BASIC COMMANDS


```
#### TO CHECK THE PRESENT WORKING LOCATION ####
# pwd

#### TO CHECK THE CONTENTS OF DIRECTORY ####
# ls

#### TO CHECK THE PROPERTIES OF FILES & DIRECTORIES ####
# ll

#### TO CHECK THE HIDDEN FILES & DIRECTORIES ####
# ls -a

#### TO CHECK THE INODE NUMBER OF FILES & DIRECTORIES ####
# ls -i

#### TO CREATE A FILE WITH DATA ####
# cat > (filename)
# cat > linux
  This is linux
  Press ctrl+D to save & quit the file
# cat linux (to read the file)

#### TO APPEND THE DATA WITHOUT OVERWRITING ####
# cat >> linux
  Added data by root
  Press ctrl+D to save & quit the file
# cat linux (read the file)

#### TO CREATE MULTIPLE FILES WITHOUT DATA ####
# touch unix solaris redhat
# ls (to check)

#### TO CREATE A DIRECTORY ####
# mkdir <dir_name>
# mkdir zoom
# ls (to check)
# cd zoom (to enter into dir)
# cd (to come out)

#### TO CREATE A MULTIPLE DIRECTORIES ####
# mkdir zoom1 zoom2 zoom3 zoom4
# ls (to check)
```

```
#### TO CREATE A PARENT DIRECTORY ####
# mkdir -p world/asia/india/ap/hyd/dsnr/zoom
# ls -R world (to check)

#### NAVIGATION OF DIRECTORIES ####
# cd world/asia/india/ap/hyd/dsnr/zoom
# pwd (to check)
# cd ..  (to come 1 step back)
# cd ../.. (to come 2 step back)
# cd ../../.. (to come 3 step back)
# cd - (to go at last working directory)
# cd   (to go at user home directory)
# pwd (to check)

#### TO CHECK AND CHANGE THE DATE & TIME ####
# date (to check)
# date -s "wed Mar 19 12:00:00 IST 2014"

#### TO CHECK THE CALENDER ####
# cal (for current month & year)
# cal 2014 (for year)
# cal 5 2014 (for particular month & year)

#### TO OPEN THE CALCULATOR ####
# bc
  1+2+3
  7
  Type 'q' to come out

#### TO GET THE HELP RELATED TO ANY COMMAND ####
# man <command name>
# man cat (for example)
Type 'q' to come out

#### TO SHUTDOWN THE SYSTEM ####
# init 0

#### TO RESTART THE SYSTEM ####
# init 6

#### TO SEARCH FILES OR DIRECTORIES ####
# find / -iname <filename or dirname>
```

```
#### TO ACCESS ANY LOCATION IN GUI ####
# nautilus <Path>
# nautilus /etc (for example)

#### TO COPY A EXISTING FILE WITH NEW NAME ####
# cp <source_file> <new_name>
# cp linux unix
# ls (to check)
# cat unix (to read)

#### TO COPY FILE INTO DIFFERENT LOCATION ####
# cp (filename) (destination)
# cp linux /opt
# ls /opt (to check)

#### TO COPY MULTIPLE FILES ####
# cp unix redhat solaris /opt
# ls /opt (to check)

#### TO COPY DATA FROM SOURCE FILE TO DESTINATION WITHOUT
OVERWRITING ####
# cat (source_file) >> (destination_file)
# cat linux >> redhat
# cat redhat (to check)

#### TO COPY A DIRECTORY ####
# cp -rv (source_dir) (destination)
# cp -rv zoom /opt
# ls /opt (to check)

#### TO COPY MULTIPLE DIRECTORIES ####
# cp -rv zoom1 zoom2 zoom3 /opt
# ls /opt (to check)

#### TO COPY COMPLETE DATA FROM PRESENT WORKING LOCATION ####
# cp -rv * /media
# ls /media (to check)

#### TO CUT & PASTE FILE OR DIRECTORIES ####
# mv (source_dir or file) (destination)
# mv zoom /mnt
# ls (to check)
# ls /mnt (to check)
```

```
#### TO RENAME A FILE OR DIRECTORY ####
# mv (existing_name) (new_name)
# mv zoom1 zoomgroup
# ls (to check)

#### TO REMOVE A FILE OR DIRECTORY ####
# rm (filename)
# rm -rf (directory_name)

#### TO OPEN THE TASK MANAGER ####
# ps -aux

#### TO KILL THE PROCESS OF RUNNING APPLICATION ####
# kill -9 (process_id)
# kill -9 2354 (for example)

#### TO CHECK THE CONFIGURATION OF CPU ####
# cat /proc/cpuinfo

#### TO CHECK THE RUNNING PROCESS OF CPU ####
# top

#### TO CHECK THE OS VERSION ####
# cat /etc/redhat-release

#### TO CHECK THE LAST LOGIN TIME ####
# last
```

