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SUBJECT: S&EC PERFORMANCE REQUESTS

To: Those listed

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ABSTRACT: Standard abbreviations to be used in preparing S&EC performance requests are defined in the following memorandum.

Introduction

S&EC computer operation ordinarily makes use of the following pieces of terminal equipment:

1. The read in button
2. The restart button
3. The start over button and the PC reset switches
4. The start over at 40 button
5. The upper activate (examine selector panel) button
6. The lower activate (erase) button
7. The left insertion register (insertion panel)
8. The right insertion register (selector panel)
9. The photoelectric tape reader (PETR)
10. The mechanical tape reader (MTR)
11. The stop on si 1 switch
12. The stop on si 11 and si 12 switch

Other devices, such as magnetic tape units, typewriters, etc., are also used, but in general, their use proceeds under the control of the programs being read into the computer.

S&EC performance requests provide the computer operators with a set of instructions for using this equipment. A set of standard

abbreviations for use on the performance request has been developed. These abbreviations will apply under certain conditions which will be called normal run conditions. The normal run conditions are the following:

1. The stop on si 1 switch is on.
2. The stop on si 11 and si 12 switch is on.
3. All binary tapes involved end with an spl control block.
4. All paper tapes are read in using the PETR.
5. All programs involved end by stopping the computer.

It is also convenient to define a normal (y) computer stop by the following properties.

1. The computer stops on an si 1 in test storage register 1.
2. Test storage register 2 contains the instruction sp y.

A Partial List of Standard Abbreviations

e,	Press the erase button
ri,	Press the read-in button
rs,	Press the restart button
sax,	Set the PC reset switches to x (octal) and press the start over button. If x = 40 (octal) press the start over at 40 button.
1234m5, fb 100-0-0 fc 100-0-0 fp 100-0-0	Place the corresponding tape in the PETR.

The Read In Button

Pressing the read-in button sets the PC to 26 (decimal), 32 (octal), and starts the computer. This is the starting address of the test storage input program which block records MCM on gp 0 of the auxiliary drum and block reads group 11 of the auxiliary drum into MCM. Group 11 contains the utility control program to which computer control is now transferred.

The utility control program selects a particular utility program. The selected program usually reads in a paper tape using the PETR.

Binary tapes are read in by the binary input program. A normal (y) stop, where y is the starting address of the program (i.e., the address

contained in the final sp control block on the tape), occurs after read-in provided that the stop on si 1 switch is on and the final control block on the tape is an sp 1 control block. If the stop on si 1 switch is off or if the final control block is an sp 2 control block, then computer control is immediately transferred to the starting address of the program. In the latter case this transfer of control occurs irrespective of the si 1 switch.

CS2 flexo tapes are read in by the CS2 conversion program. A normal (y) stop, where y is the starting address of the program (i.e., the address contained in the final START AT block on the tape), occurs after read-in provided that the stop on si 1 switch is on. If the stop on si 1 switch is off, then computer control is immediately transferred to the starting address of the program.

Post-mortem request tapes are read in by the generalized post-mortem program. After the request tape has been read in and executed, MCM is restored to its contents prior to read-in and the computer is stopped.

The Erase Button

If the erase button has been pushed the utility control program records +0 in all registers of group 0 before reading in a tape. This is done, however, only if erasure of storage has a valid meaning for the selected utility program. For example, one can erase storage and read in a binary tape but one cannot erase storage and read in a post-mortem request tape.

The erase button must be pushed before each read-in at which erasure is desired.

The Restart Button

If the computer has been stopped with the PC containing x(octal), then pushing the restart button starts the computer at register x+1.

Thus, pushing the restart button after a normal (y) stop transfers computer control to the starting address of the program since this starts the computer at test storage register 2. In particular, this can be done immediately after read-in of a binary or CS2 flexo tape.

The Start Over Button

Pressing the start over button resets the PC to the octal address contained in the PC reset switches and starts the computer at this address.

The Start Over at 40 Button

Pressing the start over at 40 button starts the computer at register 40 (octal).

