UNIVERSITY OF MINNESOTA COMPUTER CENTER
Deadstart Systems Newsletter

22 January 1980 Vol. 6, No. 2

Send all comments, criticisms and contributions to the editor: T. W. Lanzatella
University Computer Center, 2520 Broadway Drive, Lauderdale, MN 55113.

TABLE OF CONTENTS

NOTICE OF CHANGES TO THE SYSTEM

The following changes will be installed on Thursday, 24 January.

Tom Lanzatella installed the R5 version of CVL, a PP program which is used by MALET to validate equipment access. This change is necessary because in order to support the 885 disk we have to run the R5 MALET/MLD which assumes an R5 CVL.

Kevin Matthews repaired recovery of FNT/FST entries of intermachine files in REC. Kevin also solved a bothersome problem in CALLPPU. The problem was that numerous 7-type errors occurred whenever CALLPPU was assembled because addresses exceeded 10000B. The problem was solved by redefining the ENDX macro (in CALLPPU) to do an ORG 0. Credit JJD with this solution. Kevin also repaired some local code in ISF which caused the package to bomb whenever VALIDUZ was not defined.

Don Mears corrected a long-standing error where deferred - routed output files would only sporadically print when routed from a submit job. Don also reinstated proper behavior of the T option on the RUN command in the EXECUTE subsystem. This broke after the subsystem names changed.

Tim Hoffmann installed the following changes.

1) Two character set-related problems in SIMTALK were repaired.

2) Control statement limit processing in 1AJ was fixed to not put out a blank dayfile message.

3) Extraneous TRN error processing in ROUTE was removed.

4) A significant change was made to the way P0 and P1 jobs are controlled.
   a) The indication of large job and low rate status was moved to the E,P-display.
   b) The ENABLE/DISABLE LOWRATE command used to determine whether or not lowrate accounting was in effect. Now the command controls the movement of jobs from the IQFT into the INPUT queue subject to LOWRATE status. This means that operations can control the execution of P0 jobs with the ENABLE/DISABLE LOWRATE command even during lowrate hours. The facility is disabled by default. The LOWRATE IPRDECK command was removed.
   c) The LARGE JOB DSD command was removed. Instead, the ENABLE/DISABLE LARGE JOBS command is used to control execution of P1 jobs. This facility is disabled by default.
   d) The new ENABLE/DISABLE DELAYQ command along with the new IPRDECK entry DELAYQ controls the queuing/dequeuing of P1 and P0 jobs by QREC.

Jeff Drummond changed PACK to use a very fast, single buffer copy routine and reinstated the ability to pack I-format tapes. Jeff also updated external documentation in SEND and fixed TRANSIT to be more graceful with down machines.

Brad Blasing converted the PFPACK utility from NOS R3. The USAGE command in DSDSIM which has not worked since KRONOS was finally fixed and the DSDSIM E,T-display will now display idle tape drives.

PROPOSED CHANGES TO THE SYSTEM

LIBRARY RESHUFFLING, ADDITIONAL COMMENTS - by M. Frisch

Since there was not formal discussion at the last Systems Meeting (Tom Lanzatella, Marisa Riviere and I had agreed it would be delayed until the January 24 meeting), I've decided to add a few comments to what was written in the last DSN.

1) One important difference between my proposal and Marisa's is the format of the FETCH statement. Hers reads:

   FETCH,library/V= compiler.

   while mine reads:

   FETCH,library/compiler.

   The advantage of Marisa's is that if we ever decide to add more parameters after the slash, they will be easier to add to hers. Mine is slightly easier to use. However, it doesn't matter to me which the Systems group decides upon.

2) Betty Hinkley pointed out to me that under the MNFTS or FORTRAN subsystems, a user of one of the libraries should expect that FETCH,library. with no compiler specified will give MNF by default, since those subsystems are only MNF-compatible. (My proposal specified the default to be FTN.) Betty's suggestion would require that CALLPRG recognize the subsystem from which the user made the request.

3) In addition to the article I wrote for the newsletter, I plan to augment it with further information and make it a writeup. The additions will include

discussion of special uses and more examples. When the project is further along, I plan to announce availability of libraries for M77, PASCAL and FTN5. I didn't discuss them in the article because there was already enough information for users to digest.

4. Marisa's point No. 1 (P. 8 of DSN, Vol. 6, No. 1), describing problems when some forms of CALLPRG library entries aren't available, is rather complex. Instead, I propose that all libraries have a complete set of CALLPRG entries. For a library that is not in the system, the usual message will be issued ("file - NOT IN SYSTEM").

5. Marisa's point No. 2 (P. 8 again), describing how PAST and FUTURE versions of libraries should be handled, is also complex. However, the ad hoc libraries committee was where it originated. I intend to minimize problems by avoiding use of PAST or FUTURE versions of libraries whenever possible. A thought I came up with to replace Marisa's scheme is when building a (say) PAST version of IMSL, pulling out the PAST versions of routines from the IOL files and putting them in separate files. By using load order, I can cause this separate file to be searched first. A sample CALLPRG entry would be:

   IMSL,TY=PAST,V=MNF,UL=IMSL+IMSLIOL+MNFIOL,...

   where IMSLIOL contains routines from the past version of IMSL in MNFIOL. The PAST version of UERTST would be found in IMSLIOL so the duplicate copy of the current version in MNFIOL would never be seen. The advantage of my scheme is it minimizes the number of exceptional cases that CALLPRG has to handle, at the expense of hiding things from users a little.