(1)USER ADMINISTRATION PRACTICAL STEPS


```
'#### TO CREATE A USER ####'
 # useradd <username>
 # useradd tom

'#### TO CHECK THE USER DETAILS ####'
 # cat /etc/passwd       (for complete details)
 # tail /etc/passwd      (for last 10 users details)
 # tail -3 /etc/passwd   (for last 3 users details)
 # head /etc/passwd      (for top 10 users details)
 # head -3 /etc/passwd   (for top 3 users details)
 # grep tom /etc/passwd (for particular user details)

'#### ASSIGNING A PASSWORD TO USER ####'
 # passwd <username>
 # passwd tom
    Password: 1
Re-Password: 1

'#### TO CHECK THE USER PASSWORD DETAILS ####'
 # cat /etc/shadow
 # tail /etc/shadow

'#### TO CHECK THE PASSWORD ENCRYPTION TOOL ####'
 # passwd -S <username>
 # passwd -S tom

'#### TO CHANGE THE PASSWORD ENCRYPTION TOOL ####'
 # authconfig-tui
   By pressing spacebar key uncheck the option USE MD5
   Click on NEXT
 # useradd jack (create a user)
 # passwd jack  (assign the password)
 # passwd -S jack (check the password tool)

'#### TO LOGIN WITH A USER ####'
 # su - tom  (In root Console)
 # exit (to logout)

 # gdmflexiserver (to open extra graphical console)
   Select the user and enter the password
   Create Some Data
   Go to root console by pressing ctrl+alt+F1
   And check the user data
```

```
 # ls /home/tom/Desktop
 # who (to get the details of active users)

'#### TO LOCK A USER ####'
 # usermod -L <username>
 # usermod -L tom
 # grep tom /etc/shadow  (to check)
   '!' sign indicates that a user is lock
 # gdmflexiserver
   Try to login with user tom

'#### TO UNLOCK A USER ####'
 # usermod -U <username>
 # usermod -U tom
 # grep tom /etc/shadow  (to check)
 # gdmflexiserver
   Try to login with user tom

'#### TO CHECK THE MAIL ACCOUNT OF USERS ####'
 # cd /var/spool/mail
 # ls (to check)

'#### TO CHECK THE GROUP OF THE USER ####'
 # tail /etc/group

'#### TO CHECK THE AVAILABLE SHELLS ####'
 # cat /etc/shells
```

(2)USER MODIFCATION PRACTICAL STEPS

'### TO ASSIGN THE COMMENT ###'
useradd tom (create one user)
tail /etc/passwd (to check)
usermod -c <comment> <username>
usermod -c "Sales Dept" tom
grep tom /etc/passwd (to check)

'### TO CHANGE THE UID ###'
useradd jack (create one more user)
tail -2 /etc/passwd (to check)
To Provide User:jack Previlages to User:tom
usermod -u <ID> -o <username>
usermod -u 501 -o tom
tail -2 /etc/passwd (to check)
Login with both the user's to check the result

'### TO CHANGE THE GID ###'
groupmod -g <ID> <username>
groupmod -g 600 tom
grep tom /etc/passwd (to check)
Changing the GID means,taking the Group Previlages

'### TO CHANGE THE SHELL ###'
cat /etc/shells (to check availabel shells)
usermod -s <shell> <username>
usermod -s /sbin/nologin tom (to block account)
grep tom /etc/passwd (to check)
su - tom (try to access tom account)

