PS/8 - OS/8 - OS/12   NEWSLETTER

<u>NOVEMBER</u>   <u>1972</u>

Contributions and correspondence should be sent to:

>   Bob Hassinger, Coordinator
>   PS/8-OS/8-OS/12 Special Interest Group
>   c/o DECUS
>   146 Main Street
>   Maynard, Massachusetts 01754

FALL DECUS MEETING

Plans are not firm yet but we expect to have a meeting of the Special Interest
Group at the Fall DECUS meeting as in the past. I hope many of you will be
there. These meetings offer a great opportunity to exchange information and
ask questions.

DECUS SUBMISSION STANDARDS

The new library submission procedures and standards have been finalized by
DECUS. The new procedures will speed up program acceptance. Some of you may
have submitted programs recently using the old forms. DECUS will require you
to fill in the new form if your submission arrived after their cut-off date.

New programs will be accepted as is. The first people who order it will
receive a new, expanded review form. (By the way, DECUS will give a $5.00
DECUS coupon for each review form returned.) On the basis of the reviews the
program will be retained as a good program and indicated as such in the
catalog, or else it will be referred back to the author.

PS/8 FOCAL UPDATE

Most PS/8 FOCAL users should have heard by now from OMSI about the update they
have released. It is mostly a collection of small improvements. By the way,
OMSI is trying to build a directory of PS/8 users that will give a good guide
to who is using the system, what sort of equipment they have, and what they
are doing with it.

CAUTION

A couple of programs have shown up lately that work under PS/8 but have been
having trouble on OS/8 systems. The problem is that the programs assume what
device number the system will use for some particular device. When PS/8 was
built using the standard version of CONFIG this was all right because the
device numbers were always the same. If a special version of CONFIG is written

for some special device the device numbers may change. If the system is built using BUILD (this is usually the case for OS/8) you do not know anything about the device numbers that will result. The effect of all this is that your program may assume a default device number thinking it is the teletype but it could turn out to be something else like the line printer on someone else's system. Even worse, it could be a file-oriented device like DECtape. If this were the case and you started outputting to block $\emptyset$ (as you do for non-file structured devices) you could destroy everything on the tape. This hazard can be avoided by using the system the way it is documented (i.e. use the USR to get the device number with INQUIRE or FETCH using the assigned device name). In general, DEC has said that you can depend on the information in the documentation (Software Support Manual) to be compatible between versions of the system. They do not promise anything about aspects of the system which are not covered in the manuals so you may not be able to use a program written for one version with another version if it makes any assumptions not spelled out in the manual. Several cases like this have shown up already.

HOW-MUCH-CAN-YOU-DO-WITH-PS/8 DEPARTMENT

Some one is solving a 150 x 150 matrix problem in 8K with PS/8 FORTRAN.

An electronic network analysis program has been adapted to PS/8 FORTRAN. This type of program is usually quite large but through the use of files and over-lays it was made to fit in 8K.

DEC SYSTEM SOFTWARE

The new system software items mentioned in the last Newsletter (TECO, SRCCOM, BITMAP and EPIC) are finally all available and being delivered.

EPIC appears to be a collection of routines that were used to aid in the development of the FPP FORTRAN IV package. They include various facilities for looking at and editing the contents of file-oriented storage devices. This is handled better by FYLHLP (DECUS 8-445) I think. The only really good aspect of EPIC is that it defines and handles a format for reading and punching .SV files on paper tape. In the past programs had to be punched in .BN or .RL format then read and loaded by a loader program and then saved. With EPIC and its special format you can read a paper tape and EPIC will save it as a .SV format file with the correct name automatically. (The paper tape format includes the file name so this can be done.) The main value of this capability seems to be when you have a save format file that is not easily reproduced from binary tapes and you want to send it to some one on paper tape. An example is PS/8 EDUsystem-30 which has several program segments combined into one save file.

OS/8 TECO is really great. It is a very powerful text editor and string processing language. It is PDP-10 TECO compatible and it can use the PDP-12 scope if it is run on a 12. John Alderman has noted one obscure difference between OS/8 TECO and PDP-10 TECO. In PDP-10 TECO the nA command always

takes the ASCII value of the character to the right of the text buffer pointer.
In OS/8 TECO nA takes the value of the <u>n+1'th</u> character to the right of the
pointer (NOTE: n can be negative to get characters to the <u>left</u> of the pointer).
In PDP-10 TECO it is common to write the A command as 1A. To get the same
effect in OS/8 TECO you must write ∅A. This is only a problem if you are try-
ing to get a PDP-10 TECO macro working in OS/8 TECO or if you are using the
PDP-10 TECO write up to learn OS/8 TECO. The last should not be a problem now
because the new manual that comes with OS/8 TECO is better than the old PDP-10
manual.

NEW PROGRAMS IN DECUS

8-497 8BAL - Dave Kristol submitted the "final" version of 8BAL and its write
        up in September. The tape now includes a macro library builder program
        and some very nice macros such as a generalized PS/8 I/O package.

8-476 has been obsoleted in favor of 8-478 which does the same things better.

8-518 A PS/8 FORTRAN core sort.

8-531 A & B - A program which simulates a PDP-8 with a 36 bit wide accumula-
        tor. Useful for triple precision integer work.

8-536 A PS/8 version of the Advanced Averager System. LAB-8 users who have
        expanded to a PS/8 configuration will like this.

FOCAL 8-214 FDSK - A FOCAL function to do I/O on the system device for those
        who do not use OMSI PS/8 FOCAL.