Examples

- 1) Single operation after single read in
 - a) e, 1234m5, ri, rs,
 - b) e, fb100-0-0, ri, rs,
 - c) e, fc100-0-0, ri, rs,
- 2) Single operation after multiple read in
 - a) e, fb100-0-0, ri, fb100-0-1, ri, rs,
 - b) e, fc100-0-0, ri, fc100-0-1, ri, rs,
 - c) e, fb100-0-0, ri, fc100-0-1, ri, rs,

Dependent CS Flexo Tapes

CS tapes can be dependent or independent with respect to conversion and read in. They are independent if no cross-references of floating addresses, preset parameters, etc. occur.

Independent CS flexo tapes may be read in separately.

Dependent CS flexo tapes must be read in as if they were a single tape. Dependence of CS flexo tapes will be denoted on the performance request by writing a right hand parenthesis following each tape title in the dependent set.

Examples

- 1) Single operation after single read in

e, fc100-0-0), fc100-0-1), ri, rs
- 2) Single operation after multiple read in

e, fc100-0-0), fc100-0-1), ri,
fc100-0-3), fc100-0-4), ri, rs,

Conversion to Binary

In certain cases the programmer will require that a binary version of a set of CS flexo tapes be produced during conversion and read in. This will be indicated on the performance request by writing ric in place of ri.

For example:

e, fc100-0-0), fc100-0-1), ric, rs,

Post-Mortem Request Tapes

In requesting post-mortems by means of post-mortem request tapes it is not necessary to restart after read-in since the request is executed before the computer is stopped.

For example:

e, fbl00-0-0, ri, rs, fpl00-0-0, ri,

In this example the post-mortem is given regardless of how the binary tape operates. If a post-mortem is required only after an alarm occurs, this information must be indicated on the performance request.

Multiple Operation after Read-In

If a programmer desires to operate a particular program several times this can be indicated on the performance request by the abbreviations rs and sa x.

For example, if the starting address of the program were x(octal) and it was to be operated four times, then the performance request could be written as

e, fbl00-0-0, ri, rs, sa x, sa x, sa x,

If the above program stops in register y and register y+1 contains the instruction sp x the performance request could be written as

e, fbl00-0-0, ri, rs, rs, rs, rs,

Non-Normal Operation

1) If the si 1 switch is off the computer will not stop after executing the instruction si 1. In particular this means that the normal stop after read in does not occur and that the restart after read in should be omitted from the performance request.

2) The situation is the same if a binary tape ending with an sp 2 control block is read in.

3) It is frequently convenient to end a program by using the instruction sp 26 (decimal) which transfers control to the test storage input program and reads in a new tape. In this case the programmer should specify on the performance request that the next tape be placed in the PETR before operating the previous program and omit the ri instruction for the next tape. For example, if the tape fbl00-0-0 ends in an sp 26 the performance request should be

e, fbl00-0-0, ri, fbl00-0-1, rs, rs,

The ri erases MCM and reads in fbl00-0-0. The first rs operates fbl00-0-0 which ends by reading in fbl00-0-1. The second rs operates fbl00-0-1.

The general effect of non-normal operation is to decrease the length of the performance request.

The Utility Control Program

The use of the utility control program is initiated by pressing the read-in button. The mode of operation of the utility control program is determined by the settings of the following devices:

- 1) The examine selector panel button
- 2) The erase button
- 3) The selector panel
- 4) The insertion panel

If the examine selector panel button has not been pushed or if the examine selector panel button has been pushed and the selector panel contains +0, then the utility control program assumes that a paper tape will be read in using the PETR (automatic mode).

If the examine selector panel has been pushed the utility control program examines the contents of the selector panel and the insertion panel and selects a particular utility program as a function of their contents (manual mode).

The following standard abbreviations should be used on performance requests to specify the contents of the selector and insertion panels.

rm x Set the selector panel to x(octal) and
 push the examine selector panel button.

lm y Set the insertion panel to y(octal).

The general manual mode can thus be specified by writing

lm y, rm x, ri,

on the performance request.

A description of the various utility programs obtained by specializing the values of y and x will be found in DCL-22.¹

1. For example, the combination rm 3, ri, records a stop character on magnetic tape unit 3 and the combination rm 44, ri, produces a scope post-mortem.

Distribution List:

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