'### TO LOCK THE USER ACCOUNT ###'
usermod -L <username>
usermod -L jack (to lock)
grep jack /etc/shadow (to check)
'!'sign indicates that the user account is lock
gdmflexiserver (open one gui console)
Select the User:jack & try to login
usermod -U tom (to unlock)
grep jack /etc/shadow (to check)
gdmflexiserver (open one gui console)
Select the User:jack & try to login

```
'### TO CHANGE THE USER HOME DIRECTORY ###'
 # vi /etc/default/useradd (open this file)
   Do the Modification in the HOME line,as below
   HOME=/media
   :wq(save & quit the file)
 # useradd jerry (create one user)
 # tail /etc/passwd (to check)

'### TO CHANGE THE USERNAME ###'
 # usermod -l <newname> <oldname>
 # usermod -l tom123 tom
 # tail /etc/passwd (to check)

'### TO REMOVE A USER ###'
 # userdel jack (to remove a user without its home directory &
mail account)
 # tail /etc/passwd (to check)
 # ls /home (to check home dir)
 # ls /var/spool/mail (to check mail accout)
 # userdel -r tom123 (to remove a user with its home directory &
mail account)
 # tail /etc/passwd (to check)
 # ls /home (to check)
 # ls /var/spool/mail (to check)
```

(3)GROUP ADMINISTRATION PRACTICAL STEPS

Create 5 Users

'#### TO CREATE A GROUP ####'

```
 # groupadd <group_name>
 # groupadd zoom
 # tail /etc/group (to check)
```

'### TO ADD A SINGLE USER INTO GROUP ###'

```
 # gpasswd -a <username> <groupname>
 # gpasswd -a a1 zoom
 # grep zoom /etc/group (to check)
```

'### TO ADD MULTIPLE USERS INTO GROUP ###'

```
 # gpasswd -M a2,a3,a4 zoom
 # grep zoom /etc/group (to check)
```

Note:-Adding Multiple Users Into the Group may get overwrite on the existing users.So Without Overwriting to add a user then use the above option(gpasswd -a)

'### TO REMOVE A USER FROM GROUP ###'

```
 # gpasswd -d <username> <groupame>
 # gpasswd -d a4 zoom
 # grep zoom /etc/group (to check)
```

'### TO MAKE A USER AS GROUP ADMIN ###'

```
 # gpasswd -A <username> <groupname>
 # gpasswd -A a2 zoom
 # grep zoom /etc/gshadow (to check)
 # su - a2 (to check,login as a user)
 # gpasswd -d a3 zoom (try to remove)
 # gpasswd -a a5 zoom (try to add)
 # grep zoom /etc/group (to check)
 # exit (logout)
 # gpasswd -A "" zoom (to remove the previlages)
 # grep zoom /etc/gshadow (to check)
```

'### TO RENAME A GROUP ###'

```
 # groupmod -n <newname> <oldname>
 # groupmod -n zoomgroup zoom
 # tail /etc/group (to check)
```

'### TO REMOVE A GROUP ###'

```
 # groupdel zoomgroup
 # tail /etc/group (to check)
```

(4)PERMISSIONS PRACTICAL STEPS

BASIC PERMISSION

'### APPLYING A BASIC PERMISSION ON DIRECTORY ###'

```
# useradd tom (create one user)
# su - tom (login as a user)
# cd /root (try to access root dir)
# exit (logout)
# ls -ld /root (check the permission)
```

(1)To Apply Execute Permission on Directory

```
# chmod 751 /root
# ls -ld /root (to check)
# su - tom
# cd /root (try to access)
# ls (to read - ERROR)
# exit (logout)
```

(2)To Apply Read & Execute Permission on Dir

```
# chmod 755 /root
        OR
# chmod u=rwx,g=rx,o=rx /root
# ls -ld /root (to check)
# su - tom
# cd /root
# ls (to read)
# touch tom (to write - ERROR)
# exit (logout)
```

(3)To Apply Read,Write & Execute Permission on Dir

```
# chmod 777 /root
        OR
# chmod u=rwx,g=rwx,o=rwx /root
        OR
# chmod a=rwx /root
# ls -ld /root (to check)
# su - tom
# cd /root
# ls (to read)
# touch tom (to write)
# exit (logout)
```

