Memo: Operations staff

Subj: New Disk Editor Program

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General

Sometime in May, the new version of CTSS will be placed in service. The disk file structure will be entirely different from that of the current system, therefore, a new disk editor as well as a new retrieval scheme is necessary. The new disk editor is not a preprocessor. It is a background job which can be run while CTSS is in operation, or it can be run as a stand-alone background job. It will scan all the user's file directories looking for OUTPUT RQUEST files it will process any requests from tape A2.

The requests on tape A2 may be any of the requests mentioned in the attached write-up as well as a few additional ones to be described here. The reading of tapes on A2 should be terminated by a CLOSE card on A2. Any single A2 tape may be stopped by a STOP card so that another tape may be switched to A2. If for some reason, the job must be terminated before it reads a CLOSE card or while it is processing OUTPUT RQUEST files, sense switch 2 should be put down. The job should not be terminated in any other way or the file system will not be updated properly.

Retrieval requests which require history tapes of the old format may be processed in the same manner in which they used to be. That is the input tapes created by the old retrieve program are acceptable input to the new disk editor.

Additional requests

STOP   If the single word stop appears on a card, the current versions of the MFD and UFD will be updated onto the disk and the editor will stop. Tape A2 may then be switched and hit start to continue.

CLOSE   The single word CLOSE on a card causes the current UFD and MFD to be updated onto the disk; the carry tape, if any, to be closed and rewound and unloaded, the print output buffer to be cleared, and end of files to be written on the print and punch tapes.

UPDMFD   PROGNO   PROGNO   DRUM   DISK   TAPE

>UPDMFD causes the usr PROBNO PROBNO to be placed in the MFD with the record quotas as specified by the following 3 decimal numbers.

LINK   PROB   PROG   FN1   FN2   PR1   PG1   MODE

>LINK causes a link to be formed in file directory of PROB PROG to the file FN1 FN2 in the file directory of PR1 PG1 and set the local mode to MODE.

To date, two requests are not available and may never be available, namely STAT and COPY.

Operation

Load the disk editor as a background job.
It will use: A3 for printed output
                   B4 for punch output
                   B1 for a carry tape
                   A2 card input.

Sense Switch settings:

2.   down - emergency stop. causes the buffers to be cleared and the UFD and MFD to be updated.
3.   down - There is an A2 tape to be read and the OUTPUT RQUEST files should __not__ be processed.
4.   up   - There is no A2 tape to be read
     down - There is an A2 and it will be read after the OUTPUT RQUEST files are processed.
5.   down - All of the output which goes to A3 will also be printed on the on-line printer.
6.   up   - normal run
     down - rerun of disk editor. Temporary OUTPUT RQUEST files are processed and then deleted.

If a carry tape is created, it will be rewound and unloaded at the end of the job and a table of contents of the carry tape will be added to the end of the print tape on A3. Files on the carry tape will be separated by physical end of files.

The on-line printer will print each control card (or request from OUTPUT RQUEST) as it is being processed. Most errors which cause a request to be unsuccessful will also print on-line. as well as off-line. Each control card is also

printed off-line and each PRINT request will cause a page
eject and a full line of asterisks to be printed at the
beginning and ending of the printed output. The print tape
on A3 is blocked at about 960 characters.

The input tape on A2 requires an *EOF* or a physical end of
file after each INPUT deck. Any other *EOF*'s or end of
files will be ignored. The input tape should not be
blocked, i.e., should be one card per record. Remarks are
legal only on cards which have a fixed length format
(CLOSE,STOP,UPDMFD).

Identification

Bulk input and output

Purpose

Since the console is a relatively slow input/output device,
it is necessary and desirable to have a means of entering
programs and data into the disk files from card decks and
conversely to be able to output disk files onto cards or the
high speed printer. Files may be punched on cards in such a
format that they may later be reentered into the system to
exactly duplicate the original file. In this way, cards may
serve as a permanent, inexpensive back-up.

Usage

The disk editor program is run several times a day by the
operations staff. Request cards may be submitted to the
dispatcher by the user or the RQUEST command may be used to
create a line-numbered card image file called OUTPUT RQUEST.
Each line within the OUTPUT RQUEST file is the equivalent of
a control card and may, therefore, specify any of the
following requests except INPUT. The format of each line is
the same as a control card except the PROB PROG must not be
specified. See Method, below.

