12-bit words (CCPU)

Programming Staff Note 38 December 14, 1964

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SUBJ: Internal Modifications to SAVE Command

Purpose

Modifications will be made to the SAVE command for two reasons: (1) to provide the ability to save and restart chains of commands, (2) to meet the requirements of the new disk routines. These modifications will probably be made when the new disk routines are incorporated into the system.

I. Requirements for Saving and Restarting a Chain of Commands

SAVEing a process should save any information that may be necessary in order to restart the program as though no interruption had occurred. Therefore the SAVE command must include all information such as status of chain of commands, common file switch, and user's options. Due to the present implementation of the command buffer and command counter, there must be a double set of registers, since they may be destroyed by the SAVE command itself before they can be saved. Furthermore, because conflicts may arise when several users are saved in the same common file, it must be possible to store into the user's file directory whatever information is created by the saving process, primarily the SAVED file.

On the other hand, restarting a process should be under control of several options, as the user may or may not want to enter new arguments into the command buffer, ignore some conditions such as the common file switching, or the status of the chain of commands at the time of saving.

According to those previous requirements, the following modifications must be made:

A) The SAVE command must save the following:
   1) command list (5 command buffers)
   2) common file switch
   3) copy of the current command buffer
   4) copy of the command location counter (CLC)

B) New commands must be implemented:
   MYSAVE = SAVE but creates the SAVED file in the user's file directory.
   RECALL = RESTØR and also restores the command list and common file switch.
   RSTART = START and also restores the current command buffer and CLC from their copies.
   CØNTIN = RECALL + RSTART. This command will RESUME a chain of commands.

C) The updating of the copies of the current command buffer and command location counter must be performed at appropriate places throughout the system.

viz. At the initiation of every command except SAVE, MYSAVE and RSTART and in user subroutines SETCLC and NEXCOM.

D) The only remaining requirement set down in CC-238, the saving, renaming, and restoring of certain temporary files of the form ..00n SAVED, has been incorporated into 2 separate CORE B commands:
   1) SAVFIL ALPHA saves and renames the files in question and appends their new names to the file ALPHA SAVED.
   2) RERUN ALPHA restores these files.

II. Modifications Required for the New Disk Routines

A. Change calling sequences to disk routines.
B. Change format of saved file as follows:
   1) The original part of the file (table of machine conditions and core B image) will be left intact.
   2) The rest of the file will consist of an arbitrary number of blocks of information, in arbitrary order, each preceded by a control word containing a 3-character BCD identifier and a 15-bit word count. This format is more flexible than the present (which has neither identifiers nor word counts for these blocks) and allows both the addition of new blocks and lengthening of old ones, without obsoleting any previous SAVED files.

   The new format will include the following blocks (with identifiers)
   DSK - active disk file status table
   OPT - user options (such as LINEN$, TSSFSW)
   C$M - command chain information
   TEM - saving of temporary files (from SAVFIL)
   3) SAVED files created in the present system will be compatible with the new disk routines under the following conditions:
      - disk files status will not be restored, i.e. no file can be reopened.
      - TSS files switch not restored (if it was on)
      - Line numbering and AUTO-MANUAL switch not restored. (Used only by the INPUT-EDIT command)

   The conversion from the old to the new format (both will be published) may be done by any interested user, but as this also involves a conversion of the active file status table, it was not considered worth incorporating into the present system.

C. Finally, ENDLOG (automatic LOGOUT) will be moved to the SAV module where it will consist of the chain

MYSAVE	LOGOUT
$TOLOG	(OTOLOG will be a private "SYSTEM only" entry to the Core B command LOGOUT, which will ship the normal deletion of temporary files).