'#### BASIC PERMISSION ON FILE ####'
cat > linux (create one file in /root dir)
su - tom
cd /root
cat linux (to read)
cat >> linux (to write - ERROR)
exit
ll linux (check the permission)
To Apply Read & Write Permission file
chmod 666 linux
ll linux (to check)
su - tom
cd /root
cat linux (to read)
cat >> linux (to write)
exit

'#### TO CHANGE THE OWNER OF THE FILE ###'
Create 3 more users (for ex:a1,a2,a3)
cat > unix (create one more file in /root)
ll unix (check the permission)
For the User:a1-rw permission on unix file
chown <username> <filename>
chown a1 unix
ll linux (to check)
su - a1 (to check-login as a user)
cd /root
cat unix (to read)
cat >> unix (to write)
exit (logout)

'#### TO CHANGE THE GROUP OWNER OF THE FILE ####'
For the User:a2,a3-zero permission on unix file
groupadd zoom (create one group)
gpasswd -M a2,a3 zoom (add two users in group)
chgrp <groupname> <filename>
chgrp zoom unix (to change group owner)
chmod 604 unix (provide zero permision in group)
ll unix (to check)
To Check the Result Login As a User:a2,a3 and access the unix file in /root directory

ADVANCE PERMISSION

TO APPLY ADVANCE PERMISSION ON DIRECTORY

chmod 1777 /root

'1'for applying advance (sticky bit) permission only on directories to avoid data deleting

ls -ld /root

't'sign is the indication of Advance Permission

su - tom (login as a normal user)

cd /root (access root directory)

rm -rf * (try to remove the data)

exit (logout)

ACL PERMISSION

Create 6 Users (for ex:a1 to a6)

cat > linux (create one file in /root)

ll linux (to check the permission)

'For the User:a1 - Read & Write Permission'

setfacl -m u:a1:rw linux (to assign acl)

ll linux (to check)

'+'sign is the indication of acl permission

su - a1 (to check-login as a user)

cd /root

cat linux (to read)

cat >> linux (to write)

exit (logout)

'For the User:a2 - Read & Execute Permission'

setfacl -m u:a2:rx linux

getfacl linux (to check acl permission in detail)

Login as a User:a2 & Check the Result

'For the User:a3 - Read,Write & Execute Permision'

setfacl -m u:a3:rwx linux

getfacl linux (to check)

Login as a User:a3 & Check the Result

'For the User:a4 - Write Permission'

setfacl -m u:a4:w linux

getfacl linux (to check)

Login as a User:a4 & Check the Result

```
'For the User:a5,a6 - Zero Permission'
# groupadd zoom (create one group)
# gpasswd -M a5,a6 zoom
# setfacl -m g:zoom:0 linux (to assign on group)
# getfacl linux (to check)
Login as a user:a5,a6 & check the result

'To Remove the ACL Permission from single user'
# setfacl -x u:a4 linux (to remove)
# getfacl linux (to check)

'To Remove the ACL Permission Completely from file'
# setfacl --remove-all linux
# getfacl linux (to check)
# ll linux (to check)
```

(5) PARTITIONS PRACTICAL STEPS

'Step 1:-Check the Existing Partitions'
 # fdisk -l (to check)

'Step 2:-To create a New Partition'
 # fdisk /dev/sda
   Press 'm' for help
   Press 'p' to check the exisiting partitions
   Press 'n' to create a new partition
   Enter the Size: +1G (for example)
   Press 'p' to check
   Press 'w' to save & quit

'Step 3:-Activate the New Changes to Kernel'
 # partx -a /dev/sda (run this 2 times)

'Step 4:-Format the Partition'
 # mkfs.ext4 <partition_no>
 # mkfs.ext4 /dev/sda8 (for example)

'Step 5:-To Use the Partition-Create Mount Point'
 # mount <partition_no> <mount_point>
 # mount /dev/sda8 /mnt
 # mount (to check)
 # cd /mnt (to access the partition)
 # ls (to check)
 'lost+found' dir is the indication of partition
 # mkdir zoom{1..100} (create some data)
 # ls (to check)

