

**20MCA136-NETWORKING &
ADMINISTRATION LAB**

EXPERIMENT

Ubuntu Basic Commands-3

SUBMITTED BY,

VIVIN V. ABRAHAM

R MCA-2020-S2

ROLL NO : 42

SUBMITTED TO,

MEERA MISS

1. usermod

- Helps to modify user account
- Changing the userid

```
vivin@vivin-VirtualBox:~/Desktop$ sudo useradd anna
vivin@vivin-VirtualBox:~/Desktop$ id anna
uid=1501(anna) gid=1501(anna) groups=1501(anna)
vivin@vivin-VirtualBox:~/Desktop$ sudo usermod -u 2000 anna
vivin@vivin-VirtualBox:~/Desktop$ id anna
uid=2000(anna) gid=1501(anna) groups=1501(anna)
vivin@vivin-VirtualBox:~/Desktop$
```

- Add new secondary group to existing user

```
root:x:1502:
vivin@vivin-VirtualBox:~/Desktop$ groups annu
annu : annu
vivin@vivin-VirtualBox:~/Desktop$ sudo usermod -G kerala annu
vivin@vivin-VirtualBox:~/Desktop$ groups annu
annu : annu kerala
```

- Change the primary group of the user

```
vivin@vivin-VirtualBox:~/Desktop$ sudo usermod -g kerala annu
vivin@vivin-VirtualBox:~/Desktop$ groups annu
annu : kerala
vivin@vivin-VirtualBox:~/Desktop$ sudo usermod -G annu annu
vivin@vivin-VirtualBox:~/Desktop$ groups annu
annu : kerala annu
vivin@vivin-VirtualBox:~/Desktop$ sudo usermod -g anna annu
vivin@vivin-VirtualBox:~/Desktop$ groups annu
annu : anna annu
```

- Add multiple secondary group at a time

```
usermod: group 'cars' does not exist
vivin@vivin-VirtualBox:~/Desktop$ sudo usermod -G bikes,bus,xuvs annu
vivin@vivin-VirtualBox:~/Desktop$ groups annu
annu : anna bus bikes xuvs
```

2. groupadd

- Used to create a new group

```
vivin@vivin-VirtualBox:~/Desktop$ sudo groupadd bus
vivin@vivin-VirtualBox:~/Desktop$ sudo groupadd bikes
vivin@vivin-VirtualBox:~/Desktop$ sudo groupadd xuvs
```

- To display the groups

```
vivin@vivin-VirtualBox:~/Desktop$ cat /etc/group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,vivin
tty:x:5:syslog
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
uucp:x:10:
man:x:12:
proxy:x:13:
kmem:x:15:
dialout:x:20:
fax:x:21:
voice:x:22:
```

```
gdm:x:130:
lxd:x:131:vivin
vivin:x:1000:
sambashare:x:132:vivin
systemd-coredump:x:999:
anu:x:1001:anu
anna:x:1501:
kerala:x:1502:
car:x:1503:
bus:x:1504:
bikes:x:1505:
xuvs:x:1506:
```

(The lastly created group comes at every last only)

3. groups

- To print the groups the user is in

```
vivin@vivin-VirtualBox:~/Desktop$ groups anu
anu : anu
```

(The group which near to the user is primary group here it is anu)

```
usermod: group cars does not exist
vivin@vivin-VirtualBox:~/Desktop$ sudo usermod -G bikes,bus,xuvs anu
vivin@vivin-VirtualBox:~/Desktop$ groups anu
anu : anna bus bikes xuvs
```

(The groups that other than the primary are secondary group)

4. groupdel

-To delete a group, we can delete only secondary groups of a user only

```
[sudo] password for vivin:
vivin@vivin-VirtualBox:~/Desktop$ groups anu
anu : anna xuvs
vivin@vivin-VirtualBox:~/Desktop$ sudo groupdel xuvs
vivin@vivin-VirtualBox:~/Desktop$ groups anu
anu : anna
```

