

## Working with Linux CLI

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### Introduction to Linux Terminal:

A **terminal** refers to a wrapper program which runs a **shell**.

### Introducing with Linux Shells:

Most **shells** also manage foreground and background processes, command history and command line editing. These features (and many more) are standard in bash , the most common **shell** in modern **linux** systems.

```
[student@desktopX Desktop] $
      1       2       3       4
```

- 1: user name
- 2: hostname
- 3: user's current locaiton
- 4: user types (root: #, regular user: \$)

### Linux User's Types:

- => **root user**: Administrator (#)
- => **system user**: service (mail/ftp/games/daemon)-cannot login
- => **regular user**: student, guest, sakib (\$)

### PHYSICAL CONSOLE:

On text-based installations, Terminal can be the Linux machine's physical console, the hardware keyboard and display. Terminal access can also be configured through serial ports.

### VIRTUAL CONSOLE:

Another way to access a shell is from a virtual console. A Linux machine's physical console supports multiple virtual consoles which act like separate terminals. Each virtual console supports an independent login session.

If the graphical environment is available, it will run on the first virtual console in Red Hat Enterprise Linux 7. Five additional text login prompts are available on consoles two through six (or one through five if the graphical environment is turned off).

```
Alt + Ctrl + F1 => GUI - :0
Alt + Ctrl + F2 => new CMD terminal (F2-F6) - tty2-tty6
```

```
Login: student
pass: *****
```

```
[student@desktopX Desktop]$ su - root
Password: *****
[root@desktopX ~]# exit
```

### Screen:

```
$ ctrl + l = srceen clear
$ ctrl + shift +++ = screen size increase (GUI)
$ ctrl + "----" = screen size decrease (GUI)
$ ctrl + shift + "t" => new terminal (tab) (GUI)
$ Alt+F2 (type firefox)
$ Ctrl+d = Logout ;(CLI)
```

**Linux Command Syntax/Pattern:**

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 Commands entered at the shell prompt have three basic parts:

- Command to run
- Options to adjust the behavior of the command
- Arguments, which are typically targets of the command

**example: # ping -c4 172.25.11.254**

```
[student@desktopX Desktop]$ cd
[student@desktopX ~]$ ls                ;list of files and dir.
[student@desktopX ~]$ ll                ;file and dir properties
[student@desktopX ~]$ ls -l
[student@desktopX ~]$ ls -la           ; details list with hidden files and dir
[student@desktopX ~]$ ls -li          ; list of inode no
[student@desktopX ~]$ ls -lZ         ; shows SELinux Context
[student@desktopX ~]$ ls -lh /etc     ; size in Human Readable
```

```
blue - dir
b&w - file
red - compress (rpm/zip/rar)
green - execute file
yellow - device (terminal/cd/dvd/usb/hdd)
cyan - link file
magenta - Picture/image/media
```

```
[student@desktopX ~]$ pwd                ; present working directory
```

```
home dir                =>  "~"
root partition (My Computer) =>  "/"
root's home dir         =>  "/root"
user's home              =>  "/home"
i.e.: /home/student
```

```
[student@desktopX ~]$ => user's home dir
```

**Working with Linux More Commands:**

```
=====
[student@desktopX ~]$ w
[student@desktopX ~]$ who
[student@desktopX ~]$ whoami
[student@desktopX ~]$ hostname
[student@desktopX ~]$ tty
[student@desktopX ~]$ date
[student@desktopX ~]$ cal
[student@desktopX ~]$ cal 2016
[root@desktopX ~]# lastb                ; unsuccessful login user
[student@desktopX ~]$ runlevel          ; (5-GUI, 3-CMD, n-none)
[student@desktopX ~]$ uname -r         ; kernel version
```

```
[student@desktopX ~]$ uname ; OS name
[student@desktopX ~]$ uptime : system UP time info
[student@desktopX ~]$ ip addr
[root@desktopX ~]# fdisk -l
[root@desktopX ~]# lsblk
[student@desktopX ~]$ logout
[student@desktopX ~]$ history
[student@desktopX ~]$ history ; list of previous command
[student@desktopX ~]$ !45 ; 45 no command
[student@desktopX ~]$ history -c ; clear all previous history
[student@desktopX ~]$ history
```

#### Shutdown:

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```
[root@desktopX ~]# init 0
[root@desktopX ~]# poweroff
[root@desktopX ~]# shutdown -h now
[root@desktopX ~]# shutdown -h 5 now ; shutdown after 5 min
```

#### Restart:

=====

```
[root@desktopX ~]# reboot
[root@desktopX ~]# init 6
[root@desktopX ~]# shutdown -r now
[root@desktopX ~]# shutdown -r 5 now ; restart after 5 min
```