

UNIVERSITY OF MINNESOTA COMPUTER CENTER

Deadstart Systems Newsletter

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NOTICE OF CHANGES TO THE OPERATING SYSTEM

This new deadstart tape marks the installation of PSR 419/420 (level 12) operating system at UCC. Corrective code for this release pertains mostly to the tape drivers (MAGNET, LMT) and to the time sharing module (TELEX, ITA). Staff members can obtain a detailed description of CDC corrective code on request from T.W. Lanzatella.

Kevin Matthews supplied the following modifications:

- a) A correction to program COPYCAT which was putting garbage in the user number field for user indices which have no user number.
- b) A repair to CPUMTR causing the program to always return the correct ECS FL. Previously, jobs which used both ECS and tapes frequently bombed for no apparent reason after encountering a LABEL card.
- c) The PP resident idle loop is now an overlay called ITL. This restructuring of PPR was used to accommodate performance measurement.

Bill Wells, presently engaged with overhauling XEDIT has provided his most recent version, XEDIT 2.1.6. The new version processes both 64 character set and ASCII character set in addition to the 63 character set.

Bill Elliott supplied a new source for the local common deck COMSEXF (used by the TAPES utility). Bill also supplied a new 66X firmware package, A09.

Bruce Johnson furnished the following modifications:

- a) A correction to the DSD R-display which was displaying garbage at one SUPIO port.
- b) Bruce added the CNDV bit to the access word of the VALIDUZ file thus allowing validation of DIVERT usage.
- c) Bruce provided new sources for the programs LPQ (Plotter driver) and LBA (card reader driver). We have been running binary versions of these programs since the inception of level 11.

Tim Salo changed the permanent file accounting messages to conform with established account file message formats. Tim also repaired a small problem in PFILES which caused the program PFILES to miss certain error conditions.

Alan Johnston changed program LTD so that all TELEX account file messages have TX as the origin code in the job name. Alan also installed an all new ECS M-display. The effects of the modification span several programs.

- a) The EFRL location is added to CMR. This location contains the contents of the ECS flag register.
- b) Delete monitor functions REWM and WEWM and upgrade function ECSM to use subfunctions defined in COMSCPS.
- c) Program SET was changed to enable flag register functions in CPUMTR.
- d) Programs 6DE and 7DE were changed to use the new subfunction codes.
- e) A new DSD M-display is added to display ECS. Also ECS change memory commands are added.
- f) Program DIS changed in the following manner:
 - 1. The old M-display (Mag tapes) is now the E-display.
 - 2. The old E-display is now the G-display.
 - 3. The new M-display (ECS) replaces the old M-display (Mag tapes).
 - 4. The P-display can now display 20 pp's and can be paged.

PROPOSED CHANGES TO THE OPERATING SYSTEM

New System Control Card SETVAL - by K. Fjelsted

Currently there are seven validus entries which I feel could be incorporated in to a SETVAL control card which would permit a user who has his password change bit set to change these validations himself. The seven validations are:

IS	Initial subsystem
RO	Rubout count
TT	Terminal type
TC	Terminal character set
PA	Terminal parity
PX	Duplex (full or half)
TM	Terminal message mode (brief or normal)

I propose that this card be limited to those who are validated to change their password so that we do not have any problems with students creating confusion. Although there is no way that anyone could cause any real harm, one could cause some confusion for users who are not familiar with the system. I also propose that a UN parameter be allowed which would work just like the UN parameter on the PASSWORD control card. Thus the control card format would appear as follows:
 SETVAL(P1,P2,P3.....Pn)
 where P1 through Pn would be any of the above parameters listed in any order.

CALLPRG Proposal - E. J. Mundstock

A feature to allow CALLPRG running on the 6400 to access a file residing on the CYBER 74 and to subsequently use the file appears to be desirable. The proposed method is to add a XM parameter to the directive file, which would cause CALLPRG to XMIT a job to pick up the file or files and SEND them back, whereupon the original job would pick up the files and purge the catalog entries.