-After deleting the group entire group is deleted from the system

```
vivin@vivin-VirtualBox:~/Desktop$ cat /etc/group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,vivin
tty:x:5:syslog
dialout:x:6:
lp:x:7:
mail:x:8:
news:x:9:
uucp:x:10:
man:x:12:
proxy:x:13:
kmem:x:15:
dialout:x:20:
fax:x:21:
voice:x:22:
cdrom:x:24:vivin
floppy:x:25:
tape:x:26:
sudo:x:27:vivin
audio:x:29:pulse
```

```

nm-openvpn:x:124:
whoopsie:x:125:
colord:x:126:
geoclue:x:127:
pulse:x:128:
pulse-access:x:129:
gdm:x:130:
lxd:x:131:vivin
vivin:x:1000:
s_hare:x:132:vivin
systemd-coredump:x:999:
anu:x:1001:
anna:x:1501:
kerala:x:1502:anu
car:x:1503:anu
Lorries:x:1504:
vivin@vivin-VirtualBox:~/Desktop$

```

5. groupmod

- Used to modify a group definition on the system. That is, new group created and also it become secondary or primary group to the existing user

```

systemd-coredump:x:999:
anu:x:1001:
car:x:1503:anu
Lorries:x:1504:
ascii:x:1502:anu
jeep:x:1501:
vivin@vivin-VirtualBox:~/Desktop$ groups anu
anu : jeep car ascii
vivin@vivin-VirtualBox:~/Desktop$ sudo groupmod -n trees jeep
vivin@vivin-VirtualBox:~/Desktop$ groups anu
anu : trees car ascii
vivin@vivin-VirtualBox:~/Desktop$ sudo groupmod -n plants car
vivin@vivin-VirtualBox:~/Desktop$ groups anu
anu : trees ascii plants
vivin@vivin-VirtualBox:~/Desktop$ cat /etc/group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,vivin
tty:x:5:syslog
disk:x:6:
lp:x:7:
mail:x:8:
n Terminal
uuu:x:10:
man:x:12:
proxy:x:13:

```

-new group created

```
bluetooth:x:112:
ssl-cert:x:113:
uidd:x:114:
tcpdump:x:115:
avahi-autoipd:x:116:
rtkit:x:117:
ssh:x:118:
netdev:x:119:
lpadmin:x:120:vivin
avahi:x:121:
scanner:x:122:saned
saned:x:123:
nm-openvpn:x:124:
whoopsie:x:125:
colord:x:126:
g Ubuntu Software
pulse:x:128:
pulse-access:x:129:
gdm:x:130:
lxd:x:131:vivin
vivin:x:1000:
smbshare:x:132:vivin
systemd-coredump:x:999:
anu:x:1001:
Lorries:x:1504:
ascii:x:1502:anu
trees:x:1501:
plants:x:1503:anu
```

6. chmod

-Used to change the permission of the file/directory
(to see the directory details use **ls -ld directory_name** command used)

```
vivin@vivin-VirtualBox:~/Desktop$ mkdir Buses
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwxrwxr-x 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$
```

drwxrwxr-x 2 vivin vivin 4096 Aug 10 23:26 Buses

where,

d- directory

rw- permission of user

wx- permission of group

r-x- permission of others

where

r-read permission

w-write permission

x-executable permission

vivin-user name

vivin- file created from the account of vivin

4096- id

Aug 10 23:26 – date and time

Buses – file name

-Removing the write permission of group

```
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwxrwxr-x 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$ chmod g-w Buses
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwxr-xr-x 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$
```

-Giving write permission to the others

```
drwxr-xr-x 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$ chmod o+w Buses
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwxr-xrwx 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$
```

-Removing and giving the multiple permission

```
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwxr-xrwx 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$ chmod o-r-w-x Buses
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwxr-x--- 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$ chmod o+r+w+x Buses
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
d Terminal x 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$ chmod u+r+w+x Buses
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwxr-xrwx 2 vivin vivin 4096 Aug 10 23:26 Buses
```

