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How to: HP-UX UNIX Backup and Recover Data to Tape Device

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Q. One of my responsibilities is backing up UNIX server. How do I backup data under HP-UX UNIX? How do I use mt, fbackup and frecover commands to perform full and incremental backups?

A. HP-UX offers various commands just like any other UNIX system to backup file system, data and applications such as
tar command
a] dump / restore command (HFS filesystem only)

b] vxdump / vxrestore (vxfs filesystem only)

c] cpio command

d] fbackup / frecover command

e] dd command

f] tar command

g] make_net_recovery or make_tape_recovery commands

[1]

HP-UX Tape device names

First device will have name such as /dev/rmt/0m, /dev/rmt/1m and so on.

1. Raw magnetic tape interface - /dev/rmt/*
2. Default tape interface - /dev/rmt/0mnb

HP-UX Tape - mt ~ manipulating program

mt command winds the tape in the requested direction (forward or backward), stopping after the specified count EOF marks or records are passed. If count is not specified, one is assumed. Each EOF mark counts as one record. When winding backwards, the tape always stops at the BOT marker, regardless of the number remaining in count.See mt command man page for more information. For example, Rewind the tape associated with the device file /dev/rmt/0mnb:

```
# mt -f /dev/rmt/0mnb rew
```

How do I backup data with fbackup command?

Backup /data directory to /dev/rmt/0m, enter:

```
# fbackup -i /data -I index.data -f /dev/rmt/0m
```

Where,

- **-i /data** : Backup /data directory. There is no limit on how many times the -i option can be specified i.e. -i /data -i /home -i /path/to/something
- **-I index.data** : index.data specifies the name of the on-line index file to be generated. It consists of one line for each file backed up during the session. Each line contains the file size, the volume number on which that file resides, and the file name. If the -I option is omitted, no index file is generated.
- **-f /dev/rmt/0m** : Specify tape device name
- **-e /tmp** : Exclude /tmp from backup
- **-g /var/adm/fbackupfiles/hporabox11.backup.list.txt** : File that contains a list of files / dirs to be included / excluded from the tape backup
- **-u** : Update the database of past backups so that it contains the backup level, the time of the beginning and end of the session, and the graph file used for this fbackup session. Only use this if you are using -g /path/to/file option.

Using the normal tape location to do a full backup, insert a new tape and enter:

```
# fbackup -f /dev/rmt/0m -i -v
```

Using the normal tape location to do a full backup but exclude /tmp and /cdrom /nfs directories, insert a new tape and enter:

```
# fbackup -f /dev/rmt/0m -i / -e /tmp -e /cdrom -e /nfs -v
```

You can also create a text file that contains a list of all files and directories to be included or excluded from the backup. For example, backup full file system but exclude /tmp, /cdrom and /nfs, enet:

```
# cd /var/adm/fbackupfiles
# vi hporabox11.backup.list.txt
```

Append following list

```
i /
e /tmp
e /nfs
e /cdrom
```

Save and close the file. To backup enter,

```
# fbackup -f /dev/rmt/0m -g /var/adm/fbackupfiles/hporabox11.backup.list.txt -v
```

How do I perform full and incremental backups?

The -0-9 option used to specify backup level. This single-digit number is the backup level. Level 0 indicates a full backup. Higher levels are generally used to perform incremental backups. When doing an incremental backup of a particular graph at a particular level, the database of past backups is searched to find the date of the most recent backup of the same graph that was done at a lower level. If no such entry is found, the beginning of time is assumed. All files in the graph that have been modified since this date are backed.
First, perform full backup, enter:

```
# fbackup -f /dev/rmt/0m -u -0 -g /var/adm/fbackupfiles/hporabox11.backup.list.txt -v
```

To perform incremental backup, enter:

```
# fbackup -f /dev/rmt/0m -u -1 -g /var/adm/fbackupfiles/hporabox11.backup.list.txt -v
```

How do I view contents of an fbackup tape?

Type the following command:

```
# frecover -f /dev/rmt/0m -x -N -v
```

How do I backup data with frecover command?

To restore all files and directories from tape, enter:

```
# frecover -f /dev/rmt/0m -r -v
```

To restore selected files or directories use -i /path option. For example, just restore /home/vivek directory, enter:

```
# frecover -f /dev/rmt/0m -x -v -i /home/vivek
```

Where,

- -r : Recovery all data from tape
- -x : Extracted / recover selected files / dires only specified by -i option
- -i /path/to/file : Recover only this file or directory
- -v : Verbose output

How do I verify tape backup?

The -N option (no recovery) prevent frecover from actually recovering any files onto disk, but read the backup as if it was, in fact, recovering the data from the backup, producing the same output that it would on a normal recovery. This option is useful for verifying backup media contents in terms of validity (block checksum errors are reported), and contents (a listing of files can be produced by using the -N and -v options together). Note that the listing of files produced with the -N and -v options requires the reading of the entire backup, but is therefore a more accurate reflection of the backup's contents than the index stored at the beginning of the backup (which was created at the start of the backup session, and is not changed during the course of the backup).

```
# frecover -f /dev/rmt/0m -N
```

Further readings:

- man pages - rmt, frecover, tar, fbackup, mt, tar

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