REFERENCE MANUAL
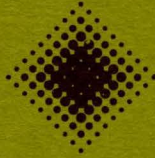
FILE COPY
UTILITY PROGRAM
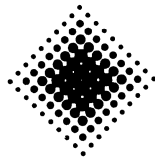
SYSTEM TEN BY SINGER

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REFERENCE MANUAL

FILE COPY
UTILITY PROGRAM

SYSTEM TEN BY SINGER

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GENERAL SUMMARY

FILE COPY is a utility program which copies files from one device to another. It requires at least a 6K partition with either

1. a card reader (device 0);

   OR

2. a workstation (device 0) and a card reader (device 1)*.

Input files may consist of either fixed-length or variable-length records, blocked or unblocked, and may come from any of the following devices:

- card reader

- magnetic tape drive

- disc drive (either a physical sequential or a DMF linked sequential file)

- workstation

- high speed paper tape reader (8 channel, ANSI format)

Output files may consist of either fixed-length or variable-length records, blocked or unblocked, and may be routed to any of the following devices:

- line printer

- card punch

- magnetic tape drive

- disc drive (physical sequential file)

- workstation

- paper tape punch

---

* This assumes standard device numbers. However, provided that the user alters the appropriate parameters, there is nothing to prevent the card reader from having a device number 2-9.

1   **FILE COPY UTILITY PROGRAM**

The user may enter the necessary parameters either through the card reader or the workstation. If the output device is specified as being something other than a line printer, then the user may request that an auxiliary listing be produced. A sample of FILE COPY formatted printed output is shown in Appendix A.

FILE COPY does <u>not</u> test the parameters to make sure they are within the valid range. Consequently, erroneous parameters may produce unexpected results.

The error messages resulting from I/O errors are shown in Appendix B.

A few typical uses of FILE COPY are as follows:

- Print a file (from magnetic tape, disc, paper tape, or punched cards).

- Create a magnetic tape file from cards.

- Copy of magnetic tape, and in the process alter the blocking factor.

DEFINING FILES

To define an input file, the user must always provide the following parameters:

- Input Device Type (physical sequential disc, DMF linked sequential disc, magnetic tape, or other)

- Record Format (fixed-length or variable-length)

- Record Size (maximum size for variable-length records)

- Blocking Factor

- Number of Blocks to be Processed

If the input device is disc, the user must provide the starting disc address of the file. If the input device is anything other than a disc, the user must provide the device's number.

To define an output file, the user must always provide the following parameters:

- Output Device Type (physical sequential disc, magnetic tape, line printer, or other)

- Record format (fixed-length or variable-length)

- Record Size (maximum size for variable-length records)

- Blocking Factor

If the file is destined for disc, the user must provide the starting disc address. If the file is destined for any device other than a disc, the user must provide the device's number.

3   **FILE COPY UTILITY PROGRAM**

FILE PARAMETER CARDS (FP CARDS)

An FP card contains all the parameters needed to copy a single file from one device to another. It defines the input file, defines the output file, and specifies whether or not an auxiliary listing is desired.

All the parameters are positional. The format is as follows:

Device Type
Device Number
Record Size
Blocking Factor
Record Format
Starting Disc Address
Number of Blocks to be Processed

Title for Printed Output
Starting Disc Address
Record Format
Blocking Factor
Record Size
Device Number
Device Type
Auxiliary Listing Device Number
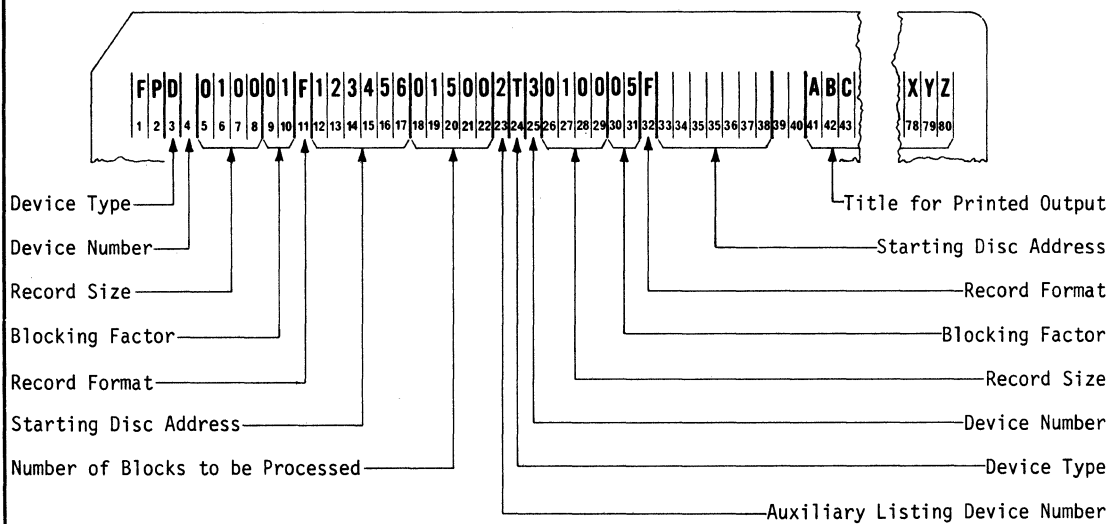
INPUT PARAMETERS   OUTPUT PARAMETERS

FP cards may be either read in through the card reader, or typed in through the workstation.