*what if machines not up
 what if no para.*

message indication card,

The XM parameter would only be legal for the system CALLPRG index for security reasons. The overhead in CALLPRG would be small as the XM procedure would share most of the code used for magnetic tape operations. Also, a suggestion has been made for an abbreviation for WRITEUP. I have heard W, WR and WRI suggested. Any comments? Any name which does not presently exist would be trivial to implement.

ACCSTAT - by B. J. Fox

The ad-hoc committee for accounting statistics, consisting of Barry Fox, Dick Hotchkiss, Thea Hodge, Rich Franta and Mike Frisch, has approved the following ACCSTAT control card and its parameters.

ACCSTAT(L=lfm,W=width, LØ=list options,UN=alternate user number, JV=jv options, US=usage options)

Note: < default value >

L=lfm logical file name of file to receive list output.

<ØOUTPUT >

W=width Mnemonic for width of list output in columns

~~SLIM~~ *default should be wide & derive type*

SLIM 72 columns

WIDE 132 columns

LØ=list options list options specifying detail of list output

<UC >

C Dollar Cost

R Unit rate

U Units

UN=alternate user number ACCSTAT of alternate user number encompassed by user number which has *'s embedded.

<user number>

JV=jv options Journal Voucher information options

<Ø>

LF Last Fiscal year

PF Present Fiscal year

LV Last Voucher

NB Not Billed

US=usage options

Usage information options

< PM >	LY	Last Year
	PY	Present Year
	LQ	Last Quarter
	PQ	Present Quarter
	LM	Last Month
	PM	Present Month
	LA	Last Accounting

For JV and US, options are separated by /'s.

Example:

ACCSTAT (JV=LF/PF, US=LQ/PQ/LM/PM).

The defaults were selected to satisfy timesharing output.

Off-Hours Delayed Input Queue - L. A. Liddiard

On 1 July 1976, UCC has promised to give an off-hour rate reduction of 1/3 (1/4 for commercial users) for jobs started after midnight weekdays or at any time on Saturday or Sunday. The implications for the systems group are:

- 1) A parameter must be allowed on the job card which states that an entire job is to be run when the off-hour rate is in effect. Discussion topic: What should be the form of the parameter?
- 2) The operating system must know the correct time and must have at least a bit stating whether or not the system is CP time at the off-hour rate. Discussion topic: Where should this bit be in CMR or in the control point areas? The routine putting the user (account) card information into the account file must, at a minimum, add a character representing the state of the off-hour bit.
- 3) The impact of a delayed input queue on the rest of the system must be evaluated.
 - a) Since FNT space is too valuable to use to store job names on a long term basis, will there be any way of enquiring as to which jobs are in that queue? How will a user know, for example, if a job entered say, on Tuesday morning at 10:00 a.m., was brought in at midnight but had not finished by 4:00 a.m. Wednesday and was dumped and reloaded to the delayed entry queue to be run on Thursday morning?
 - b) The system routine entering the delayed entry jobs into the normal input queue must not overload the FNT table space. Thus, jobs are to be selected based on some criteria. Which of the following?
 - i) FIFO with some limit on the number of jobs in rolled status.

- ii) Largest time limit first in order to complete the largest jobs in four hours if a weekday.
- c) This sort of running should make the problem "must drop job at end of operations" come up more frequently. How can UCC avoid the loss of chargeable CP time? Should there be automatic checkpointing?

The implications for the operations group are:

- 1) Accurate entering of the date and time are essential to avoid loss of income when, for example, entering 0200 rather than 1400 for 2:00 p.m., or entering Saturday's date rather than Friday's. Note also that entering the time incorrectly may cause the FNT to start filling up after a deadstart. Semi-solution: purchase a 24 hour clock with date and fix it to the console.
- 2) What extra queue dumping and job termination procedures are required?
- 3) If systems cannot implement this by 1 July 1976, what procedures are available to do it by hand until the systems group is ready?

