# Topic: User Management

**1) How to add a new group?**
**2) How to add a new user?**
**3) Switching from one user to another user**
**4) How to delete user?**
**5) How to delete group ?**
**6) How to change ownership of a file?**
**7) How to change group membership of a file?**
**8) How to change group of a user ?**
**9) Add a User to Multiple Groups**
**10) How to check available groups?**
**11) How to change password of a user?**

## 1) How to add a New Group?

We have to use addgroup command. For this sudo permission is required.
**sudo means superuser do.**

**$ sudo addgroup pythongroup**

**Note: We can see all created groups information inside /etc/group file.**

## 2) How to add User:

We have to use adduser command. For this sudo permission is required.
**$ sudo adduser --ingroup pythongroup milky**

**Note:** While creating new user, if we are not specifying groupname, then a new group will be created with the same name as username.

## 3) Switching from One User to another User:

**We have to use su command.**
**su means switch user.**
**syntax: su newuser**
**$ whoami**
**ec2-user**
**$ su milky**
**Password:**
**$ whoami**
**milky**
**$ exit**
**exit**
**$ whoami**
**ec2-user**

**Note:** If we use su command without any argument, then it will switch to root user. Hence the following 2 commands are equal. (But in ubuntu this option is not working)

**$ su**

https://pythonlife.in/
**$ su root**
**In Ubuntu, to switch to root user , we have to use:**
**$ sudo –i**

# su with and without - Option:

If we use su command without - option, then only user will be switched but environment won't be switched
If we use - option with su command, then both user and environment will be switched

## How to Delete User

We have to use deluser command.
To delete user compulsory sudo permission must be required.
**$ sudo deluser milky**
**Removing user `milky' ...**

**Note:** We can check whether user deleted or not by using **/etc/passwd file**

## How to Delete Group

We have to use delgroup command.
For this sudo access must be required and no user associated with the group.
**$ sudo delgroup pythongroup**

## How to Change Ownership of a File:

**We can change by using chown command.**
**But for this sudo permission required.**

## How to Change Group Membership of a File?

**We have to use chgrp command.**
**chgrp means change group.**
**To use this command compulsory sudo permission must be required.**

## How to Change Group of a User:

**We have to use usermod command.**
**Syntax: $ usermod -g groupname username**

## Add a User to Multiple Groups:

**While assigning the secondary groups to a user account, we can easily assign multiple groups at once by separating the list with a comma.**
**$ usermod -a -G group1,group2,group3 username**

## How to Change Password of User:

**To change a password for user named milky:**
**$ sudo passwd milky**

## What is the difference between adduser and useradd in Linux?

Useradd is built-in Linux command that can be found on any Linux system. However, creating new users with this low-level is a difficult and lengthy task. First we have to creater user and then we have to provide password and extra information separately.
Adduser is not a standard Linux command. It is essentially a Perl script that uses the useradd command in the background. This high-level utility is more efficient in properly creating new users on Linux. Default parameters for all new users can also be set through the adduser command.

## sudo Command:

sudo means Super User Do.
We can use sudo command to execute commands as another user, mostly root user.

## sudoers File:

Which commands can be executed by using sudo of a particular user, information is configured in sudoers file, which is present in /etc directory.
System Administrators are responsible to configure this file.
**$ ls -l /etc/sudoers**

```
# User privilege specification
root ALL=(ALL:ALL) ALL
# Members of the admin group may gain root privileges
%admin ALL=(ALL) ALL
# Allow members of group sudo to execute any command
%sudo ALL=(ALL:ALL) ALL
# See sudoers(5) for more information on "#include" directives:
#includedir /etc/sudoers.d
```

# Topic: Package Management

## Package:

Package is nothing but a collection of files. It contains data and metadata like description, version and dependencies etc.

## Package Manager:

- It is responsible to installs, upgrades and removes packages.
- It is responsible to manage dependencies.
- It will track all installed packages.
- Eg: yum is the package manager in **RedHat Linux**.
- apt is the package manager in **ubuntu.**

## Advanced Packaging Tool (apt):

### 1) Searching for Packages:

**$ apt-cache search string**
**It will search for packages based on given search string.**
**$ apt-cache search xeyes**
**x11-apps - X applications**

**xfce4-eyes-plugin - eyes that follow your mouse for the Xfce4 panel**

### 2) Install a New Package:

**$ apt-get install package**

### 3) To remove Package without removing Configuration:

**$ apt-get remove package**
**Only package will be removed but not configuration**

### 4) To remove Package and its Configuration:

**$ apt-get purge package**
**both package and its configuration will be removed.**

### 5) To get Information about a Package:

**$ apt-cache show package**
**Display information about the package**

### 6) dpkg Command:

**$ dpkg -l**
**List all installed packages**

# Topic: Memory related Commands

## 1) df Command:

df means disk fragmentation.
It displays file system disk space usage.It provides information about the space available on all currently mounted file systems.

**$ df**

```
Filesystem 1K-blocks Used Available Use% Mounted on
udev 1404040 0 1404040 0% /dev
tmpfs 285584 1584 284000 1% /run
/dev/sda1 10253588 5512804 4200216 57% /
tmpfs 1427912 0 1427912 0% /dev/shm
tmpfs 5120 4 5116 1% /run/lock
tmpfs 1427912 0 1427912 0% /sys/fs/cgroup
```

We can use multiple options with df command.
**-h → Human Readable Format**
**-m → In Mega Bytes**
**-k → In Kilo Bytes (It is Default)**

## 2) du Command:

du - estimate file space usage
It displays directory wise disk usage in the form of blocks. Each block is 1024 bytes.

```
$ du
```

```
4 ./dir10
4 ./Downloads/java/corejava
8 ./Downloads/java
12 ./Downloads
```

We can use multiple options with du command.

**-h → Human Readable Format**

**-m → In Mega Bytes**

**-k → In Kilo Bytes (It is Default)**

# 3) free Command:

It displays amount of free and used memory in the system.

```
$ free
```

```
total used free shared buff/cache available
Mem: 2855828 1205468 646652 51552 1003708 1434376
Swap: 483800 0 483800
```

**We can use multiple options with free command.**

**-h → Human Readable Format**

**-m → In Mega Bytes**

**-k → In Kilo Bytes (It is Default)**

**Note: We can use -l and -t options also.**

**-l, --lohi**

**Show detailed low and high memory statistics.**

**-t, --total**

**Display a line showing the column totals**