The valid range for each parameter is shown on the following page. It should be remembered that FILE COPY does <u>not</u> test parameters to see if they fall within their respective valid ranges.

FILE PARAMETER CARDS (FP CARDS)

<u>Device Type (input):</u>

    D (disc)
    T (magnetic tape)
    O (other)

<u>Device Type (output):</u>

    D (physical sequential disc)
    T (magnetic tape)
    P (line printer)
    O (other)

<u>Device Number (input or output):</u>

    L (if linked sequential disc -- input only)
    0-9

<u>Record Size (input or output):</u>

    0001-9999

<u>Blocking Factor (input or output):</u>

    01-99

<u>Record Format (input or output):</u>

    F (fixed-length records)
    V (variable-length records)

<u>Starting Disc Address (input or output):</u>

    000000-999999

<u>Number of Blocks to be Processed:</u>

    00001-99999

<u>Auxiliary Listing Device Number:</u>

    0-9

USING FILE COPY

WORKSTATION AS DEVICE 0, CARD READER AS DEVICE I

The user places the absolute loader and FILE COPY in the card reader's input hopper. If the FP cards are to be read in through the card reader, then they should be placed in the hopper behind FILE COPY. The FP cards, if present, should be followed by a unit separator card. The user then initiates a load sequence at the workstation, places the workstation on-line, and enters the following instruction:

    1001010290

This "bootstraps" the loader into memory. The loader then brings FILE COPY into memory and passes control to it. FILE COPY responds by typing the following message on the workstation:

    FP INPUT IOC NO = X

This asks for the number of the device through which the FP cards are to be read.

If the user responds by typing a 0, then FILE COPY types ENTER FILE COPY PARAMETERS and waits for the user to enter 80 characters (i.e., a single FP card). If a particular FP card does not require the full 80 characters, then the user may prematurely terminate the entry by depressing the ENTER key. When the user has entered an FP card, FILE COPY performs the defined operation. When the defined operation is finished, FILE COPY responds with FP INPUT IOC NO = X. This cycle is repeated until the user finally depresses the ENTER key without having typed any parameters.

If the user responds by typing a 1, then FILE COPY reads the first FP card and performs the defined operation. When the operation is finished, FILE COPY responds with FP INPUT IOC NO = X. This cycle is repeated until the unit separator card is encountered.

NOTE: If an FP card calls for input through the card reader, then the input file terminated by a unit separator card must be placed immediately behind the particular FP card.

CARD READER AS DEVICE 0

The user places a "bootstrap" card (0001010290 in columns 1-10), the absolute loader, FILE COPY, the FP cards, and a unit separator card in the card reader's input hopper. He then initiates a load sequence at the card reader. This "bootstraps" the loader into memory. The loader brings in FILE COPY which then reads the first FP card and performs the defined operation, reads the second FP card and performs the defined operation, etc., until the unit separator card is encountered.

NOTE: If an FP card calls for input through the card reader, then the input file terminated by a unit separator card must be placed immediately behind the particular FP card.

SPECIAL CONSIDERATIONS

1. FILE COPY uses the locations above 5000P for its input and output buffers. This means, for example, that in a 10K partition the maximum sized input block <u>plus</u> the maximum sized output block may not exceed 5000 characters.

2. When it is desired to obtain formatted printed output via the workstation, one must either specify the output device type as P (line printer) with an IOC device assignment of zero, or specify device zero as the auxiliary listing device.

   If it is desired to display a single record on the workstation without the usual formatting, one must specify the output device as O (the letter O) with an IOC device assignment of zero.

3. Variable-length blocks and records must conform to the following conventions:

   Each block must have as its first four characters a block length indicator (BLI). The BLI includes itself in the length specification.

   Each record must contain as its first four characters a record length indicator (RLI). The RLI includes itself in the length specification.

   On disc, each BLI <u>must</u> reside in the first four positions of a sector.

4. Fixed-length records cannot be created from variable-length records because the RLI is copied as part of the data.

   When creating variable-length records from fixed-length records, FILE COPY automatically creates the proper RLIs and BLIs.

5. Inter-partition file contention is not tested for.

6. FILE COPY expects linked sequential disc files to be terminated by six slashes in sector positions 95-100 of the final sector of the file. Similarly, it expects physical sequential disc files to be terminated by a sector containing the characters *END in sector positions 1-4.

