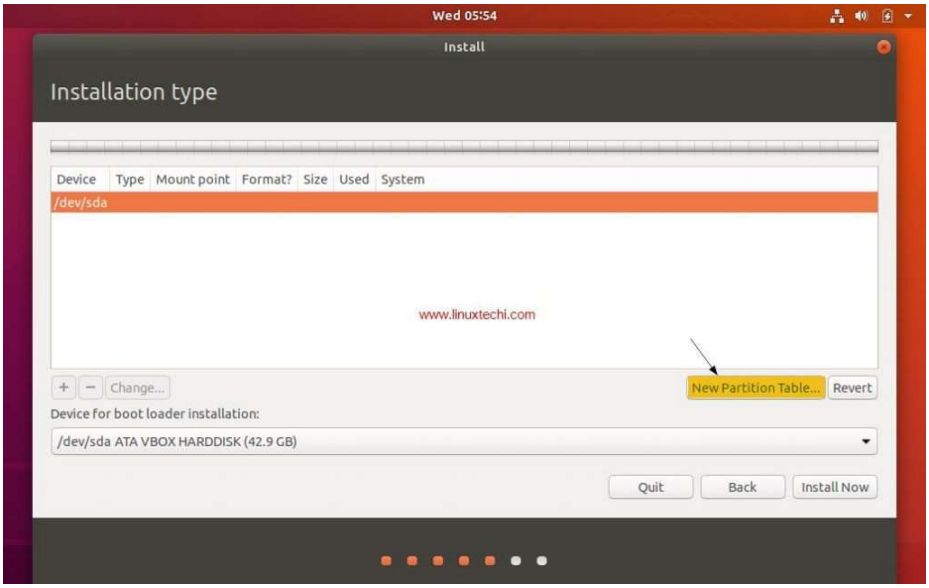
- /boot 1 GB (ext4 files system)
- /home 18 GB (ext4 file system)
- / 12 GB (ext4 file system)
- /var 6 GB (ext4 file system)
- Swap 2 GB

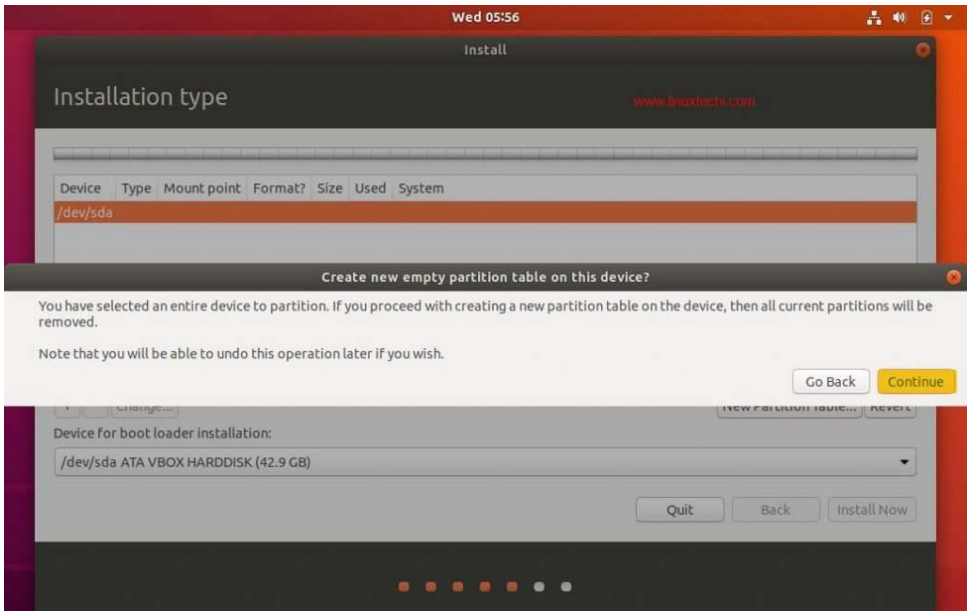


Now, Choose "**Something Else**" and Click on continue

You can see the available disk size for Ubuntu in the next window as shown below:

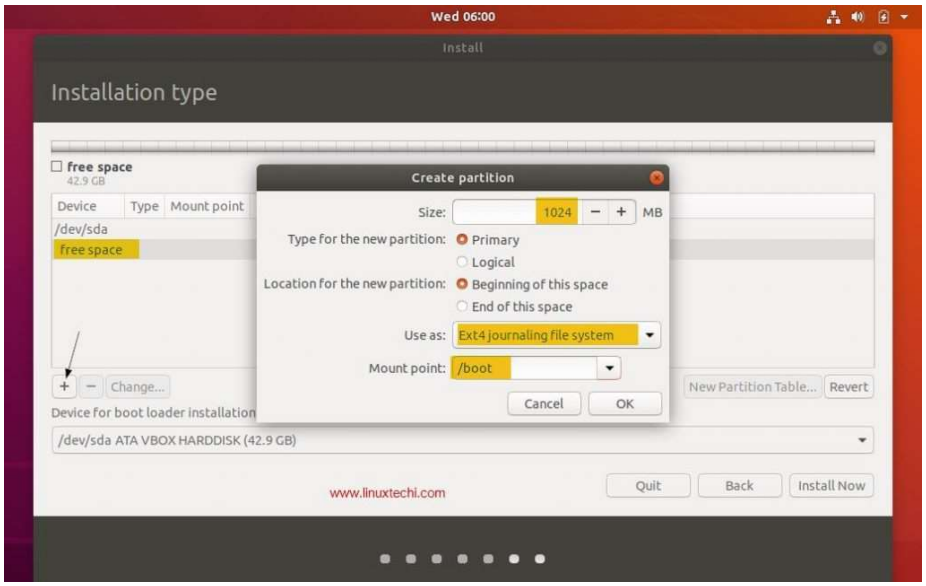
Now in order to create your own partitions, click on "**New Partition Table**"





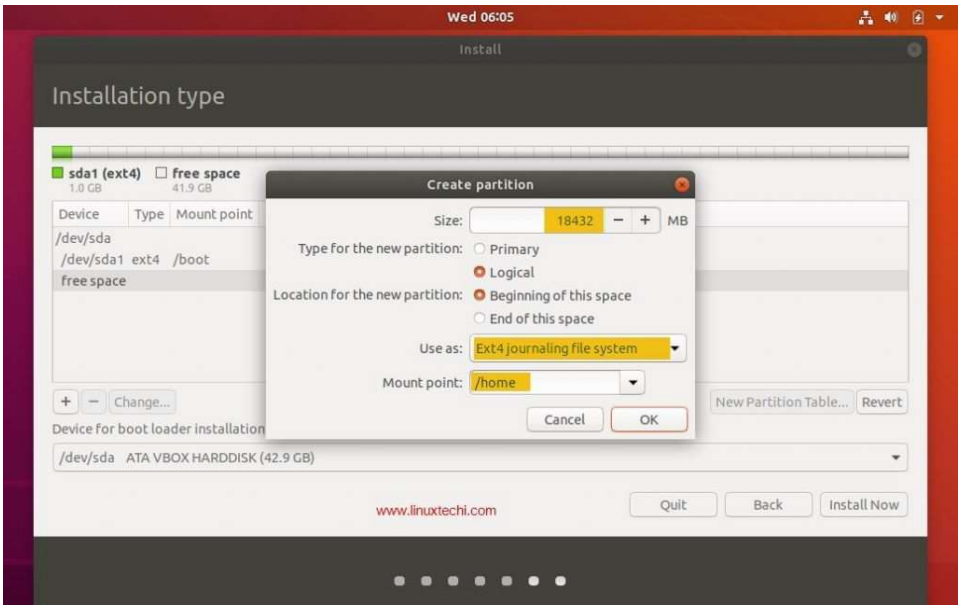
Click on Continue

Create /boot partition of size 1GB, Select the free space and then Click on the "+" symbol to create a new partition