-Assigning permission, only the current given permission only updated at a time

```
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
d--rwxrwx 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$ chmod u+=rwx Buses
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwxrwxrwx 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$ chmod u-=rwx Buses
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwxrwxrwx 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$ chmod g-r-w Buses
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwx--xrw 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$ chmod g=w Buses
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwx-w-rwx 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$ chmod g=x Buses
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwx--xrw 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$ chmod g=rw Buses
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwxrw-rwx 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$ chmod g=rwx Buses
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Buses
drwxrwxrwx 2 vivin vivin 4096 Aug 10 23:26 Buses
vivin@vivin-VirtualBox:~/Desktop$
```

7. chown

-It is used to change the user and group ownership of the given file directory

```
drwxrwxr-x 5 anna vivin 4096 Jun 13 20:34 Amal
vivin@vivin-VirtualBox:~/Desktop$ ls
Amal  buses  friends.txt  'hello world welcome'  Mca2
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Amal
drwxrwxr-x 5 anna vivin 4096 Jun 13 20:34 Amal
vivin@vivin-VirtualBox:~/Desktop$ sudo chown anu Amal
vivin@vivin-VirtualBox:~/Desktop$ ls -ld Amal
drwxrwxr-x 5 anu vivin 4096 Jun 13 20:34 Amal
vivin@vivin-VirtualBox:~/Desktop$ man chown
vivin@vivin-VirtualBox:~/Desktop$
```

8. id

-It is used to print real and effective user and group IDs

```
vivin@vivin-VirtualBox:~/Desktop$ man id
vivin@vivin-VirtualBox:~/Desktop$ id anu
uid=1500(anu) gid=1501(trees) groups=1501(trees),1502(anscii),1503(plants)
vivin@vivin-VirtualBox:~/Desktop$
```

9. ps

- It is used to report a snapshot of the current process

```
vivin@vivin-VirtualBox:~/Desktop$ man ps
vivin@vivin-VirtualBox:~/Desktop$ ps
  PID TTY          TIME CMD
 1779 pts/0    00:00:00 bash
 1937 pts/0    00:00:00 ps
```

Where,

PID- This is the unique process ID

TTY- This is the type of terminal that the user is logged in to

TIME-This is the time in minutes that the process has been running

CMD-The command that launched the process

-To select all process except both session leaders and processes not associated with terminal

```
vivin@vivin-VirtualBox:~/Desktop$ ps -a
  PID TTY          TIME CMD
  763 tty2      00:00:08 Xorg
  864 tty2      00:00:00 gnome-session-b
 1939 pts/0    00:00:00 ps
vivin@vivin-VirtualBox:~/Desktop$ man ps
```

-To get security info

```
761      864      761      761 tty2      761 St+   1000    0:00 /usr/libexec
1771     1779     1779     1779 pts/0      7400 Ss    1000    0:00 bash GJS_DEB
1779     7400     7400     1779 pts/0      7400 R+    1000    0:00 ps -ejh SHEL
vivin@vivin-VirtualBox:~/Desktop$ man ps
vivin@vivin-VirtualBox:~/Desktop$ ps -eM
LABEL                                PID TTY          TIME CMD
unconfined                          1 ?           00:00:08 systemd
unconfined                          2 ?           00:00:00 kthreadd
unconfined                          3 ?           00:00:00 rcu_gp
unconfined                          4 ?           00:00:00 rcu_par_gp
unconfined                          6 ?           00:00:00 kworker/0:0H-kblockd
unconfined                          9 ?           00:00:00 mm_percpu_wq
unconfined                         10 ?           00:00:01 ksoftirqd/0
unconfined                         11 ?           00:00:05 rcu_sched
unconfined                         12 ?           00:00:00 migration/0
unconfined                         13 ?           00:00:00 idle_inject/0
unconfined                         14 ?           00:00:00 cpuhp/0
unconfined                         15 ?           00:00:00 kdevtmpfs
unconfined                         16 ?           00:00:00 netns
unconfined                         17 ?           00:00:00 rcu_tasks_kthre
unconfined                         18 ?           00:00:00 rcu_tasks_rude_
unconfined                         19 ?           00:00:00 rcu_tasks_trace
unconfined                         20 ?           00:00:00 kauditd
unconfined                         21 ?           00:00:00 khungtaskd
unconfined                         22 ?           00:00:00 oom_reaper
unconfined                         23 ?           00:00:00 writeback
unconfined                         24 ?           00:00:00 kcompactd0
unconfined                         25 ?           00:00:00 ksmd
unconfined                         26 ?           00:00:00 khugepaged
```

