LINUX CLASS-1

LINUX:

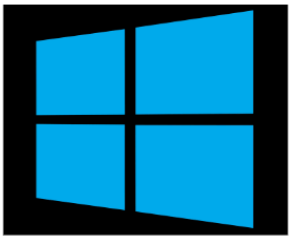
Linux is an free and Open-source operating system with high security. Linux is multi user based OS.

OS: Operating System

An Operating System (OS) is a software that acts as an interface between computer hardware components and the user.

Every computer system must have at least one operating system to run other programs. Applications like Browsers, MS Office, Notepad Games, etc., need some environment to run and perform its tasks.

TYPES OF OS:



Key Features of Linux:

- Linux follows the open-source model.
- Linux has multiuser and multitasking capabilities.
- Security features.
- Linux is used for servers, embedded systems, supercomputers, etc

LINUX OS DISTRIBUTIONS:

Many of the users taken the linux OS and modified according to their requirements and released into the market with different names called Linux distribution.

- RedHat
- Ubuntu
- Debian
- Centos
- Fedora
- Opensuse
- Kali Linux
- Amazon Linux

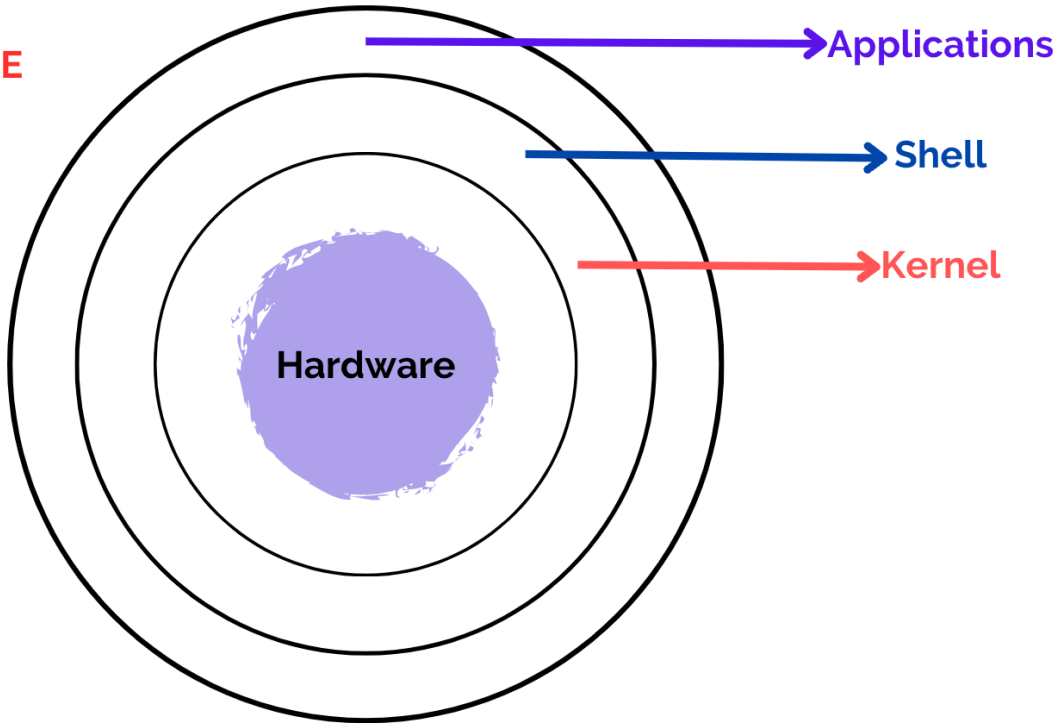
- Rocky Linux

HISTORY:

On Sep 17th 1991, Linus Torvalds a student at the university of Helsinki, Finland, He released the first version of the Linux kernel, known as Linux 0.01, as open-source software.

- The Linux kernel is written in C language.
- He wrote this program specially for his own PC
- Firstly he wanted to name it as 'Freax' but later it became 'Linux'.
- Today, supercomputers, smart phones, desktop, web servers, tablet, laptops and home appliances like washing machines, DVD players, routers, modems, cars, refrigerators, etc use Linux OS.

ARCHITECTURE



KERNEL:

It is the core or the heart of the operating system. It's the central part that manages and facilitates communication between the computer's hardware and software.

SHELL:

A shell that allows users to interact with the operating system. There are two types of shells.

- Command Line Interface (CLI): Executes the command provided by user given in the form command and display the output in terminal.
- Executes the process provided by user in graphical way and output is displayed in the graphical window.

COMMAND:

- It is an instruction/request given to the operating system by a user.
- It tells computer to perform a particular task.

TERMINAL:

- It is a text-based interface that allows you to interact with the operating system by typing commands.
- It's a way for you to communicate with the linux machines.

LETS DIVE INTO PRACTICAL SESSION:

By default we are in ec2-user, but if we want to perform any action we should be in **root** user

because, root is the ultimate king of linux, root has full permissions, so that we can run any command anywhere.

To login as root user : **sudo -i** (or) **sudo su -**

Here sudo : super user do

to logout from root user and go back to ec2-user : **exit**

In Linux we have different types of commands

- SYSTEM COMMANDS
- HARDWARE COMMANDS
- FILE COMMANDS
- PERMISSION COMMANDS
- USER COMMANDS
- SEARCH COMMANDS
- NETWORKING COMMANDS

SYSTEM COMMANDS: Used to get system information

uname : used to get type of OS

uname -r : used to get kernel version of our OS

uname -a : used to get full info about OS

clear: this command is used to clear the **clear** (or) you can use **ctrl + l** as a short cut

uptime : used to get since how long our system is in running state

uptime -p : this will give only time

hostname: used to get private dns name of our system

hostname -i : used to get private ip of our system

hostnamectl set-hostname “swiggy” : used to change hostname

ip addr : used to get private IP

ip route : used to get private IP

ifconfig : used to get private IP

date : to get todays date

timedatectl : used to get timezones

timedatectl set-timezone Asia/Kolkata : used to change Timezone to IST

who : used to see how many users have been loggin into your system

whoami : used to see the current user.

HARDWARE COMMANDS:

lscpu : cpu information of our server

top : used to get cpu utilization

df -h : used to get the 8 volume details (used, available)

free : used to get the free ram in our server

free -m : used to convert the ram in MB

free -h : used to ram info in human readable format