'#### TO CHECK THE FILESYSTEM OF PARTITIONS ####'
 # blkid

'#### TO CHECK THE FREE SPACE OF THE PARTITION ###'
 # df -h

'#### TO CHECK THE USED SPACE OF THE PARTITION ####'
 # du -sh

'#### TO CHECK THE FREE SPACE OF THE HARDISK ####'
 # parted
   Type: print free
   Type: quit (to come out)

```
'#### TO REMOVE THE MOUNT POINT(LINK) ####'
 # umount <partition_no>
 # umount /dev/sda8 (for example)
 # mount (to check)

'#### TO DO THE PERMANENT MOUNTING ####'
 # vim /etc/fstab (open this file)
   Come at last & do the changes as given below

  /dev/sda11       /mnt          ext4     defaults 0 0
 'partition_no' 'mount_pt' 'filesystem'

  :wq(save & quit the file)
 # init 6 (reboot the pc)
 # mount (to check the permanent mount point)
```

(6)LVM PRACTICAL STEPS


```
##### TO IMPLEMMENT LVM ON PARTITIONS #####
'Step 1:-Create 3 Raw Partitions'
 # fdisk -l (to check)
 # fdisk /dev/sda (to create-see partition notes)
 # partx -a /dev/sda (to update kernel)

'Step 2:-Create Physcial Volume'
 # pvcreate <partition_no's>
 # pvcreate /dev/sda{12..14} (for example)
 # pvdisplay (to check)

'Step 3:-Create Volume Group'
 # vgcreate <vg_name> <partition_no's>
 # vgcreate zoom /dev/sda{12..14}
 # vgdisplay (to check)

'Step 4:-Create Logical Volume'
 # lvcreate -L <size> <vg_name> -n <lv_name>
 # lvcreate -L +500M zoom -n linux
 # lvdisplay (to check)

'Step 5:-Format LV & Mount to Use'
 # mkfs.ext4 /dev/zoom/linux
 # mkdir /lvm (create new dir for mount point)
 # mount /dev/zoom/linux /lvm (to mount)
 # mount (to check)
 # cd /lvm (access mount point to use LV)
 # mkdir zoom{1..100} (create some data)
 # ls (to check)
 # df -h (to check the free space of partition)

'Step 6:-To Resize the Partition'
# cp -rv /usr/*  /lvm (to make partition size full)
# df -h (check the size)
# lvresize -L +500M /dev/zoom/linux (to resize)
# resize2fs /dev/zoom/linux (to resize filesystem)
# df -h (check the extended size)
```

'Step 7:-To Extend the Volume Group Size'
 # vgdisplay (to check vg size)
 # fdisk /dev/sda (create one partition)
 # partx -a /dev/sda (to update)
 # pvcreate /dev/sda15 (add in pv)
 # vgextend zoom /dev/sda15 (to extend vg size)
 # vgdisplay (to check extended vg size)

'Step 8:-To Remove LVM Concept from Partition'
 # umount /lvm (un mount the lv)
 # lvremove /dev/zoom/linux (1st remove lv)
 # lvdisplay (to check)
 # vgremove /dev/zoom (2nd remove vg)
 # vgdisplay (to check)
 # pvremove /dev/sda{12..15} (3rd remove pv's)
 # pvdisplay (to check)

(7)SWAP PARTITION PRACTICAL STEPS

TO CREATE A SWAP PARTITION
'Step 1:-Check the RAM size'
 # free -m (to check the RAM size in MB)
'Step 2:-Create One Partition'
 # fdisk /dev/sda (to create)
   Press 'n' to create new partition
   Enter the size: +4G (for example 4GB)
   Press 't' to change the ID of Partition
   Enter Partition No:16 (for example)
   Press 'L' to get the list of availabel ID's
   Enter 82 for swap
   Press 'p' to check
   Press 'w' to save & quit
'Step 3:-Update & Format the Partition'
 # partx -a /dev/sda (to update)
 # mkswap /dev/sda16 (to create swap filesystem)
 # blkid /dev/sda16 (to check)
'Step 4:-Enable the Swap Service'
 # swapon /dev/sda16 (to enable)
 # free -m (to check RAM size)
 # swapon -s (to check the status of swap partition)
'Step 5:-To Disable the Swap Service'
 # swapoff /dev/sda16 (to disable)
 # free -m (to check the RAM size)
 # swapon -s (to check the status)