Delayed Input Queue Installation Details - N. L. Reddy

By some manner (a parameter on the job card or some special symbol in column 78 of the job card etc.) the user will indicate to the system that he wants to run this job during the off-hours. The I/O subsystems will assign a special priority (less than 100B) to the delayed job (all priorities under 100B are special priorities, each for a specific purpose. This priority will define the delayed input queue. Program DSD (and friends) which is responsible for updating the hour and the date will set a bit in low core after midnight. This bit will also be set during weekends. There will also be an ENABLE and DISABLE command so that the feature can be switched off after midnight. By default, the bits will be enabled. The ENABLE/DISABLE bit will be defined in the same byte as other ENABLE/DISABLE bits. The off-hour bit will be defined in the same byte along with DEBUG, ENGR and LOCK and can therefore be displayed at the top of the left display screen. At the time a delayed job enters the system, an entry will be made in the IQFT track. The operators will not see such jobs in the normal displays like Q and H. They will have to call QREC or QLIST (with which they are now familiar) to list these jobs. In this sense, the delayed queue is similar to the inactive queue defined in the system. There will be a special SUPPIO and EXPORT command to list the jobs from the delayed queue. When DSD (1DU) sets the off-hour bit, it will automatically call QREC to recover the delayed jobs. If the off-hour bit is set when a delayed job is read in, the I/O subsystem will enter the job directly into the input queue rather than the delayed queue.

CALLPRG - LIBRARY TAPE MODIFICATIONS - M. Riviere

On June 5, I made some modifications to FT3LIB on the Library Tape and to FUTURE FORTRAN in CALLPRG. By request of Michael Frisch and James Mundstock the routine SYSTEM was changed in FT3LIB to add an entry point, SYSTEM, callable by MNF programs. Michael and James also requested the records ACOS, ALOG, ALOGIO, ASIN, ATAN2, COS, COSH, SQRT and TANH on FT3LIB to be renamed as ACOS\$, ALOG\$, etc., in order to avoid possible name conflicts with already existing private users' libraries. Michael also replaced the records SYMBOL2 and PLSTSC in FT3LIB by new versions where some small errors are fixed and added a new routine, CONTUR, that is used to draw plot contours.

Michael also installed PLSTSCL under FUTURE FORTRAN.

Also on June 5 the programs VIEW and SKIPPLT were added in the CALLPRG index. VIEW was introduced as previously announced but SKIPPLT had its original name, SKIPPL modified in order to make the name more descriptive about the program's function.

On the weekend of June 12 there will be several modifications among current compilers and libraries in the Library Tape. These modifications are correlated with the end of the spring quarter.

James Mundstock is replacing MNF by its future version and leaving the current one available as PAST and as MNFOLD.

As I announced in the UCC June Newsletter, I will be removing XBASIC and BASLIB from the Library Tape and replacing the current SYSLIB by the one that is available now as FUTURE. I will, at the same time, place our current SYSLIB as a CALLPRG library, associated with RUN and RUN23 and also make it available as PAST.

As another end of the quarter change, I will also replace SYSIO and FORTRAN in the Library Tape by their future CALLPRG versions. These libraries are still level 11 libraries but have some local modifications.

Also on June 12 there will be a change in the CALLPRG index requested by John Larsen. John is changing the index cards for his programs ABCLIST, CHANGER, GETSAVE and PURGER to be four different entries to one program (PFMANIP). From the user's point of view, the accessing of these programs will be the same as it was until now, but John is making this change in order to be consistent with a change in those packages documentation. The entries for these four functions will be documented as only one WRITEUP file called PFMANIP.

In the next two weeks, but not necessarily on June 12, I will start building level 12 versions of SYSIO and FORTRAN as future CALLPRG libraries. I will also be introducing a version of FTN level 12. Also in the next two weeks I will be changing the installation texts, LDRTEXT, PFMTEXT, IPTEXT, CPCTEXT, CPUTEXT, IOTEXT and SCPTEXT by their level 12 versions.

I will be making another change on CALLPRG libraries by June 18. This will be the transferring of OLDSYS, OLDFT3 and the version of SYSLIB that is FETCH type to LB tapes. According to J. Mundstock the usage of these libraries is small enough by now to make this a desirable change. By the way, OLDSYS and OLDFT3 are libraries that contain the I/O routines that use unblocked I/O as default. The fetch type version of SYSLIB is the version that was in use when we converted to the Kronos System.