-To get info about threads

```
vivin@vivin-VirtualBox:~/Desktop$ ps axms
UID      PID    PENDING   BLOCKED   IGNORED   CAUGHT  STAT  TTY          TIME  COMM
AND
0         1    00000000    -         -         -      -      ?           0:08  /lib
0         -    00000000 <28014a03 00001000 <800004ec Ss      -      ?           0:08  -
0         2    00000000    -         -         -      -      ?           0:00  [kth
0         -    00000000 00000000 <ffffffff 00000000 S        -      ?           0:00  -
0         3    00000000    -         -         -      -      ?           0:00  [rcu
0         -    00000000 00000000 <ffffffff 00000000 I<       -      ?           0:00  -
0         4    00000000    -         -         -      -      ?           0:00  [rcu
0         -    00000000 00000000 <ffffffff 00000000 I<       -      ?           0:00  -
0         6    00000000    -         -         -      -      ?           0:00  [kwo
0         -    00000000 00000000 <ffffffff 00000000 I<       -      ?           0:00  -
0         9    00000000    -         -         -      -      ?           0:00  [mm_
0         -    00000000 00000000 <ffffffff 00000000 I<       -      ?           0:00  -
0        10    00000000    -         -         -      -      ?           0:01  [kso
0         -    00000000 00000000 <ffffffff 00000000 S        -      ?           0:01  -
0        11    00000000    -         -         -      -      ?           0:05  [rcu
0         -    00000000 00000000 <ffffffff 00000000 I        -      ?           0:05  -
0        12    00000000    -         -         -      -      ?           0:00  [mig
0         -    00000000 00000000 <ffffffff 00000000 S        -      ?           0:00  -
0        13    00000000    -         -         -      -      ?           0:00  [idl
0         -    00000000 00000000 <ffffffff 00000000 S        -      ?           0:00  -
0        14    00000000    -         -         -      -      ?           0:00  [cpu
0         -    00000000 00000000 <ffffffff 00000000 S        -      ?           0:00  -
```


-To print a process tree

```
vivin@vivin-VirtualBox:~/Desktop$ ps -ejh
 670      761      761      761 tty2          761 Ssl+   1000    0:00 /usr/lib/gdm
 761      763      761      761 tty2          761 Sl+    1000    0:08 /usr/lib/xor
 761      864      761      761 tty2          761 Sl+    1000    0:00 /usr/libexec
1771     1779     1779     1779 pts/0        7400 Ss     1000    0:00 bash GJS_DEB
1779     7400     7400     1779 pts/0        7400 R+    1000    0:00 ps -ejh SHEL
```

10. top

- Used to display Linux process

```
vivin@vivin-VirtualBox:~/Desktop$ top

top - 16:15:15 up 8:37, 1 user, load average: 0.00, 0.02, 0.00
Tasks: 172 total, 1 running, 171 sleeping, 0 stopped, 0 zombie
%Cpu(s): 2.0 us, 0.3 sy, 0.0 ni, 97.6 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 980.8 total, 106.0 free, 379.3 used, 495.4 buff/cache
MiB Swap: 448.5 total, 174.9 free, 273.6 used. 447.9 avail Mem

  PID USER      PR  NI   VIRT   RES   SHR  S  %CPU  %MEM    TIME+  COMMAND
 1033 vivin     20   0 3710196 178024 43876 S   2.0   17.7   1:43.12 gnome-+
 1771 vivin     20   0 826600 28068 15036 S   0.3    2.8   0:09.52 gnome-+
29673 root       20   0      0      0      0 I   0.3    0.0   0:00.59 kworke+
    1 root       20   0 169104  9284  5428 S   0.0    0.9   0:08.64 systemd
    2 root       20   0      0      0      0 S   0.0    0.0   0:00.01 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   0:01.52 ksofti+
   11 root       20   0      0      0      0 I   0.0    0.0   0:06.43 rcu_sc+
   12 root       rt    0      0      0      0 S   0.0    0.0   0:00.52 migrat+
   13 root      -51   0      0      0      0 S   0.0    0.0   0:00.00 idle_i+
   14 root       20   0      0      0      0 S   0.0    0.0   0:00.00 cpuhp/0
   15 root       20   0      0      0      0 S   0.0    0.0   0:00.00 kdevtm+
   16 root        0 -20      0      0      0 I   0.0    0.0   0:00.00 netns
   17 root       20   0      0      0      0 S   0.0    0.0   0:00.00 rcu_ta+
   18 root       20   0      0      0      0 S   0.0    0.0   0:00.00 rcu_ta+
   19 root       20   0      0      0      0 S   0.0    0.0   0:00.00 rcu_ta+
```