(8)RAID PRACTICAL STEPS

TO IMPLEMMENT RAID 5 ON PARTITIONS

'Step 1:-Create 3 Raw Partitions for Raid 5'

```
 # fdisk /dev/sda (to create)
 # partx -a /dev/sda (to update kernel)
```

'Step 2:-Create a Metadisk'

```
# mdadm -C <metadisk_name> -n3 <partition_no's> -l5
# mdadm -C /dev/md0 -n3 /dev/sda{15..17} -l5
# mdadm -D /dev/md0 (to check)
```

'Step 3:-Format & Mount the Metadisk to Use'

```
 # mkfs.ext4 /dev/md0 (to format)
 # mkdir /raid (create new mount point)
 # mount /dev/md0 /raid (to mount)
 # mount (to check)
 # cd /raid (to access the metadisk)
 # mkdir zoom{1..100} (create some data)
 # ls (to check)
 # cd (come out)
```

'Step 4:-To check Raid-5 is Working or Not-Then in this case make one partition faulty & remove'

```
 # mdadm -D /dev/md0 (to check the status)
 # mdadm -f /dev/md0 /dev/sda15 (to make faulty)
 # mdadm -D /dev/md0 (to check)
 # mdadm -r /dev/md0 /dev/sda15 (to remove)
 # mdadm -D /dev/md0 (to check)
 # ls /raid (to check the data in metadisk)
```

'Step 5:-To work with Raid-5,add one Partition'

```
 # fdisk /dev/sda (to create)
 # partx -a /dev/sda (to updat kernel)
 # mkfs.ext4 /dev/sda18 (for example-to format)
 # mdadm -a /dev/md0 /dev/sda18 (to add in metadisk)
 # mdadm -D /dev/md0 (to check)
 # ls /raid (check the data)
```

'Step 6:-To Stop the Raid Level 5'

```
 # umount /raid (un mount the metadisk)
 # mdadm -S /dev/md0 (to stop)
 # mdadm -D /dev/md0 (to check)
 # ls /raid (to check data in mount point)
```

'Step 7:-To Start the Raid Level 5'
mdadm -A /dev/md0 /dev/sda{16..18} (to start)
mdadm -D /dev/md0 (to check)
mount /dev/md0 /raid (to access metadisk)
ls /raid (to check the data in metadisk)

(9)DISK QUOTAS PRACTICAL STEPS

TO IMPLEMMENT THE DISK QUOTAS ON PARTITION
'Step 1:-Create One Partition & Format'
fdisk /dev/sda (to create)
partx -a /dev/sda (to update)
mkfs.ext4 /dev/sda8 (for example-to format)
mkdir /quota (create a new mount point)

'Step 2:-Apply Quotas Permission on the Partition'
mount -o usrquota,grpquota /dev/sda8 /quota
mount (to check)

'Step 3:-Create Quota Database in the Partition'
quotacheck -cugv /quota

'Step 4:-Enable the Quota Service'
quotaon /quota (to enable)
quotaon -p /quota (to check)

'Step 5:-Apply Full Permission on Mount Point'
chmod 777 /quota

'Step 6:-Define the Quota Limit Based on Inode or Block'
Create 2 Users
useradd tom
useradd jack
'### Defining Quotas Based on User Level ###'
(A)Implemmenting quotas based on inode for User:tom
edquota -u tom
  Filesystem block soft hard inode soft hard
  /dev/sda8   0   0   0   0   5   10
  :wq(save & quit the file)
su - tom (login as a user to check the result)
cd /quota (access mount point)
touch tom{1..10} (create 10 files)
ls (to check)
touch tom11 (try to create 11th file)
exit (logout)

