Lab Activity - 3

-Networking & System Administration Lab

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Basic Linux Commands

1. usermod : The **usermod** command modifies the system account files to reflect the changes that are specified on the command line.


```
kunjuzz@kunjuzz-VirtualBox:~$ sudo usermod --help
[sudo] password for kunjuzz:
Usage: usermod [options] LOGIN

Options:
  -b, --badnames                allow bad names
  -c, --comment COMMENT         new value of the GECOS field
  -d, --home HOME_DIR           new home directory for the user account
  -e, --expiredate EXPIRE_DATE  set account expiration date to EXPIRE_DATE
  -f, --inactive INACTIVE       set password inactive after expiration
                                to INACTIVE
  -g, --gid GROUP               force use GROUP as new primary group
  -G, --groups GROUPS           new list of supplementary GROUPS
  -a, --append                  append the user to the supplemental GROUPS
                                mentioned by the -G option without removing
                                the user from other groups
  -h, --help                    display this help message and exit
  -l, --login NEW_LOGIN         new value of the login name
  -L, --lock                    lock the user account
  -m, --move-home               move contents of the home directory to the
                                new location (use only with -d)
  -o, --non-unique              allow using duplicate (non-unique) UID
  -p, --password PASSWORD       use encrypted password for the new password
  -R, --root CHROOT_DIR         directory to chroot into
  -P, --prefix PREFIX_DIR       prefix directory where are located the /etc/* f
iles
  -s, --shell SHELL             new login shell for the user account
  -u, --uid UID                 new UID for the user account
  -U, --unlock                  unlock the user account
```

```
kunjuzz@kunjuzz-VirtualBox:~$ sudo usermod -G mca anjali
kunjuzz@kunjuzz-VirtualBox:~$ groups anjali
anjali : anjali mca
```

2. groupadd : The groupadd command creates or add a group in our system.

```
kunjuzz@kunjuzz-VirtualBox:~$ sudo groupadd mca
kunjuzz@kunjuzz-VirtualBox:~$ groups
kunjuzz adm cdrom sudo dip plugdev lpadmin lxd sambashare
```

```
kunjuzz@kunjuzz-VirtualBox:~$ sudo groupadd lion
[sudo] password for kunjuzz:
kunjuzz@kunjuzz-VirtualBox:~$ sudo groupadd tiger
kunjuzz@kunjuzz-VirtualBox:~$ sudo groupadd monkey
```

3. groups : The group command tells about the group where current user belongs to.

```
kunjuzz@kunjuzz-VirtualBox:~$ sudo groupadd mca
kunjuzz@kunjuzz-VirtualBox:~$ groups
kunjuzz adm cdrom sudo dip plugdev lpadmin lxd sambashare
kunjuzz@kunjuzz-VirtualBox:~$ groups anjali
anjali : anjali
```

4. groupdel : The command groupdel will delete a group permanently from
the system.

```
kunjuzz@kunjuzz-VirtualBox:~$ sudo usermod -G lion,tiger,monkey anjali
kunjuzz@kunjuzz-VirtualBox:~$ groups anjali
anjali : anjali lion tiger monkey
kunjuzz@kunjuzz-VirtualBox:~$ sudo groupdel monkey
kunjuzz@kunjuzz-VirtualBox:~$ groups anjali
anjali : anjali lion tiger
```

5. groupmod : With the help of groupmod command you can change the
name of an already existing group.

```
kunjuzz@kunjuzz-VirtualBox:~$ groups anjali
anjali : anjali lion tiger
kunjuzz@kunjuzz-VirtualBox:~$ sudo groupmod -n giraffe tiger
kunjuzz@kunjuzz-VirtualBox:~$ groups anjali
anjali : anjali lion giraffe
```

