

## Introduction to Linux:

Linux is a community of open-source Unix like operating systems that are based on the Linux Kernel. It was initially released by Linus Torvalds on September 17, 1991. It is a free and open-source operating system and the source code can be modified and distributed to anyone commercially or noncommercially under the GNU General Public License.

Initially, Linux was created for personal computers and gradually it was used in other machines like servers, mainframe computers, supercomputers, etc. Nowadays, Linux is also used in embedded systems like routers, automation controls, televisions, digital video recorders, video game consoles, smartwatches, etc. The biggest success of Linux is Android(operating system) it is based on the Linux kernel that is running on smartphones and tablets. Due to android Linux has the largest installed base of all general-purpose operating systems. Linux is generally packaged in a Linux distribution.

## Architecture of Linux :

**Kernel:** Kernel is the core of the Linux based operating system. It virtualizes the common hardware resources of the computer to provide each process with its virtual resources. This makes the process seem as if it is the sole process running on the machine. The kernel is also responsible for preventing and mitigating conflicts between different processes.

**System Library:** Isthe special types of functions that are used to implement the functionality of the operating system.

**Shell:** It is an interface to the kernel which hides the complexity of the kernel's functions from the users. It takes commands from the user and executes the kernel's functions.

**Hardware Layer:** This layer consists all peripheral devices like RAM/ HDD/ CPU etc.

**System Utility:** It provides the functionalities of an operating system to the user.

## Linux File Hierarchy Structure :

The Linux File Hierarchy Structure or the Filesystem Hierarchy Standard (FHS) defines the directory structure and directory contents in Unix-like operating systems. It is maintained by the Linux Foundation.

**/ ( root Dir ) :** It is the main source dir in linux OS  
**/etc :** It contains all the system config files information  
**/opt :** COntains all the 3rd party packages information  
**/var :** Contains all the system log messages information  
**/sbin :** Contains all the Admin commands information.  
**/bin :** Contains all the User commands information.  
**/media :** Contains all the removable devices information.  
**/mnt :** Contains all the mounted FS information  
**/home :** It is the default users home dir  
**/dev :** Contains all the devices information  
**/lib :** Contains all the library files information.  
**/boot :** Contains servers booting information.

**For any devops related corporate trainings do reach me: [maresh.devopsexpert@gmail.com](mailto:maresh.devopsexpert@gmail.com)**

**/proc** : Contains all the process related information.

**Lost + Found** : Contains unsaved data information

### **Supported Shells on Linux :**

/bin/sh ( **Bourne Shell** )

/bin/Bash ( **Bourne Again Shell** )

/bin/csh ( **Cshell** )

/bin/ksh ( **Korn Shell** )

/bin/zsh ( **Zshell** )

#echo \$SHELL ( **Displays the default shell information** )

#echo \$0 ( **Displays the current working shell** )

# =====> Login as ADMINISTRATOR

\$ =====> Login as Normal User

#who am i ( **Displays the current login user** )