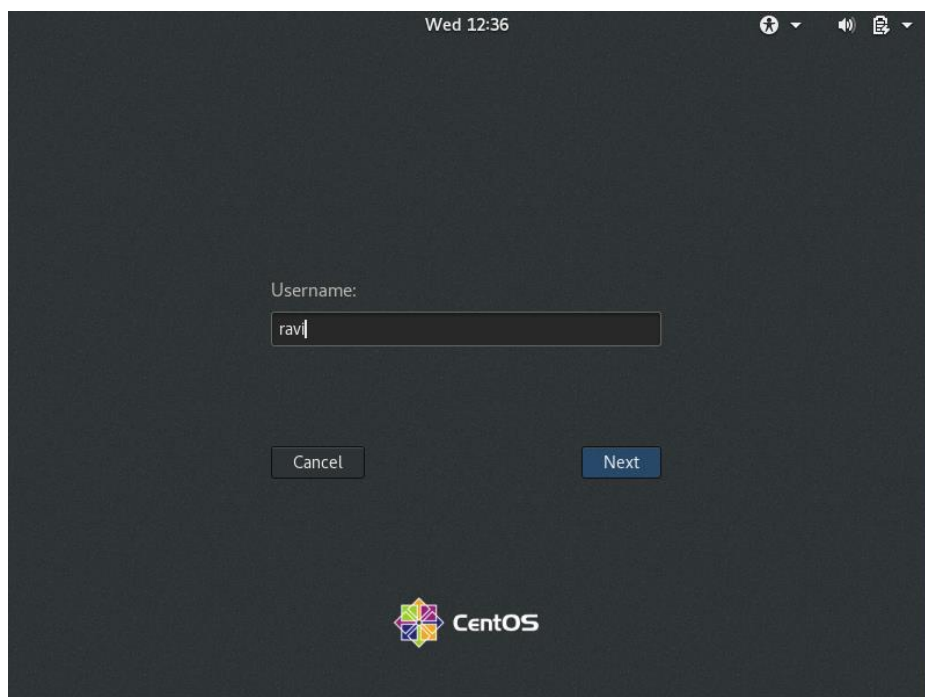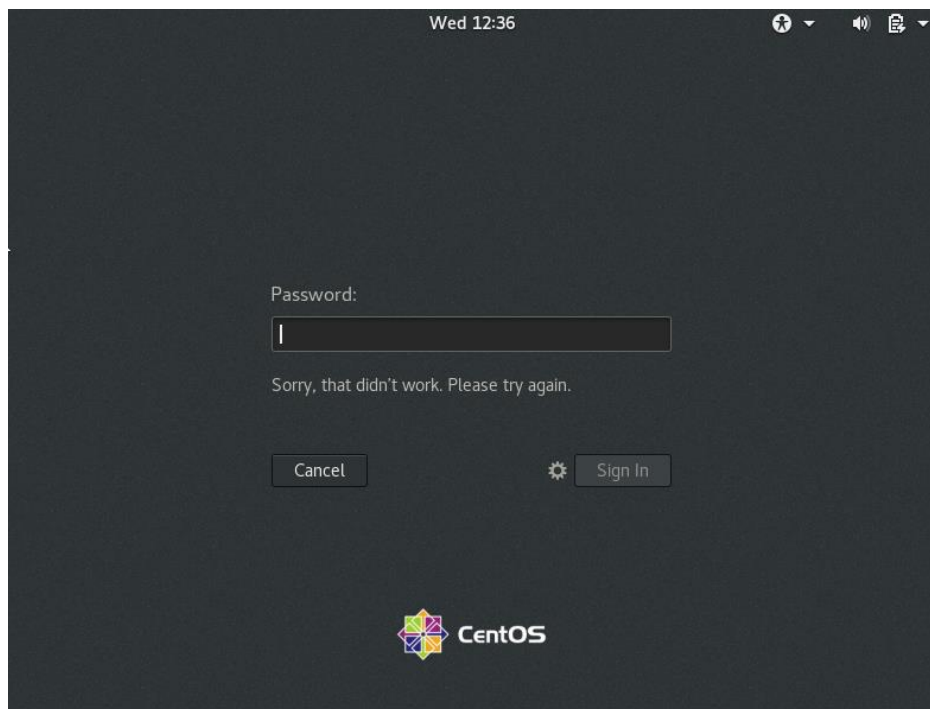# Basics Of Linux

1. What happens when you login a non-existent users or username?

Solution: First, we've to click on **not listed?** option there, then it'll ask for details

Now, as we're logging for a non-existent user, it'll eventually prompt us this message:

We understand here that registered user can only log in to OS.