-To display the process of particular user

```
vivin@vivin-VirtualBox:~/Desktop$ top -u anu

top - 16:11:35 up 8:33, 1 user, load average: 0.03, 0.05, 0.01
Tasks: 171 total, 1 running, 170 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.0 us, 0.3 sy, 0.0 ni, 99.7 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 980.8 total, 106.0 free, 379.4 used, 495.4 buff/cache
MiB Swap: 448.5 total, 174.9 free, 273.6 used. 447.8 avail Mem

  PID USER      PR  NI   VIRT   RES   SHR  S  %CPU  %MEM    TIME+  COMMAND
 12700 anu        0   0      0      0      0 S   0.0    0.0   0:00.00 sleep
```

-To display the process of root user (vivin)

```
vivin@vivin-VirtualBox:~/Desktop$ top -u vivin
```

```
top - 16:12:47 up 8:34, 1 user, load average: 0.01, 0.04, 0.00
Tasks: 171 total, 1 running, 170 sleeping, 0 stopped, 0 zombie
%Cpu(s): 1.4 us, 0.0 sy, 0.0 ni, 98.6 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 980.8 total, 106.0 free, 379.4 used, 495.4 buff/cache
MiB Swap: 448.5 total, 174.9 free, 273.6 used. 447.8 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1033	vivin	20	0	3710196	177984	43876	S	1.3	17.7	1:42.60	gnome-+
763	vivin	20	0	526556	17468	9556	S	0.3	1.7	0:20.03	Xorg
1771	vivin	20	0	826600	28068	15036	S	0.3	2.8	0:09.36	gnome-+
686	vivin	20	0	20152	6608	4324	S	0.0	0.7	0:02.83	systemd
688	vivin	20	0	103608	8	0	S	0.0	0.0	0:00.00	(sd-pa+
750	vivin	9	-11	1416888	9140	7028	S	0.0	0.9	0:02.24	pulsea+
755	vivin	39	19	593628	6952	4424	S	0.0	0.7	0:00.89	tracke+
757	vivin	20	0	248800	3416	2924	S	0.0	0.3	0:00.15	gnome-+
761	vivin	20	0	172652	3228	2940	S	0.0	0.3	0:00.05	gdm-x-+
766	vivin	20	0	11224	7152	2800	S	0.0	0.7	0:01.61	dbus-d+
779	vivin	20	0	248336	3180	2704	S	0.0	0.3	0:00.21	gvfsd
794	vivin	20	0	378344	2708	2644	S	0.0	0.3	0:00.03	gvfsd-+
801	vivin	20	0	322564	3144	2528	S	0.0	0.3	0:00.30	gvfs-u+
819	vivin	20	0	244332	3012	2688	S	0.0	0.3	0:00.07	gvfs-m+
823	vivin	20	0	244508	2752	2524	S	0.0	0.3	0:00.08	gvfs-g+
832	vivin	20	0	553844	4020	3640	S	0.0	0.4	0:00.54	goa-da+
855	vivin	20	0	323388	3384	3040	S	0.0	0.3	0:00.32	goa-id+
863	vivin	20	0	246608	3132	2864	S	0.0	0.3	0:00.08	gvfs-g+
864	vivin	20	0	196920	3516	3516	S	0.0	0.4	0:00.19	gnome-+