

PS/8 AND OS/8 NEWSLETTER

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DECUS SPRING SYMPOSIUM '72

The preliminary program for the Spring meeting indicates a busy schedule, May 11-13, at the Parker House in Boston. It looks as though most of Saturday will be devoted to PS/8 - OS/8 meetings and workshops. Unfortunately some serious conflicts have been built into the schedule. Many PS/8 - OS/8 users will be interested in the announcements to be made at the commercial products line panel and workshop. There are also small computer papers conflicting with our meetings. Efforts have been initiated to reduce the impact of the conflicts however. The Symposium seems to be getting just too big for three days. It looks like this is going to be one of the most productive and interesting meetings in the series. I hope many of you can make it.

OS/8

The new release of PS/8 is now available from the library. The name has officially become OS/8. I have tried it and there don't seem to be any major changes from PS/8. Outside of correcting bugs and adding 2 page device handler capabilities, the main difference is the addition of a program called BUILD. It allows you to configure your system interactively. Device handlers may now be written individually in a standard format and inserted with BUILD as desired. BUILD also can be used to maintain a record of what the system configuration is for reference.

To compliment this capability a /Y option has been added to PIP. It can copy the system area into a file or visa-versa. This allows you to have different system configurations saved in files and to install any one you want. You can also create a new system tape or disk with it.

Another addition of interest is garbage collection in EDIT. The PS/8 version of EDIT could not recover the working space that deleting text made available. The new version recovers all the free space you make. This makes moving text in large files easier.

The new system costs \$300 but registered owners of PS/8 are getting a credit equal to the \$120 they paid for it. The source tapes of PAL, FCRT, SABR and so on cost more than the equivalent PS/8 tapes. The library does not list a source tape for the system proper (OS/8, Command Decoder and so on). This, and the source for BUILD are hard to get. Perhaps someone from DEC will be able to talk about this situation at the Spring Symposium.

It looks as though DEC will support PS/8 for some time for those who do not want to go to the new release.

SYSTEM ADDITIONS

I have been told that DEC is probably going to release a version of SRCCOM (source file comparison) and a version of TECO that is compatible with PDP-10 TECO some time soon. (TECO is the very sophisticated text editor that runs on the PDP-10.) They may also make available PIP-10 for doing file interchange between PS/8 and PDP-10 tapes.

FROM OMSI

Rusty Whitney at OMSI called to remind me that, in addition to PS/8 FOCAL, they have a version of TECO available as well as a PS/8 compatible version of EDUSystem-30 BASIC. This BASIC cannot access PS/8 files (except that you can fake a file that looks like the one DATA statements create) but it stores programs on the system device and it edits, compiles and runs from the system device. The standard EDUSystem-30 supports a fairly advanced batch type operation for input from optical mark sense cards. The system was designed by DEC for use in schools where many students submit jobs on decks of mark sense cards. It has an extensive protection system using passwords and protected commands. Rusty tells me that if PS/8 EDUSystem-30 is submitted it will probably not include the batch capability. As modified by OMSI the system runs very fast on a DECTape system.

DETAPE-LINCTAPE-PAPER TAPE CONVERSION

More and more it is becoming evident how much of a problem the three different media for PS/8 - OS/8 program interchange are. So far DECUS is not in a position to convert program materials from one media to another.

An example of how important this is is DECUS 12-48 by C. Moore at Rice University. It contains a whole collection of routines that are useful on any PS/8 - OS/8 system. NAMES allows FORTRAN program to call the command decoder for I/O specifications, LFILE will look up a file and return its

starting block number, etc., etc. There is a set of routines that can be used for TTY I/O in place of the standard I/O package. It saves several pages when you only need limited I/O. Unfortunately 12-48 is only available on LINCtape. No one except PDP-12 users can use it.

Kurt Metzgar has offered to help do the required conversions on his LINC-8 which he has modified to give a general tape conversion capability. People who can get time on a PDP-12 with the TC12-F option can do the conversion themselves. (See program JATC12-F in the first PS/8 Newsletter.)

I hope DECUS will be able to establish the means to do the conversions. It would eliminate all the running around now required. PS/3 - OS/8 has brought the incompatible media problem into sharp focus. Up until now the different media were used with incompatible programming systems and file formats so that there was little interest in conversions, but now we really need them.

Many PDP-12 users are going over to PS/8 as they find out how good it is and how much faster and more flexible PS/8 FORTRAN is compared to FOCAL-12, the only supported high level language available under their IAP6-DIAL programming system. This will guarantee a continuing need for conversion capabilities.

LINC-8 PS/8 ?

I have heard from several locations that are interested in running PS/8 on a LINC-8. So far I know of one location that has a non-systems device handler that uses one page in field zero plus the last page in field 2 (12K required) and assumes some sort of disk as the system device. I don't know if it can be modified to be a normal two page handler for an 8K system. These people are trying to write a system device handler for the LINC-8 tape so that you would not need a disk for the system device. It would probably have restrictions rather like the TD8e handlers (12K or a small ROM if you could get one programmed suitably). Is anyone else interested?