2. Login into your account and then change password?

- Change your password into *IneuR0n#42* and hit the **Enter** key

Solution: As this password string is valid, it won't give any error.

- Try again to change password but use like password *1234* or *abcd*

Solution: As the password string is so small, it'll notify us about the length.

```
[root@localhost ~]# sudo passwd saurav
Changing password for user saurav.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
[root@localhost ~]#
```

- Try again to change password but now don't use any password just hit **Enter** key

Solution: As there isn't any password string, it'll give error.

```
[root@localhost ~]# sudo passwd saurav
Changing password for user saurav.
New password:
BAD PASSWORD: No password supplied
Retype new password:
No password supplied
passwd: Authentication token manipulation error
[root@localhost ~]#
```

3. Working with Directories

- Enter the command **cd /** and then **ls** and then hit **Enter** key

Solution: Using cd / we can change directory and using 'ls', we can see files and directories in the current directory.

```
[saurav@localhost ~]$ cd /
[saurav@localhost /]$ ls
bin    dev   home   lib64   mnt   proc   run    srv   tmp   var
boot   etc   lib    media   opt   root   sbin   sys   usr
```

- Enter the command now **cd /home** and then hit **Enter** key

Solution: Home directory is used for storing the files related to the particular user and also configuration files are there.

```
[saurav@localhost /]$ cd /home
[saurav@localhost home]$ ls
saurav
```

- Enter **cd ..** and hit **Enter** key

Solution: It will move us one directory backward (or to the parent directory) from the current directory.

```
[saurav@localhost home]$ cd ..
[saurav@localhost /]$ cd /var/www/html
```

- Now enter **cd /var/www/html** and then type **cd** and hit **Enter** key

Solution: It will make us move to the html directory of www directory of var directory. As I'm not having www directory inside var, so it is showing 'No such file or directory' error.

```
[saurav@localhost /]$ cd /var/www/html
bash: cd: /var/www/html: No such file or directory
```

- Now type **cd /root** and then hit **Enter** key

Solution: To access root directory, we've to logged in as root user. And as I'm not, it is showing 'Permission denied error'.

```
[saurav@localhost var]$ cd /root
bash: cd: /root: Permission denied
[saurav@localhost var]$
```

4. *Working with File Listing*

- Go to **cd /etc** and type **ls**

Solution: In the etc folder, Linux System Configuration files live. So, we can see different file than the normal directories.

```
[saurav@localhost ~]$ cd /etc
[saurav@localhost etc]$ ls
abrt                     hosts.deny              protocols
adjtime                  hp                      pulse
aliases                  idmapd.conf             purple
aliases.db               init.d                  python
alsa                     inittab                 qemu-ga
alternatives             inputrc                 qemu-kvm
anacrontab               iproute2                radvd.conf
asound.conf              ipsec.conf              ras
at.deny                  ipsec.d                 rc0.d
audisp                   ipsec.secrets           rc1.d
audit                    iscsi                   rc2.d
avahi                    issue                   rc3.d
bash_completion.d        issue.net               rc4.d
bashrc                   java                    rc5.d
binfmt.d                 jvm                     rc6.d
bluetooth                jvm-commmon             rc.d
brltty                   kdump.conf              rc.local
brltty.conf              kernel                  rdma
centos-release           krb5.conf               redhat-release
centos-release-upstream  krb5.conf.d             request-key.conf
chkconfig.d              ksmtuned.conf           request-key.d
chrony.conf              ld.so.cache             resolv.conf
chrony.keys              ld.so.conf              resolv.conf.save
cifs-utils               ld.so.conf.d            rpc
```