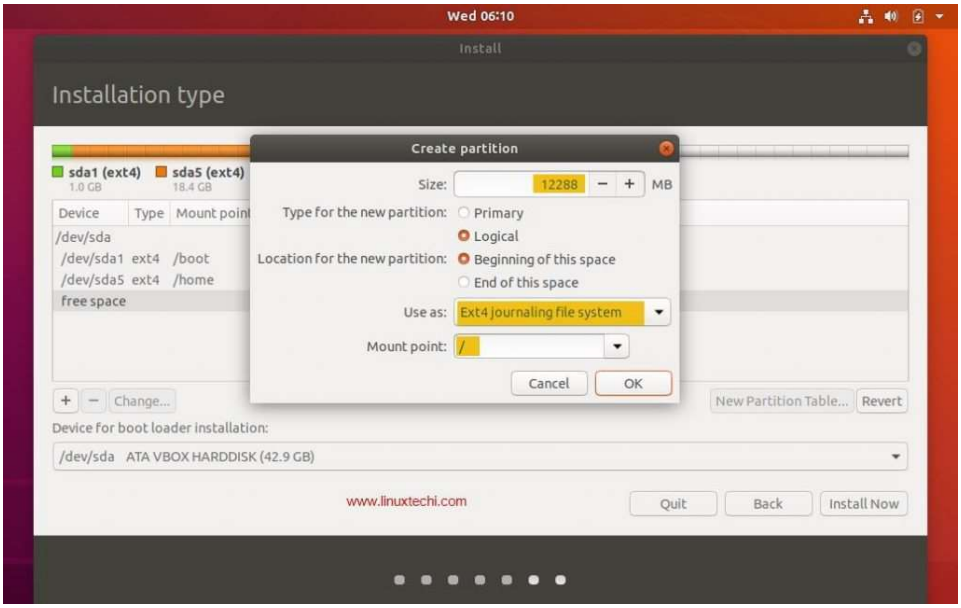


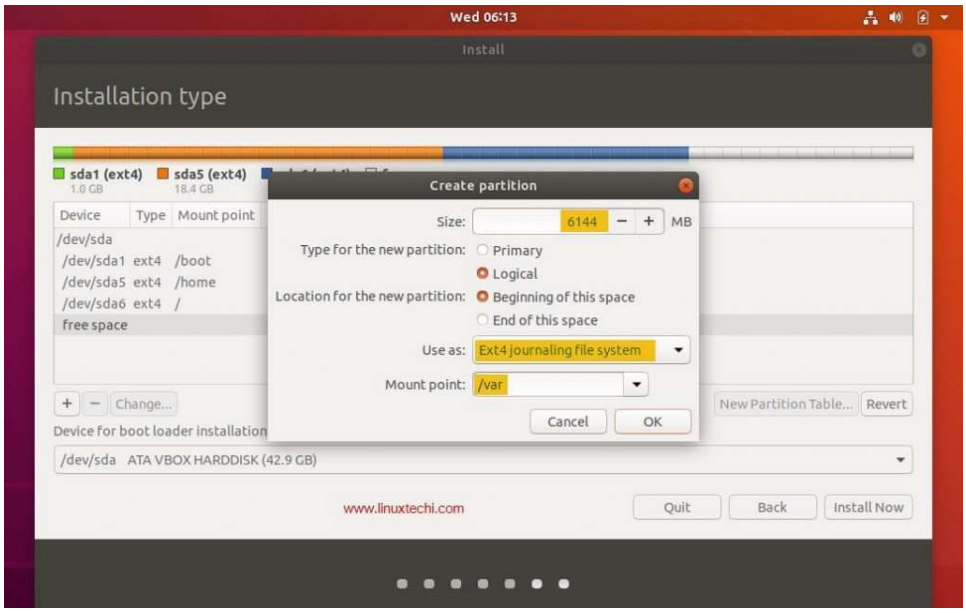
Click on "OK"