The control cards for the disk editor are of the format:

    XX PROB PROG NAME1 NAME2 OP ... NAME1n NAME2n

The fields blanks and are separated by one or more blanks or
a comma.

      PROB   is the problem number. It must not be
             specified in an OUTPUT RQUEST file.

      PROG   is the programmer number. It must not be
             specified in an OUTPUT RQUEST file.

      NAME1 NAME2 is the file name. Most requests allow
             more than one file name per card with the
             restriction that the file name must be
             complete on one card, i.e., NAME2 may not be
             on a continuation card.

      XX=C   Continuation card

    XX=INPUT This card must precede a card deck to be input
             to the disk. The last card of the deck must
             have *EOF* beginning in column 8. Only one
             file name may appear on the control card and
             OP may specify the desired mode in octal for
             the file. If OP is not specified, a permanent

file will be created, or if a file of the same
name already exists, the mode will be
preserved.

XX=PRINT   The BCD file NAME1 NAME2 is printed off-line.
If the file is not line marked, a blank word
is inserted at the beginning of the line to
insure single spacing and the first 84
characters of the record are printed. If the
file is line-marked, the first character is
the carriage control character and the rest of
the line, up to 131 characters, is printed.

XX=DPUNCH   The BCD file NAME1 NAME2 is punched off-line.
If the file is line-marked, just the first 80
characters per line of data will be punched.

XX=BPUNCH   The binary card image file NAME1 NAME2 will be
punched off-line. The 7-9 punch and checksums
should already be included in the card image
file.

XX=7PUNCH   The file NAME1 NAME2 (of any format) will be
punched off-line in a special card format
which may be reloaded by the disk editor to
reproduce the file exactly. The file is not
deleted from the user's directory.

XX=DELETE   The file NAME1 NAME2 will be deleted from the
current file directory.

XX=CARRY   The file NAME1 NAME2 will be carried to the
other computer and will be loaded onto the
disk during the next load or update. It will
be loaded in permanent mode, with the same
name (NAME1 NAME2), within the same
problem-programmer file directory. If a
different problem-programmer specification is
desired for the receiving file directory, OP
may be PROB1 PROG1, (i.e., the desired problem
programmer numbers). If a different file name
is desired, OP may be PROB1 PROG1 NAM1 NAM2,
where PROB1 PROG1 must be the problem
programmer numbers for the receiving file
directory and NAM1 NAM2 is the name to be
given to the input file.

The file NAME1 NAME2 on this machine is in no
way changed. Any previous versions of the file
on the receiving machine will be deleted
regardless of mode, but the mode will be
preserved by the new file.

XX=PRNDEL; DPUDEL; BPUDEL; 7PUDEL:

> The file(s) will be PRINTed, DPUNCHed,
> BPUNCHed, or 7PUNCHed and then the mode will
> be changed to temporary. The next time the
> file is read or the user logs out, the file
> will be deleted. This is safer than a process
> request followed by a DELETE request. In case
> of machine or tape failure during the
> processing of the request, the operations
> staff will have the opportunity of restarting
> the disk editor.

XX=CHFILE Change the name and/or the mode of NAME1
NAME2. Only one file may be specified in one
request. OP is MODE NEW1 NEW2. MODE is the
octal value of the new mode or * if the mode
is not to change. NEW1 NEW2 are the new
names; either may be * if it is not to be
changed from the original. Both NEW1 NEW2 may
be omitted if only the mode is to change.

Method

The disk editor is a background job which is run several
times a day by the operations staff. The users' file
directories are searched for OUTPUT RQUEST files. When such
a file is found, the editor ATTACHes to the user's file
directory and processes the requests found in OUTPUT RQUEST.
Because the editor knows who the user is, PROB PROG need not
be specified in the OUTPUT RQUEST file. Due to the file
system locks, the user will not be able to edit the OUTPUT
RQUEST file while the disk editor is processing it. The
OUTPUT RQUEST file will be changed to temporary mode by the
disk editor after it is processed. After all OUTPUT RQUESTs
have been processed, the editor may read cards from the
background input tape. As a result of the requests, the
editor may create three output tapes which are then the
responsibility of the operations staff, namely punch tape,
print tape and carry tape.