FOCAL 8-227 FOCL/F - Refer to the proceedings of the SPRING 1972 DECUS
        Symposium. This is a new alternative to PS/8 FOCAL. It has several
        unique features including the ability to handle special I/O devices
        and service interrupts directly in FOCAL (rather than as special PAL
        coded overlays).

PROGRAMS SUBMITTED TO DECUS

DISORT - A routine to sort a PS/8 device directory and output an alphabeti-
        cally ordered list of the entries in the directory. This is handy when
        you have a large disk with many files.

MTA - This is a new version of the DECUS 8-391 Mag tape handler. Roger
        Seeman seems to have solved the problem that people have been having
        with the original MTA handler.

PROGRAMS CIRCULATING (NOT IN DECUS)

SPIP - The program to transfer all the files with some file name extension or
all the files with a particular file name and any extension or even all
files is working. It is not being submitted to DECUS however. Contact
the author: Dave Kristol, 462 Green Street, Apartment 7, Cambridge,
Mass. 02138 for further details. Note that SPIP can squish all the
files from one device on to another device without first deleting all
the old files on the output device. A fast scheme for DECtape transfers
is included.

EXPIP - A somewhat similar program to transfer files between devices without
deleting existing files. Works on all files with a particular file
name extension or all files. Also includes a fast transfer option for
DECtape transfers.

EDITCH - DECUS 8-478 includes a chainable version of PS/8 EDIT (PS/8 and OS/8
EDIT are not chainable) to implement the extended commands EDIT and
CREATE. This new program is a chainable version of EDIT that has the
same features as OS/8 EDIT. These include recovery of space created by
deleting text from the buffer and a View Command. This version of EDIT
is designed for simple overlays to allow the View Command to output to
special devices. An example for the Centronics printer is included.
Other goodies for 8-478 include NON-EAE versions of various routines
that were originally coded for EAE, a DIRECTORY command for output on
the TTY: and a new UMOUNT routine that speeds up the FILES command when
used with DECtape.

VERSITEC 300 printer handlers. This handler is applicable to any printer that
works on roll paper rather than on forms. It makes the printer look
like a line printer to the program. The IOT codes can be easily changed
for other devices such as the Teletype.

MINT - A SABR/FORTRAN callable package of subroutines to allow handling multiple
precision integers including I/O and arithmetic.

RWDF32 - A SABR/FORTRAN callable subroutine to do block oriented I/O on the
DF32 with any size blocks desired.

ISEL - A SABR/FORTRAN callable subroutine to check whether a LINC tape unit is
selected and write enabled.

MAC8 - This is 8K PS/8 MACRO. The original version mentioned sometime ago has
been debugged and expanded.

PAL12 - A modification of PAL8 to allow assembling both PDP-8 and LINC
mneumonics. It accepts very nearly pure LAP6-DIAL code. Two sample
programs are included; MARK 12 adapted to PAL12 and PS/8, and a program
to play the HANGMAN game with a scope display. Both programs demon-
strate the ability to assemble LINC mode code.

MOVE - A program to move a list of files from one device to another. The in-
put and output devices and the file names are all included in the
Keyboard Monitor command line that calls the program. i.e.,

.R MOVE DEVI: DEVO: FILE1.X1, FILE2.X2, etc.

PS/8 LISP - PS/8 LISP (based on DECUS 8-102a) has been improved and expanded.
Some examples of use are included and a set of machine language routines
are included to give more functions that are useful in a LAP assembler.

EDITS - A refresh type scope oriented editor similar to EDIT but with some
added features such as a J type search that does not output the text
searched over. Also included is an extensive collection of routines
and handlers related to refresh type scopes.

ZIP10 - A program that allows a complete PS/8 configuration (including a re-
fresh scope if you have it) to function as a terminal for PDP-10 time
sharing. You can input to the PDP-10 from PS/8 files and your output
can go to a PS/8 file or device. You can also operate directly from
the teletype as if the PDP-8 were not there.

WORK BEING DONE - NOT YET AVAILABLE

SABR/FORTRAN modules to plot and output to the KV/8 scope. Scope is assigned
as device #5. Also a routine for simplified plotting of graphs.

FUTIL - Sort of a super FYLHLP to give access to the contents of mass storage
devices with many options including relative and offset addressing,
symbolic type out, multi-word and multi-block dumps, and all the other
features you would like to have in this sort of program.

FOCAL-10 compatible version of FOCL/F. This is going to add even more
features to FOCL/F which already is a very powerful tool for advanced
programmers.

UPDATE - A secretary oriented text entry and editor program.

FOREGROUND/BACKGROUND PS/8 - Designed to do more or less the same job for PS/8
that the original Foreground/Background 8 does for the Disk Monitor
system. The hardware instruction trap ("time sharing option") is
required. It allows programs to be relocated to arbitrary fields by in-
tercepting all CDF and CIF instructions and translating the instructions
to the relocated fields. If a program is written knowing that this will
be going on (i.e. a minimum of CIF and CDF instructions) it will not be
slowed down much at all. Existing sofeware will run under this system
unchanged but some of it will be inefficient.

COMMAND DECODER BUG

Dave Kristol has found that a bug exists in all versions of Command Decoder.
If you are using the "Special Mode" of any of the released versions of
Command Decoder it will not accept the "*" character. This is suppose to be
legal in special mode and is useful in a program such as Dave's SPIP where
the * is interpreted as meaning that any name or any extension may be used in
that position. The patch to fix this can be made with FYLHLP.

Block 51 Word	PS/8 CD	OS/8 CD	HASPCD
12	51.12/1040	1040	1040
13	51.13/0076	0075	0075
14	51.14/5466	5466	5466
23	51.23/ --	--	0470
66	51.66/0513	0513	0513
Block 52 Word			
112	52.112/5012	5012	5012