Let's create /home partition of size 18 GB,

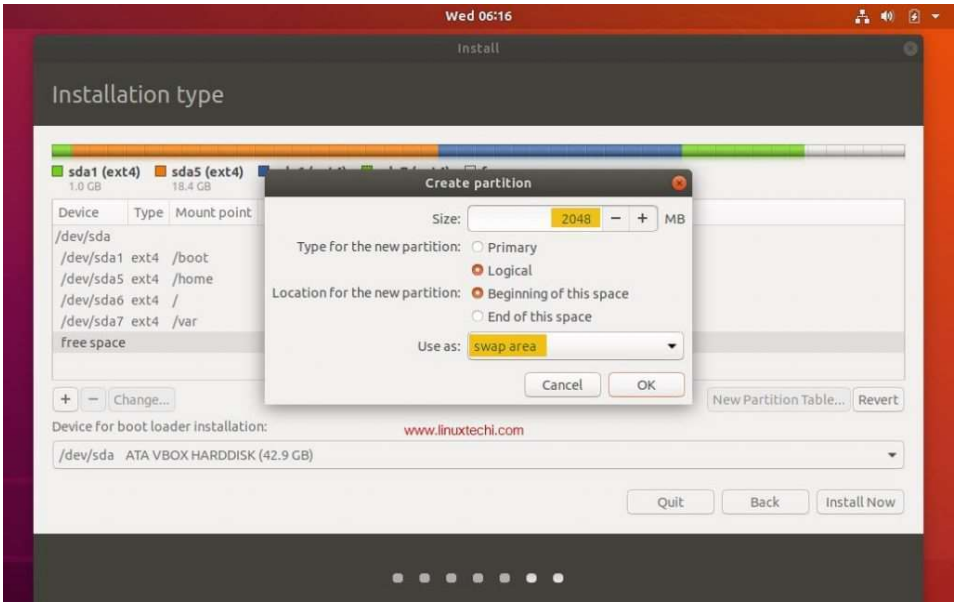


In the same way create / & /var file system of size 12 GB & 6 GB respectively



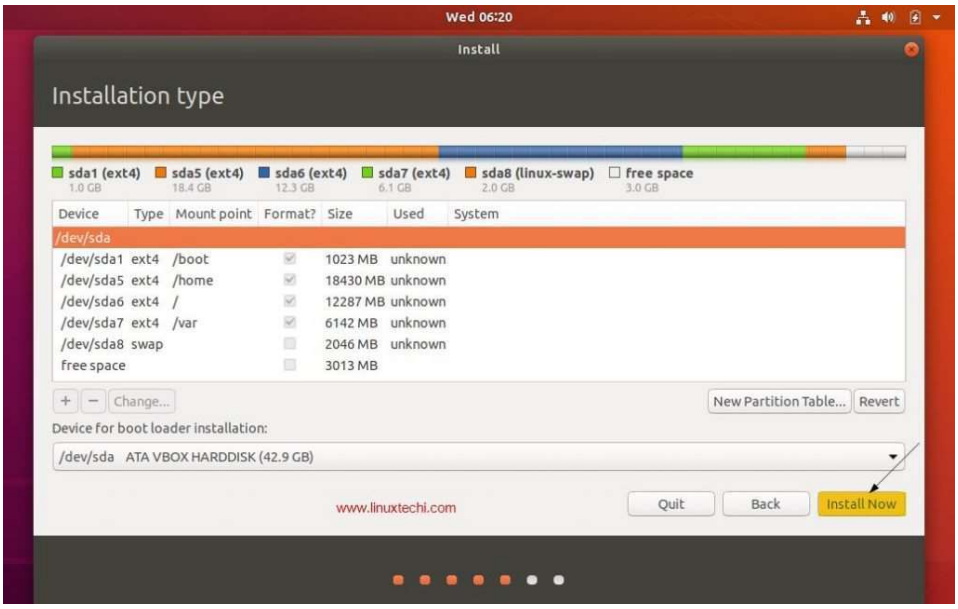