6. chmod : used to change the access permissions of files and directories. It
stands for **change mode**.

```
kunjuzz@kunjuzz-VirtualBox:~$ mkdir student
kunjuzz@kunjuzz-VirtualBox:~$ ls -ld student
drwxrwxr-x 2 kunjuzz kunjuzz 4096 Aug 11 20:37 student
kunjuzz@kunjuzz-VirtualBox:~$ chmod g-w student
kunjuzz@kunjuzz-VirtualBox:~$ ls -ld student
drwxr-xr-x 2 kunjuzz kunjuzz 4096 Aug 11 20:37 student
kunjuzz@kunjuzz-VirtualBox:~$ chmod g+w student
kunjuzz@kunjuzz-VirtualBox:~$ ls -ld student
drwxrwxr-x 2 kunjuzz kunjuzz 4096 Aug 11 20:37 student
kunjuzz@kunjuzz-VirtualBox:~$
```

7. chown : used to change a file's ownership, directory, or symbolic link for
a user or group. The chown stands for change owner.

```
kunjuzz@kunjuzz-VirtualBox:~$ ls -ld student
drwxrwxr-x 2 kunjuzz kunjuzz 4096 Aug 11 20:37 student
kunjuzz@kunjuzz-VirtualBox:~$ sudo chown anjali student
kunjuzz@kunjuzz-VirtualBox:~$ ls -ld student
drwxrwxr-x 2 anjali kunjuzz 4096 Aug 11 20:37 student
kunjuzz@kunjuzz-VirtualBox:~$
```

8. id : used to print the genuine and effective user ID and group ID. A user ID (UID) is a particular user identity, whereas group IDs (GIDs) can contain more than one user's identity. This command is a useful tool for user management.

```
kunjuzz@kunjuzz-VirtualBox:~$ id anjali
uid=2000(anjali) gid=1001(anjali) groups=1001(anjali)
```

9. ps : used to view currently running processes on the system. It helps us to determine which process is doing what in our system, how much memory it is using, how much CPU space it occupies, user ID, command name, etc.

```
kunjuzz@kunjuzz-VirtualBox:~$ ps
    PID TTY          TIME CMD
   2555 pts/0    00:00:00 bash
   2913 pts/0    00:00:00 ps
kunjuzz@kunjuzz-VirtualBox:~$ ps -a
    PID TTY          TIME CMD
   1590 tty2     00:00:00 gnome-session-b
   2914 pts/0    00:00:00 ps
kunjuzz@kunjuzz-VirtualBox:~$
```

10.   top : displays all the running process within the environment of your system. It helps in monitoring system usage and performances. It is mainly used to detect load on the server by system administrators.

```
top - 20:44:43 up  1:20,  1 user,  load average: 0.14, 0.05, 0.01
Tasks: 178 total,   1 running, 177 sleeping,   0 stopped,   0 zombie
%Cpu(s):  1.7 us,  0.0 sy,  0.0 ni, 94.5 id,  3.8 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :    972.2 total,    107.0 free,    598.4 used,    266.8 buff/cache
MiB Swap:    448.4 total,    279.1 free,    169.4 used.    226.5 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
   1730 kunjuzz   20   0 3740436 260060  75264 S   1.3  26.1   2:12.61 gnome-+
   2472 kunjuzz   20   0  411292  49424  37536 S   0.3   5.0   0:06.56 gnome-+
   2899 root      20   0       0      0      0 I   0.3   0.0   0:00.03 kworke+
   2915 kunjuzz   20   0   21440   3872   3340 R   0.3   0.4   0:00.05 top
      1 root      20   0  165724  10420   6424 S   0.0   1.0   0:05.21 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kthrea+
      3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
      4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_pa+
      6 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworke+
      9 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 mm_per+
     10 root      20   0       0      0      0 S   0.0   0.0   0:00.00 rcu_ta+
     11 root      20   0       0      0      0 S   0.0   0.0   0:00.00 rcu_ta+
     12 root      20   0       0      0      0 S   0.0   0.0   0:00.63 ksofti+
     13 root      20   0       0      0      0 I   0.0   0.0   0:01.36 rcu_sc+
     14 root      rt   0       0      0      0 S   0.0   0.0   0:00.08 migrat+
     15 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_i+
     16 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
     17 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kdevtm+
     18 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 netns
     19 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 inet_f+
     20 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kauditd
     21 root      20   0       0      0      0 S   0.0   0.0   0:00.00 khungt+
```