NEW HANDLERS

Since the last newsletter I have heard about the following device handlers:

- PT08F (remote teletype)
- MOHAWK printer
- CM8/I mark sense card reader for EDUsystem-30 format mark sense cards.
- TTY output handler which formats form feeds correctly on the ASR/KSR 33 teletypes.
- Versitec 200 printer.
- Kliensmidt printer
- LINC-8 tape (non-system device 12K - see article on LINC-8, PS/8).

FORTTRAN

The following FORTRAN subroutines have turned up:

- PECTape driver (3 pages)
- Tektronix 4002 graphics driver
- KV8 driver
- 2741 (Selectric) driver
- COMPLT (See DECUS 12-70 note)
- Integer IOH package to save space when floating point I/O not needed.
- FLINK - Fast Link - makes possible great speed increases when chaining between programs on a tape system - typically 1-2 seconds instead of 30 seconds. Developed for a network analysis program that has to go in about 15 segments for 8K PS/8 FORTRAN.
- LIST - File formater and lister
- GOPEW - Subroutine to replace IOPEN, OOPEN AND OCLOSE with similar routines that can accept file name extension specifications (normally you can only access .DA files)
- RDBLK, WRBLK - Block oriented I/O.

NEW PROGRAMS IN LIBRARY

- 8-472 PS8IN, PS8OUT - A 2 page package to give character oriented I/O to PS/8 files and devices. It calls the Command Decoder when required, opens the files, closes the output when you give it a control-Z, will accept several files in the input list, and exits to the monitor after closing the output file, all automatically. It makes PS/8 file I/O very convenient where it is applicable. For input only you can use PS8IN alone in just one page (plus buffer space of course).
- 8-473 DTA, DECLAB, CHANGE, REMOVE, & LIST -- See last newsletter.
- 8-474 EXIT PS/8 - exits from PS/8 - loads BINARY LOADER in field one and a bootstrap to restart system and will rewind all the DECTapes. The binary loader can handle high or low speed input without setting bit zero of the switch register.
- 8-475 PIP Q - See last newsletter.
- 8-476 LOG package - See last newsletter.
- 8-478 MONITOR COMMAND EXTENSIONS IN PS/8 - This is a follow on development from the author of 8-476, John Covert. It gives a user expandable system. You can add monitor commands at will. John has included the following monitor commands in the package:

LOGON, KJOB and OFF --- Optional
COMPILE - compile/assemble PAL, FORTRAN, SABR and
other languages as processors become available.
FILES - copy a list of files on or off the system
device without changing the dates.
CREATE and EDIT (and KVEDIT)
DELETE
RENAME and CHANGE
DIRECT (List directories on a KV8/I scope).

12-70 COMPLT - A "SABR-ized" version of the DECUS 8-168 Calcomp plotting package for incremental plotters. Callable from FORTRAN and SABR. Nine pages plus most of the free locations on page 0. Includes PLOT, ALPHA, DLTR, AXIS, NUMBER, DSYM, and LINE which are all approximately like similar routines on bigger computers.

WORK BEING DONE

A FORTRAN callable graphics package for the FDP-12 scope. Said to be even better than the package in DECUS 12-48.

A batch capability for PS/8. Causes input to command decoder and the MONITOR to be taken from a file on the system device. This allows you to create a file that will cause a series of jobs to be executed without operator intervention. Expected to include a routine to build the command file from a stack of cards in a card reader.

An interrupt package for SABR-FORTRAN. No details yet.

OTHER GOODIES

FPLO for PFOCAL - adaptation of the DECUS 8-168 Calcomp plotter package to work in PS/8 FOCAL. Package also gives capability to execute machine language instructions. Requires 12K but might be adaptable to 8K.

FADC for PFOCAL - a patch to PS/8 FOCAL to access the PDP-12 Analog-to-Digital converter through the FADC function.

LODSK - Load the disk with a system.

PS/8 LISP - Expanded version of DECUS 8-102A LISP for PS/8.

A patch to PIP to take advantage of the fact that PS/8 LINCtapes actually have 3000 (octal) physical blocks rather than 2702 like DECTape. This gives some extra space on LINCtapes

A binary tape merge.

Several packages of routines to give character oriented I/C under different sets of conditions. (See DECUS 8-472 for an example)

Following is a corrected version of the DECTape bootstrap from the last newsletter:

<u>Location</u>	<u>Contents</u>
0600	7606
0601	6766
0602	6771
0603	5202
0604	5200
7754	7577
7755	7577

LOAD ADD 0600, START,
 SR = 0220, CONT, CONT, (wait for CPU to halt before each continue)
 LOAD ADD 7600, START - system bootstraps and starts

Here are two even shorter DECTape bootstraps:

From Poly Question Society (P?S)

<u>Location</u>	<u>Contents</u>
7755	7577
7615	7604
7616	6766
7617	5217

Load address 7615, set SR = 0600, hit START, when tape stops, hit stop.
 Load address 7615, set SR = 0220 hit START - system bootstraps and starts.
 This should also work with POLY BASIC and the DISK/DECTape systems.

From O.M.S.I.

<u>Location</u>	<u>Contents</u>
0600	7604
0601	6766
0602	5202
7754	7577
7755	7577

Load address 0600, START, wait for tape to stop, HLT
 Load address 0600, SR = 0220, START, wait for tape, HLT
 Load address 7600, START - system bootstraps and starts.