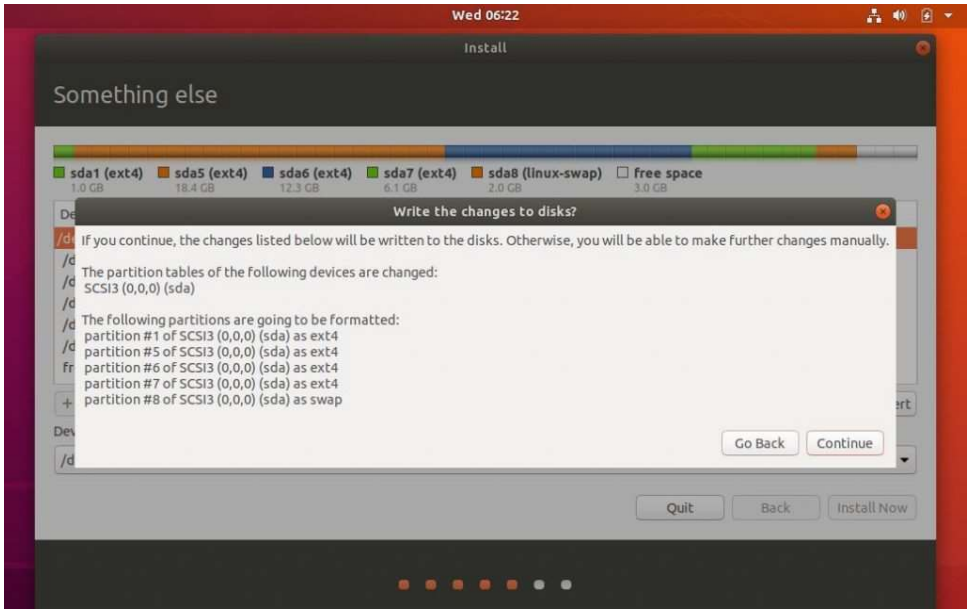
Now create last partition as swap of size 2 GB,



Click on OK

Once you are done with the partition creation task , then click on "**Install Now**" option to proceed with the installation