   On output, FILE COPY does <u>not</u> automatically generate the *END. The *END must be in the file being copied as the first four characters of a separate block (the block must <u>not</u> contain a BLI or RLI).

SPECIAL CONSIDERATIONS

7. If the user wishes to process <u>all</u> blocks in the input file, he specifies so by using 99999 as the number of blocks to be processed.

8. Once file copying has been begun, the user may prematurely terminate the operation by depressing the SERVICE REQUEST switch on the workstation. The operation will terminate after the current record has been copied.

9. To use a linked sequential disc file as input <u>requires</u> that the user know the actual starting disc address of the file (i.e., the user cannot specify pool name and file name).

FILE COPY UTILITY PROGRAM

APPENDIX A

SAMPLE OF FILE COPY FORMATTED PRINTED OUTPUT

The first page contains the list of parameters which the user supplied. They appear exactly as entered on the FP card. The main body of the printed output looks as follows (this example contains a series of 80 character records, 7 to each block):

(User-supplied title)

```
SAMPLE OF FILE COPY PRINTED OUTPUT                    SYSTEM TEN - FILE COPY RECORD LISTING

        1...5...10....5...20....5...30....5...40....5...50....5...60....5...70....5...80....5...90....5..100

BLOCK   1   AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA          RECORD    1
            BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB          RECORD    2
            CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC          RECORD    3
            DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD          RECORD    4
            EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE          RECORD    5
            FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF          RECORD    6
            GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG          RECORD    7
BLOCK   2   HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH          RECORD    8
            IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII          RECORD    9
            JJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJJ          RECORD   10
            KKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKKK          RECORD   11
            LLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLL          RECORD   12
            MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM          RECORD   13
            NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN          RECORD   14
BLOCK   3   OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO          RECORD   15
            PPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPP          RECORD   16
            QQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQ          RECORD   17
            RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR          RECORD   18
            SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS          RECORD   19
            TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT          RECORD   20
            UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU          RECORD   21
BLOCK   4   VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV          RECORD   22
            WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW          RECORD   23
            XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX          RECORD   24
            YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY          RECORD   25
            ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ          RECORD   26
            ABABABABABABABABABABABABABABABABABABABABABABABABABABABABABABABABABABABABABABABAB          RECORD   27
            BCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBCBC          RECORD   28
BLOCK   5   CDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCDCD          RECORD   29
            DEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDE          RECORD   30
            EFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEFEF          RECORD   31
            FGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFGFG          RECORD   32
            GHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGHGH          RECORD   33
            HIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHI          RECORD   34
            IJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJIJ          RECORD   35
```

The user-supplied title appears at the top of every page.

If the output device was specified as being a line printer, then the block and record counts within the main body of the listing reflect the <u>input</u> blocking factor. In an auxiliary listing, they reflect the <u>output</u> blocking factor.

APPENDIX A

The final line contains the following totals:

BLOCKS READ xxxx RECORDS READ xxxx WRT SKIPS xxxxxx

The first two statistics always reflect the input blocking factor. It should be noted that in an auxiliary listing they will differ from those which appear in the main body if the blocking factor is being altered from input to output. The third statistic refers to the number of sections of blank tape which had to be produced due to persistent parity errors. If, after four attempts, FILE COPY cannot successfully write a block on magnetic tape, it erases a section of tape and then tries to write the block, etc. WRT SKIPS tells the number of times this situation occurred.

If an I/O error occurred, then the related message (see Appendix B) also appears in the printed output.

11   FILE COPY UTILITY PROGRAM

APPENDIX B

I/O ERROR MESSAGES

MESSAGE	MEANING
RPARITY	A CONDITION CODE OF 1 WAS RETURNED WHEN READING FROM THE INPUT DEVICE.
RFLAG	A CONDITION CODE OF 3 WAS RETURNED WHEN READING FROM THE INPUT DEVICE.
RFAULT	A CONDITION CODE OF 4 WAS RETURNED WHEN READING FROM THE INPUT DEVICE.
WFAULT	A CONDITION CODE OF 4 WAS RETURNED WHEN WRITING ON THE OUTPUT DEVICE.
BAD SECTOR xxxxxx	THE SPECIFIED SECTOR COULD NOT BE SUCCESSFULLY READ OR WRITTEN UPON.

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FILE COPY UTILITY PROGRAM REFERENCE MANUAL
Publication No. 40-239

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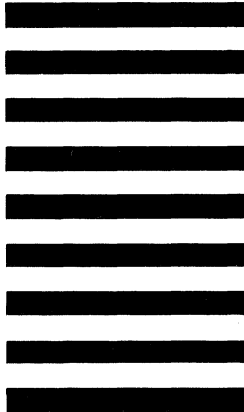
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