NAME mt -- manipulate magtape

SYNOPSIS mt [key] [name ...]

DESCRIPTION mt saves and restores selected portions of the file system hierarchy on magtape. Its actions are controlled by the key argument. The key is a string of characters containing at most one function letter and possibly one or more function modifiers. Other arguments to the command are file or directory names specifying which files are to be dumped, restored, or tabled.

The function portion of the key is specified by one of the following letters:

r The indicated files and directories, together with all subdirectories, are dumped onto the tape. The old contents of the tape are lost.

x extracts the named files from the tape to the file system. The owner, mode, and date-modified are restored to what they were when the file was dumped. If no file argument is given, the entire contents of the tape are extracted.

t lists the names of all files stored on the tape which are the same as or are hierarchically below the file arguments. If no file argument is given, the entire contents of the tape are tabled.

l is the same as t except that an expanded listing is produced giving all the available information about the listed files.

The following characters may be used in addition to the letter which selects the function desired.

0, ..., 7 This modifier selects the drive on which the tape is mounted. "0" is the default.

v Normally mt does its work silently. The v (verbose) option causes it to type the name of each file it treats preceded by a letter to indicate what is happening.

a file is being added
x file is being extracted

The v option can be used with r and x only.

f causes new entries copied on tape to be 'fake' in that only the entries, not the data associated with the entries are updated. Such fake entries cannot be extracted. Usable only with r.

w causes mt to pause before treating each file, type the indicative letter and the file name (as with v) and await the user's response. Response "y" means "yes", so the file is treated. Null response means "no", and the file does not take part in whatever is being done. Response "x" means "exit"; the mt command terminates immediately. In the x function, files previously asked about have been extracted already. With r, no change has been made to the tape.

m make (create) directories during an x if necessary.

FILES /dev/mt?

SEE ALSO tap(I), tap(V)

DIAGNOSTICS Tape open error
Tape read error
Tape write error
Directory checksum
Directory overflow
Seek error
Tape overflow
Phase error (a file has changed after it was selected for dumping but before it was dumped)

BUGS If, during an "x", the files are specified in a different order than they are on the tape, seek errors will result because the tape cannot be rewound.

NAME tap -- manipulate DECtape

SYNOPSIS tap [key] [name ...]

DESCRIPTION tap saves and restores selected portions of the file system hierarchy on DECtape. Its actions are controlled by the key argument. The key is a string of characters containing at most one function letter and possibly one or more function modifiers. Other arguments to the command are file or directory names specifying which files are to be dumped, restored, or tabled.

The function portion of the key is specified by one of the following letters:

r The indicated files and directories, together with all subdirectories, are dumped onto the tape. If files with the same names already exist, they are replaced (hence the "r"). "Same" is determined by string comparison, so "./abc" can never be the same as "/usr/dmr/abc" even if "/usr/dmr" is the current directory. If no file argument is given, "." is the default.

u updates the tape. u is the same as r, but a file is replaced only if its modification date is later than the date stored on the tape; that is to say, if it has changed since it was dumped. u is the default command if none is given.

d deletes the named files and directories from the tape. At least one file argument must be given.

x extracts the named files from the tape to the file system. The owner, mode, and date-modified are restored to what they were when the file was dumped. If no file argument is given, the entire contents of the tape are extracted.

t lists the names of all files stored on the tape which are the same as or are hierarchically below the file arguments. If no file argument is given, the entire contents of the tape are tabled.

l is the same as t except that an expanded listing is produced giving all the available information about the listed files.

The following characters may be used in addition to the letter which selects the function desired.

0, ..., 7 This modifier selects the drive on which the tape is mounted. "0" is the default.

v Normally tap does its work silently. The v (verbose) option causes it to type the name of each file it treats preceded by a letter to indicate what is happening.

```
r  file is being replaced
a  file is being added (not there before)
x  file is being extracted
d  file is being deleted
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The v option can be used with r, u, d, and x only.

c means a fresh dump is being created; the tape directory will be zeroed before beginning. Usable only with r and u.

f causes new entries copied on tape to be ’fake’ in that no data is present for these entries. Such fake entries can-

not be extracted. Usable only with r and u.

w causes tap to pause before treating each file, type the indicative letter and the file name (as with v) and await the user's response. Response "y" means "yes", so the file is treated. Null response means "no", and the file does not take part in whatever is being done. Response "x" means "exit"; the tap command terminates immediately. In the x function, files previously asked about have been extracted already. With r, u, and d no change has been made to the tape.

m make (create) directories during an x if necessary.

FILES /dev/tap?

SEE ALSO mt(I)

DIAGNOSTICS Tape open error
Tape read error
Tape write error
Directory checksum
Directory overflow
Tape overflow
Phase error (a file has changed after it was selected for dumping but before it was dumped)

BUGS Asks about "fake" entries on "xw", when it should ignore them. If a fake entry is extracted, and the file already exists on disk, the extraction does not take place (as is correct), but the mode and user ID of the file are set to 0.

NAME tap -- DEC/mag tape formats

DESCRIPTION The DECtape command tap and the magtape command mt dump and extract files to and from their respective tape media. The formats of these tapes are the same except that magtapes have larger directories.

Block zero of the tape is not used. It is available to contain a boot program to be used in a stand-alone environment. This has proved valuable for DEC diagnostic programs.

Blocks 1 through 24 for DECtape (1 through 146 for magtape) contain a directory of the tape. There are 192 (resp. 1168) entries in the directory; 8 entries per block; 64 bytes per entry. Each entry has the following format:

path name	32 bytes
mode	1 byte
uid	1 byte
size	2 bytes
time modified	4 bytes
tape address	2 bytes
unused	20 bytes
check sum	2 bytes

The path name entry is the path name of the file when put on the tape. If the pathname starts with a zero word, the entry is empty. It is at most 32 bytes long and ends in a null byte. Mode, uid, size and time modified are the same as described under i-nodes (see file system (V)) The tape address is the tape block number of the start of the contents of the file. Every file starts on a block boundary. The file occupies (size+511)/512 blocks of continuous tape. The checksum entry has a value such that the sum of the 32 words of the directory entry is zero.

Blocks 25 (resp. 147) on are available for file storage.

A fake entry (see mt(I), tap(I)) has a size of zero.

SEE ALSO filesystem(V), mt(I), tap(I)