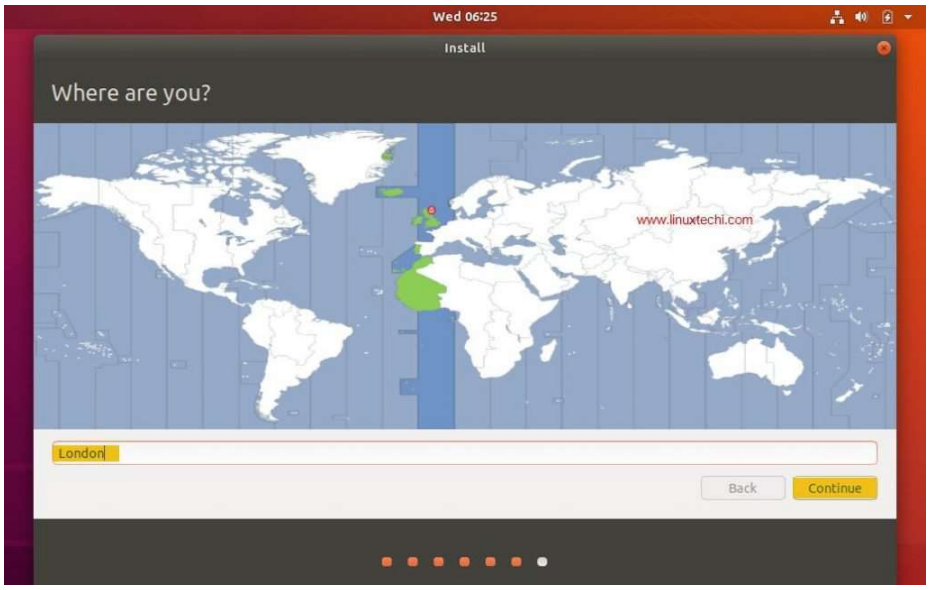




Now click on “Continue” to write all the changes to the disks

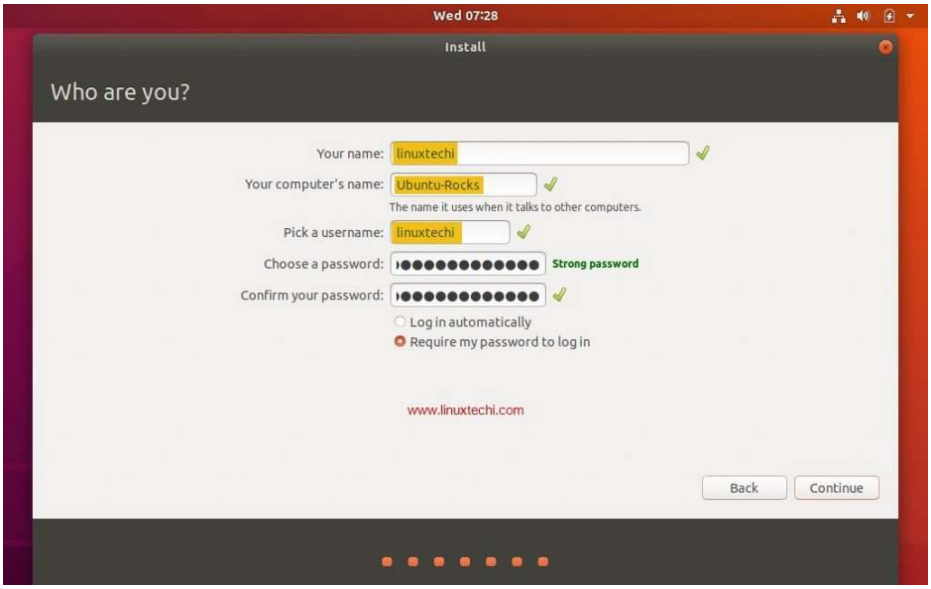
Step 7) Select Your Time zone

Choose your favorite time zone and then click on “Continue”



Step 8) Provide your User Credentials

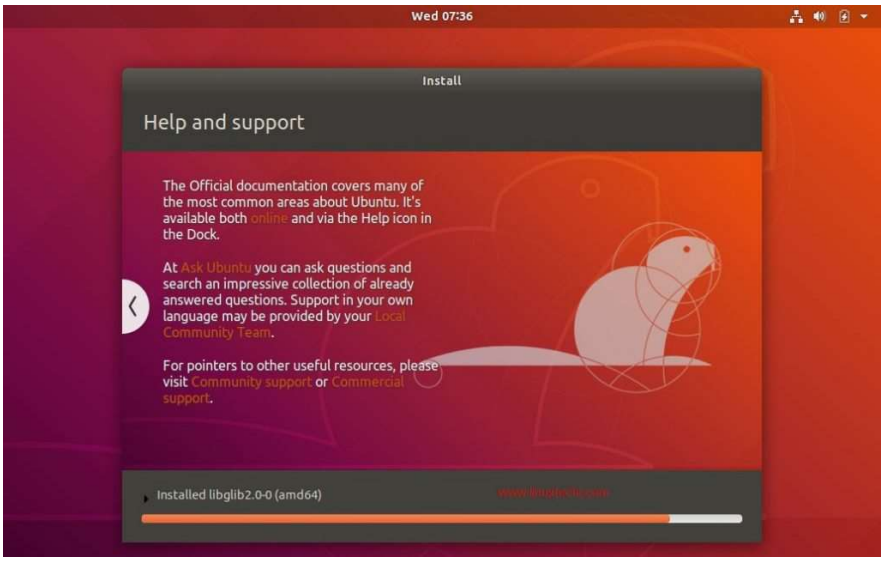
In the next screen you will be prompted to provide your user credentials. In this screen provide your name, computer name, username and the password to login into Ubuntu 18.04 LTS



Click "Continue" to begin the installation process.