SYSTEM MAINTENANCE: People and Procedures

Bill Elliott has finished writing a users guide for his forthcoming TAPES utility. Bill would appreciate some staff commentary on the new writeup. The writeup is on a file named TAPES on YZE6046.

Letter to the Editor - D. R. Lienke

- 1) I think that the purpose of publishing proposals in the DSN includes 2 points:
 - a) Constructive criticism after reflection,
 - b) A chance for written rebuttal in a subsequent issue of the DSN.

As nearly as I can tell, neither of these worthy goals were attained for DOH's DVRT (pronounced "DVRT") in #10 DSN, since, apparently no one had much to say against the proposal and DOH and TWL (chairman) (perhaps rightly) took that lack of discussion for approval. If such is not the case, i.e., the proposal is yet standing for discussion, fine; if not, then I protest, for I have not had a chance to say my piece.

Thoughts on DVRT (pronounced "DVRT").

I think it is scandalous that no one has yet raised the issue of the choice of names for DOH's new utility. DVRT (pronounced "DVRT") and DIVERT are quite different. One has only to check our documentation to see the precedents: EXAMINE (not XMN), REWIND (not RWND), UNLOAD (not NLD...a good one that would be, eh?), DISPOSE (not DSPS), etc. Can you picture yourself explaining DVRT to someone, telling him "Oh, just use DIVERT." and he uses DIVERT only to find that it's spelled DVRT (but probably pronounced DIVERT.) Come on.

Another point. After discussing DVRT with DOH, I think that certainly the MACRO DVRT would be little used and that the control card would not be generally (i.e., by the average user) used. Consequently, it is a waste of space to allocate space for 2 control cards, viz., DVRT and NODVRT. More importantly, if the name were to be expanded to preclude confusion, i.e., DIVERT, the opposite action NODIVERT, would become too long. (The argument concerning the length of control card names will not be entered here, except to say that I favor extending the 7-character limit.)

In general I would like to see the control cards concerning Binary values (on/off, true/false, yes/no) be collected under a single set of processors such as

```
ENABLE (.....)
DISABLE (.....)
  or
ON(      )
OFF(     )
  and
TOGGLE(  )
  or
FLIP(    )
```

But that may be too much to ask and I haven't thought much about the inevitable exceptions. Therefore, something like

```
DIVERT,ON,.....,
DIVERT,OFF,.....,
```

is probably what I would settle for. I have talked to DOH and it wouldn't be much of a problem for him to change to the latter.

Another point. The keyword DIVLIM is cumbersome. Perhaps it could be shortened to DL or at least both be synonyms.

To summarize: I propose that DOH's DVRT proposal be modified so that both the control card and the macro become DIVERT with the first argument being the keywords ON or OFF, and that DIVLIM either be accompanied by or be shortened to DL.

2. A couple of suggestions from LRL/BKY that are nifty.
 - a) An option on DISPOSE to ignore carriage controls. (I still think that all the I/O packages should recognize a user - controllable bit in the system sector for such an ability. That would save lotsa "unpage" time - or do we like the thought of passing data so many times thru our processors?)
 - b) When read-only processors - e.g., CATALOG, VERIFY, etc. encounter an immediate EOI, they should rewind the offending file and try again.
3. Re ABM's notes p17 DSN #10, SPRUCE type names. I don't see anything wrong with the names themselves. Obviously, we should document programs, and, if possible, provide a way for the users to find out about them such as RTF's control writeup, an online scanner for keywords, and/or a desk-copy KWIC listing.

Re ABM PSCCODE: It's difficult to say anything about something that one can't pronounce (except maybe DVRT).

4. I note that PACKNAM was used 3281 times in May76 alone. Allowing short form P, then, could save $6 \times 3281 = 18,000$ keystrokes per month. We can utilize the space formerly allocated to NODVRT for "P". No? Well, next month....