Identification

The tape_daemon control file
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Purpose

The tape system process (invoked through segment tape_daemon),
is mainly controlled by means of ascii files containing
instructions for writing (and reading) tapes. tape_daemon
will process a control file either by explicit command
of the tape operator or upon receipt of an interprocess
signal from the merge_edit, tape_in or tape_out command.

The Tape Daemon Control File

The tape_daemon control file is considered to be an ascii
character string. The string is broken into control lines
by the new-line character (012). The format of the file
is:

file	=	chars | line | line file
chars	=	<any ascii character string>
line	=	operator delim* [:] args newline
delim	=	comma | blank | htab
args	=	ndchars delim* | ndchars delim* args
ndchars	=	<any ascii string not containing comma, blank, vertical tab, colon or newline>
operator	=	ndchars

Or, in translation, the file consists of lines each of
which has an operator (the first string of non-delimiters)
followed by an optional colon and a string of arguments,
all separated by delimiters (blank, comma, and horizontal
tab).

The use of the file is most simply explained by listing
the operators and their expected arguments and the actions
which they cause. All of the operators may be abbreviated
by their first letter.

Operators

14B   [name | : data]

Write records on tape in binary mode - 14
words/record. Use only 12 words of data per
record, padding the last 12 six-bit characters
with GE-BCD for blank.

Used only by Merge_editor

Take data from file name, in which case it
is already converted to GE BCD and will not
be processed, or from the ascii string directly
following the colon and up to but not including
the next new-line character (in which case
the ascii is converted to GE BCD).

27B   [-name- | : x]

Write records on tape in binary mode - 27
words/record. The record format is:

        word 1 = 00500 0000XX where XX is word count

        word 2 = zeros

        words 3-24 are data

        words 25-27 are zeros

Used only by the merge-editor.

Take data from file name, 22 words/record, no
conversion. If name is absent, take the next
27 words from the data file associated with
this control file and write one record only.

If the colon is present, take the next x words
($x \leq 27$) from the associated data file, pad
with zeros and write one record only.

7 Punch   [name | : ascii data]

Write records on tape in 7Punch format (see
appendix).

Operators

7 Punch   If <u>name</u> is given, write out file <u>name</u>, no
conversion. If the colon is present, take
the ascii string between it and the next
newline, prepend nine bits of count of the
character string in characters, pad it
with ascii blanks to 22 words and write
out that record only. In this case,
sequence numbering is remembered, so that
the next 7Punch file operator will cause
the rest of the file to be appended in
sequence.

BCD   [name | : data]

Write records on tape in BCD mode (84
characters/record). Last 12 characters
are IBM blanks.

If <u>name</u> is given, take the data from
file <u>name</u> with no conversion. If the
colon is present, take the following character
string up to the next newline; convert the
string from ascii to IBM-BCD, pad it to
72 characters with IBM blanks.

Comment   -data-

Take the character string from "t" + one to
newline - one and print it on the tape
operator's console.

Dismount

Rewind and unload the tape last <u>mounted</u>.

EOF

Write end-of-file on current tape.

Files   -directory name-

Read files from tape and put them into the
specified directory. This operator must
be preceded by a <u>MOUNT</u>. The following lines
up to the next line beginning with "NDFILES"
are taken to consist of pairs of arguments
each of which is a character string of at

Operators

Files

most 6 characters. Only files corresponding
to these pairs of names will be input. The
files need not be in the same order as they
appear on the tape. The default directory
is the directory in which the control file
is found. The directory name on the tape
is ignored.

If "file" is followed by a line with the single
token "all", then every file on the tape will
be input. In this case, no "ndfiles" is expected.

History

-name-

Write a history of errors and pertinent data
in the file specified. Include the reel
numbers of any tapes used and any operator
comments and replies. The directory used
is the one in which the control file is found.

Insert

name

The file name is taken as the next source of
daemon commands. When a "Stop" operator is
found in an insert file, processing reverts
to the previous file. A depth of nine files
is allowed.

Mount

-reelno-   ["w" |"r"]

Have tape reel reelno mounted on the write
("w") or read ("r") drive. Defaults are any
free reel and "w" (write).

Ndfiles

Used only in conjunction with files. Otherwise
ignored.

Stop

If the current file is an insert, revert to the
previous file; else check that the tape has been
dismounted (cause it to happen, if not) and
end processing.

Operators

Wdir   -directory-name-

                        The directory in which to look for files which
                        are specified only by entry-name. Default is
                        tape_daemon working directory.

                        Any operators having first letters other than
                        those given above are ignored. The initial
                        implementation will only scan the initial
                        letter of an operator.

                        APPENDIX

                    7PUNCH Card Format

The 7PUNCH card format is peculiar to the CTSS system
at MIT, so that it deserves description. The 7PUNCH cards
are column binary cards which have punches in rows
12-11-0-7-9 of column one.

        word one in octal = 7WW5WWTSSSSS

        Word two = full word logical checksum of all words on
                   the card except the checksum itself (does
                   not include columns 73-80)

Remaining words are data words.

        wwww   is the word-count of the number of data words
                to be taken from the card. If wwww $\leq$ (26)8,
                there are wwww words actually on the card
                (beginning with column 7). If wwww $\geq$ (26)8,
                there is only one data word on the card (columns
                7,8,9) and it is to be repeated in core wwww
                times.

        sssss   is a binary sequence number beginning with zero.

            T   is zero, except on the last card where it is a one.

On tape, the 7PUNCH record is 168 six bit characters long
(28 words - 1st 24 are in seven punch format - last 4
are zeros).