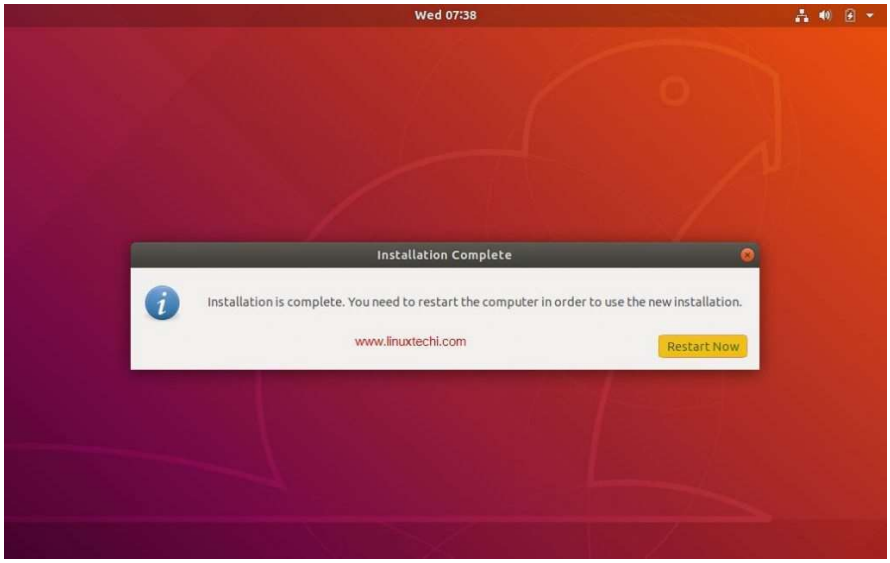
Step 9) Start Installing Ubuntu 18.04 LTS

The installation of Ubuntu 18.04 LTS starts now and will take around 5-10 mins depending on the speed of your computer,



Step 10) Restart Your System

Once the installation is completed, remove the USB/DVD from the drive and Click "Restart Now" to restart your system.

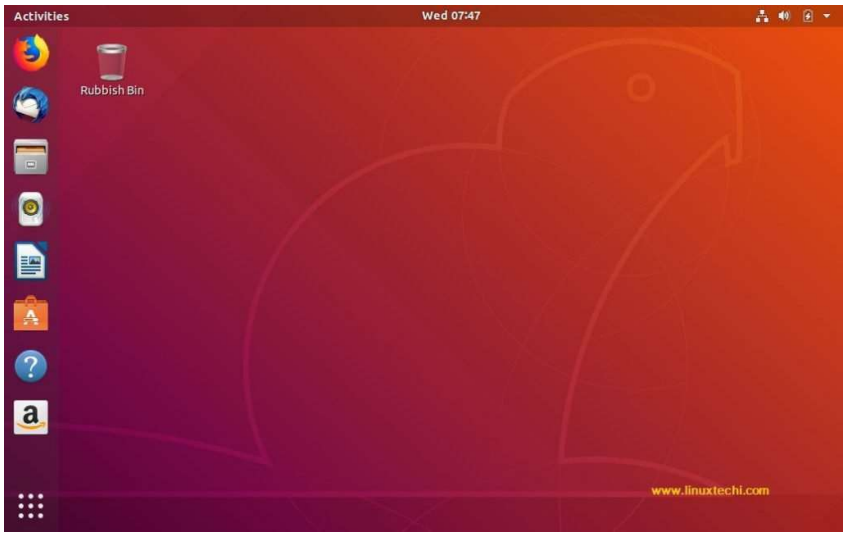


Read More on : How to Install VirtualBox 6.0 on Ubuntu 18.04 LTS / 18.10 / CentOS 7

Step:11) Login to Your Ubuntu 18.04 desktop

Once your system has been rebooted after the installation then you will get the beneath login screen, enter the User name and password that you have set during installation (Step 8)