- Then type **ls -al** and hit **Enter** key

Solution: Argument '-a' will show all files and '-l' will show the files in long listing format.

```
[saurav@localhost /]$ ls -al
total 20
dr-xr-xr-x.  17 root root  224 Oct 19 11:54 .
dr-xr-xr-x.  17 root root  224 Oct 19 11:54 ..
lrwxrwxrwx.   1 root root    7 Oct 17 19:25 bin -> usr/bin
dr-xr-xr-x.   5 root root 4096 Oct 19 12:05 boot
drwxr-xr-x.  20 root root 3160 Oct 19 14:32 dev
drwxr-xr-x. 139 root root 8192 Oct 19 14:48 etc
drwxr-xr-x.   3 root root   20 Oct 17 19:47 home
lrwxrwxrwx.   1 root root    7 Oct 17 19:25 lib -> usr/lib
lrwxrwxrwx.   1 root root    9 Oct 17 19:25 lib64 -> usr/lib64
drwxr-xr-x.   2 root root    6 Apr 11  2018 media
drwxr-xr-x.   2 root root    6 Apr 11  2018 mnt
drwxr-xr-x.   4 root root   49 Oct 19 12:16 opt
dr-xr-xr-x. 207 root root    0 Oct 19 14:32 proc
dr-xr-x---.   5 root root  205 Oct 19 15:09 root
drwxr-xr-x.  40 root root 1200 Oct 19 14:35 run
lrwxrwxrwx.   1 root root    8 Oct 17 19:25 sbin -> usr/sbin
drwxr-xr-x.   2 root root    6 Apr 11  2018 srv
dr-xr-xr-x.  13 root root    0 Oct 19 14:32 sys
drwxrwxrwt.  16 root root 4096 Oct 19 15:59 tmp
drwxr-xr-x.  13 root root  155 Oct 17 19:25 usr
drwxr-xr-x.  20 root root  282 Oct 17 19:51 var
[saurav@localhost /]$ 
```

- Then use **ls -i** and hit **Enter** key

Solution: This '-i' argument shows the inode number of directory/file which is number showing the storage location of directory/file.

```
[saurav@localhost /]$ ls -i
   77923 bin   50332835 home   16778375 mnt        7334 run   16777288 tmp
      64 boot        81 lib    33595753 opt       77927 sbin  33593488 usr
       3 dev         83 lib64         1 proc   50332836 srv   50331713 var
16777281 etc         84 media  33574977 root         1 sys
```

- Then use **ls –help** and see other options about **ls** command

Solution: It will show us various arguments we can use with ls.

```
[saurav@localhost /]$ ls --help
Usage: ls [OPTION]... [FILE]...
List information about the FILEs (the current directory by default).
Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

Mandatory arguments to long options are mandatory for short options too.
  -a, --all                  do not ignore entries starting with .
  -A, --almost-all           do not list implied . and ..
      --author               with -l, print the author of each file
  -b, --escape               print C-style escapes for nongraphic characters
      --block-size=SIZE      scale sizes by SIZE before printing them; e.g.,
                               '--block-size=M' prints sizes in units of
                               1,048,576 bytes; see SIZE format below
  -B, --ignore-backups       do not list implied entries ending with ~
  -c                         with -lt: sort by, and show, ctime (time of last
                               modification of file status information);
                               with -l: show ctime and sort by name;
                               otherwise: sort by ctime, newest first
  -C                         list entries by columns
      --color[=WHEN]         colorize the output; WHEN can be 'never', 'auto',
                               or 'always' (the default); more info below
  -d, --directory            list directories themselves, not their contents
  -D, --dired                generate output designed for Emacs' dired mode
  -f                         do not sort, enable -aU, disable -ls --color
  -F, --classify             append indicator (one of */=>@|) to entries
      --file-type            likewise, except do not append '*'
```

5. *Know where you are and where you working*

- Check which location you working

Solution: It shows us the Present Working Directory.

```
[saurav@localhost bin]$ pwd
/bin
```

- Now use **cd /var** and hit **Enter** key

Solution:

```
[saurav@localhost bin]$ cd /var
[saurav@localhost var]$ ls
account   cache   db      games     kerberos   local   log    nis   preserve   spool   yp
adm       crash   empty   gopher    lib        lock    mail   opt   run        tmp
```