(B)Implemmenting quotas based on block for User:jack
blockdev --getbsz /dev/sda8 (to check block size)
edquota -u jack
  Filesystem block soft hard inode soft hard
  /dev/sda8   0   12   20   0   0   0
  :wq(save & quit the file)
su - jack (login as a user to check the result)
cd /quota (access mount point)
mkdir jack{1..5} (create 5 dir's)
ls (to check)
mkdir jack6 (try to create 6th dir)
exit (logout)
NOTE:-If the block size of the partition is 4096 bytes
      then the size of each empty dir will be 4kb
      (1 block=1kb)

'Defining the Quotas Based on Group Level'
Create 3 Users (for example:a1 to a3)
groupadd zoom (create one group)
usermod -g zoom a1 (to add user as a primary)
usermod -g zoom a2
usermod -g zoom a3
(A)Implemmenting quotas based on inode for group:zoom
edquota -g zoom
  Filesystem block soft hard inode soft hard
  /dev/sda8   0   0   0   0   10   15
  :wq(save & quit the file)
su - a1
cd /quota
touch file{1..5} (create 5 files as user:a1)
exit (logout)
Then Create 5 files each as a user:a2 & a3
touch file16 (try to create 16th file as user:a3)
exit (logout)

(10)BACKUP PRACTICAL STEPS

BACKUP & RECOVERY
'TO TAKE A BACKUP FROM TAR PROGRAM - FOR DIRECTORIES'
mkdir zoom (create one dir /root)
touch zoom/liux{1..10} (add some data)
ls zoom (to check)
TO TAKE BACKUP:-
tar -cvf <destination/backupfile> <source>
tar -cvf /opt/zoom.tar zoom

```
# cd /opt
# ls (to check)
TO READ BACKUP FILE:-
# tar -tvf zoom.tar
# cd (go to original & remove data)
# rm -rf zoom
# ls (to check)
TO RESTORE:-
# tar -xvf /opt/zoom.tar
# ls (to check)

'TO TAKE A BACKUP FROM CPIO PROGRAM - FOR FILES'
# touch linux unix redhat (create some files in /root)
# ls (to check)
TO TAKE BACKUP:-
# ls linux unix redhat | cpio -ov > /opt/file.cpio
# cd /opt
# ls (to check)
TO READ BACKUP FILE:-
# cpio -tv < file.cpio
# cd (go to original location & remove files)
# rm -rf linux unix redhat
# ls (to check)
TO RESTORE:-
# cpio -iv < /opt/files.cpio
# ls (to check)

'TO TAKE THE BACKUP FROM DUMP - FOR PARTITION'
# mount (to check the partition mount points)
(For Example:- /dev/sda7 mounted on /home)
TO TAKE THE BACKUP:-
# dump -0uf <destination/backupfile> <partition_no>
# dump -0uf /opt/fullbackup /dev/sda7
# cd /opt
# ls (to check)

TO READ BACKUP FILE:-
# restore -tf fullbackup
# cd /home (go to the partition mount point)
# rm -rf * (remove all contents)
# ls (to check)
TO RESTORE:-
# restore -rf /opt/fullbackup
# ls (to check)
```

'TO TAKE THE BACKUP FROM SCP PROGRAM - FROM REMOTE PC'
ifconfig (to check the ip addess)
scp -rv <source> <remote_pc_ip:location>
scp -rv zoom 192.168.0.10:/media (for example)
To check the data-Go to the Remote Pc & check in /media
rm -rf zoom (remove data from source pc)
TO RESTORE:-
scp -rv <remote_pc_ip:location> <source>
scp -rv 192.168.0.10:/media/zoom /root
ls (to check)

(11)COMPRESSING TOOLS PRACTICAL STEPS

COMPRESSING TOOLS
(1)Create one Directory with Data in /root
(2)Convert the Directory into .tar extension file
  # tar -cvf /opt/zoom.tar zoom (for example)
  # cd /opt
  # ls (to check)
TO COMPRESS WITH GZIP:-
ll zoom.tar (check the size)
gzip zoom.tar
ll zoom.tar.gz (check the size)
TO UNCOMPRESS WITH GZIP:-
gunzip zoom.tar.gz
ls (to check)
TO COMPRESS WITH BZIP2:-
bzip2 zoom.tar
ll zoom.tar.bz2 (check the size)
TO UNCOMPRESS WITH BZIP2:-
bunzip2 zoom.tar.bz2
ls (to check)