Wed 07:44
linuxtechi
Password:
Cancel
Sign In
ubuntu


Activities
Wed 07:47
Rubbish Bin
www.linuxtechi.com

Lab No 01.b

BASH Commands

Objective:

This Lab demonstrates different useful BASH Commands

Scope:

Linux BASH commands

SYSTEM INFORMATION

```
# Display Linux system information
uname -a
# Display kernel release information
uname -r
# Show which version of redhat installed
cat /etc/redhat-release
# Show how long the system has been running + load
uptime
# Show system host name
hostname
# Display the IP addresses of the host
hostname -I
# Show system reboot history
last reboot
# Show the current date and time
date
# Show this month's calendar
cal
# Display who is online
w
# Who you are logged in as
Whoami
```

HARDWARE INFORMATION

```
# Display messages in kernel ring buffer
dmesg
# Display CPU information
cat /proc/cpuinfo
# Display memory information
cat /proc/meminfo
# Display free and used memory ( -h for human readable, -m for MB, -g for GB.)
free -h
# Show info about disk sda
hdparm -i /dev/sda
```

PERFORMANCE MONITORING AND STATISTICS

```
# Display and manage the top processes
top
# Interactive process viewer (top alternative)
htop
# Display processor related statistics
mpstat 1
# Display virtual memory statistics
vmstat 1
```

USER INFORMATION AND MANAGEMENT

```
# Display the user and group ids of your current user.
id
# Display the last users who have logged onto the system.
last
# Show who is logged into the system.
```

```
who
# Show who is logged in and what they are doing.
w
# Create a group named "test".
groupadd test
# Create an account named john, with a comment of "John Smith" and create the user's home
directory.
useradd -c "John Smith" -m john
# Delete the john account.
userdel john
# Add the john account to the sales group
usermod -aG sales john
```

FILE AND DIRECTORY COMMANDS

```
# List all files in a long listing (detailed) format
ls -al
# Display the present working directory
pwd
# Create a directory
mkdir directory
# Remove (delete) file
rm file
# Remove the directory and its contents recursively
rm -r directory
# Force removal of file without prompting for confirmation
rm -f file
# Forcefully remove directory recursively
rm -rf directory
# Copy file1 to file2
cp file1 file2
# Copy source_directory recursively to destination. If destination exists, copy source_directory into
destination, otherwise create destination with the contents of source_directory.
cp -r source_directory destination
# Rename or move file1 to file2. If file2 is an existing directory, move file1 into directory file2
mv file1 file2
# Create symbolic link to linkname
ln -s /path/to/file linkname
# Create an empty file or update the access and modification times of file.
touch file
# View the contents of file
cat file
# Browse through a text file
less file
# Display the first 10 lines of file
head file
# Display the last 10 lines of file
tail file
# Display the last 10 lines of file and "follow" the file as it grows.
tail -f file
```

PROCESS MANAGEMENT

```
# Display your currently running processes
ps
# Display all the currently running processes on the system.
ps -ef
```

NETWORKING

```
# Display all network interfaces and ip address
ifconfig -a
```

```
# Display eth0 address and details
ifconfig eth0
# Query or control network driver and hardware settings
ethtool eth0
# Send ICMP echo request to host
ping host
# Display whois information for domain
whois domain
# Display DNS information for domain
dig domain
```

DISK USAGE

```
# Show free and used space on mounted filesystems
df -h
# Show free and used inodes on mounted filesystems
df -i
# Display disks partitions sizes and types
fdisk -l
# Display disk usage for all files and directories in human readable format
du -ah
# Display total disk usage off the current directory
du -sh
```

DIRECTORY NAVIGATION

```
# To go up one level of the directory tree.  (Change into the parent directory.)
cd ..

# Go to the $HOME directory
cd
# Change to the /etc directory
cd /etc
```

Homework:

1. Install Linux mint 19.x or Ubuntu 18.x on your laptop or desktop computer
2. Apply all the commands on Ubuntu Terminal