BACKUP
Backup is used to prevent the data lost. The backup of data is taken to the backup medias.
if the source or the data which is taken in to the backup media is deleted, then we can restore it.

Backup Medias:
   Flopp) disks, cdrom, DVD, flashdrive, zipdrive, tape drive etc. The type of data and backup devices depends on the administrator and the company polacies.
3 types of backups are available

(1) full (2) Incremental (3) Differential

Full Backup :
   Here total backup of the file system is taken. It doesn't consider any modification time.
   If we apply this backup all the files are taken in to backup media.
   Disadvantages of this backup is it doesn't consider modification time of files and directories, hence space of the backup device will be wasted.

Incremental backup :
   It includes all files that were changed since the last full backup, Incremental backup depends upon the modification time of the resources.
   If the file system is corrupted then to recover it we have to add all the individual incremental backups to the full backup which was last taken.

Differential backup :
   As time increases since the last full backup the size of the differential backup increases.
   Differential backup acts on cumulative backup. if the file system is corrupted then to recover it we have to add the last differential backup to the full backup.

In linux Effectively we use for commands
1. tar (type archive)
2. cpio (copy in and out)
3. dd (disk to disk)
4. dump

Creat the destination
mkdir /dev/st0
tar <options> <destination> <source>
Options : -c create
          -t table of backup
             -x extract the backup
             -v verbose
             -f file
             -z zip

To take the backup
#tar -cvf /dev/st0/sun.tar /sun

To see the backup content
#tar -tvf/dev/st0/sun.tar

To extract the data
#tar -xvf /dev/stO/sun.tar

To extract the backup data to the required destination
#tar -xvf /dev/stO/sun.tar -C /root

To take the backup along with zip
tar -cvzf /devistO/sun.tar.gz /sun

@@@@CPIO
With this command we can take the backup in two ways.
(1) In Relative Method (2) Absolute Method
<source> | cpio <options> <controller> <destination>

Oprions -o (out)   controllers : 0 (or) > -out
        -I (in)   I (or) > -in

@@Rellathse method
In this method to take the backup we have to goto exact path

To take the backup
#ls * | cpio -icvf -0 /dev/stO/sun.cpiol

To see the backup content
#cpio -irvf -I /dev/stO/sun.cpiol

To extract the backup
cpio -icvf -I /dev/stO/sun.cpiol

Absolute Method To take the backup
#find /sun | cpio -ocvf> /dev/stO/sun.cpio2

To see the backup content
#cpio -itvf < /devistO/un.cpio2

To extract/recover the data
#cpio -icvf < /dev/stO/sun.cpio2

@@@@DD (Disk to Disk)
This command is used to take the backup of one partition to another, here source partition should be given to "if", destination partition should be passed to "of'

1. To take the backup
#dd if= /dev/hda6 of = /dev/hda7

in the above example source partition is /dev/hda6, destination partition is /dev/hda7

2. To recovery
#dd if=/dev/hda7 of=/dev/hda6

@@@@Dump
With this command we don't need to unmount partition to take the backup.

To Take The backup
#dump -Ouf Idev/stO/dumpl /dev/hda6
      0 - full backup 1-9 (incremental /differential)

To create the data
#restore -rvf /dev/st0/dumpl
          r-recursively v-verbose f-file

To check the dumpdates
cat /etc/dumpdates

@@@Remote Backup:
1. To take backup
#rsync -avg <soruce> -e ssh <destination ip>:<path>

To recover
#rsync -avg -e ssh <destination ip>:<path> <source>

Anotherway To take backnp
scp -r <source> ssh <destination ip>:<path>

To recovery
#scp -r ssh <destination ip>:<patii> <sourcepath>