6. Marisa's point No. 3 (P. 9) discusses what should be done if

   FETCH,MINNLIB/V=FTN.

   FETCH,MINNLIB/V=MNF.

   are used. I feel that we should warn users in the documentation rather than to try to do anything about this situation in software. Marisa also considers changing the search order when libraries are added to the LDSET block, but I prefer the present order of new libraries being added at the end of the block.

7. Last of all, Marisa's point No. 4 (PP. 9-10) discusses problems when (say)

   FETCH,FEMPAC,IMSL/V=MNF.

   is used. FEMPAC has no MNF version (it's a set of overlays) but IMSL does. My recommendation is either to not allow more than one item in a FETCH statement, or else let CALLPRG diagnose the problem in its usual way (here, "FEMPAC - NOT IN SYSTEM" would be the message issued).

//////////

KNOW WHAT YOU'VE PRUGED - by J. W. Vogel

I suggest that the PURGE control command be modified to tell you what you have just purged. A message as simple as "STALIN PURGED" would forestall a complete

disaster if you had intended to purge STALIN2 but the insensitivity of the keyboard caused the "2" to fail to register.

//////////

MOVING ON - by B. E. Blasing

Currently, when a PPU hangs (either on a channel or on a monitor function), the entire system quickly hangs up trying to storage move the control point (which cannot move since it has a nonpausing PPU attached). When this occurs, all activity ceases and the scopes blank if a DIS was up. I am proposing to add code to MTR et. al., which will time-out storage move requests such that if they do not complete within 5 seconds (an arbitrary constant) the request will be aborted and the control point declared hung. The following then happens:

1) Byte 3 of word 43b of the control point is set to indicate control point hung.

2) A blinky message will appear at the control point: "JOB HUNG ON PPU."

3) 1SJ will schedule jobs around the hung control point (in a degraded mode).

4) The scopes will unblank if DIS happened to be up.

The hung status will clear atuomatically if the PPU becomes unhung or can be cleared manually via a "n.GO." The fact that the system becomes unhung does not mean the problem can be ignored; it means that activity can continue while the problem is being corrected and users can save files (if properly warned) if a deadstart is required.

//////////

THE COPYU PROPOSAL - by J. J. Drummond

I would like to propose a number of changes to the COPYU utility, as follows:

1) Add an option to select 8 lines per inch. This would allow up to 25% in paper savings for listings. Since COPYU has a position-dependant parameter list the usual equivalenced option (PD=8 or just PD) would be inappropriate. Instead, I propose to add it to the list of options already available. Specifying the character '8' in the list of options would select 8 lines per inch ('T' might be more appropriate, but it is already in use). For example:

```
COPYU(LIST,OUTPUT,,,N1X8,***)
```

would copy the file 'LIST' to 'OUTPUT', shifting and numbering the lines; with a page eject at each record mark; at 8 lines per inch; and with statistics displayed in the dayfile. If the '8' is not specified, the default is 6 lines per inch. Currently, there is no default and the listing prints at the density previously selected on the file (if any) which defaults to 6 lines per inch.

2) Add an option to select auto-page eject. This option causes the printer to eject before reaching the bottom of the page. I propose to add an 'R'

to the list of options (as with the '8' above) to select the auto-page eject ('R' is chosen because that is the actual carriage control character used to select this feature). If not specified, the default would be to suppress auto-page eject. As with the print density, there is no current default and a prior selection on the print file (if any) remains in effect.

3) Update the COPYU documentation (and dayfile messages) and change the terminology used to conform to other UCC packages. A number of new and existing UCC products use a different set of terms (e.g., "line" instead of "unit record") and I think that COPYU should be changed to conform to this trend.

SYSTEM MAINTENANCE: People and Procedures

Last Weeks Systems Group Meeting - by T. W. Lanzatella

The following proposals were discussed.

1) Don Mear's proposal to install a form of central site diverting where all output files above a certain limit would be given a special forms code was approved (see DSN 5,24 P 199).

2) Kevin Matthews proposal to install his rewritten version of DSP was approved (see DSN 6,1 P. 14).

Larry Liddiard discussed the new P1 job class. A predominant concern among some staff members was that the rates for P1 jobs would eventually cause us to loose revenue because of users switching to P1 from P0. Larry theorized that if all P0 jobs switched to P1 we could loose up to $5K per month. This however would be (hopefully) more than offset by the added business that the P1 rate would draw.

Larry stressed that once the use of P1 is documented and understood by operations and systems then it should be well publicized. Several action items were identified regarding the installation of P1.

1) CHKPT should be enhanced to checkpoint ECS.

2) Someone should teach a course on the use of CHKPT/RESTART.

3) We have to gain a better understanding of file treatment by CHKPT - particularly random files.

4) We have not sufficiently publicized the no refund policy for P1 jobs.

Larry mentioned that a communications committee has been formed by UCC senior staff to study the future of communications.

//////////

SOFTWARE MAF - by J. Sell

Operations is implementing a software request form which we are calling a software MAF. The form will be used to call attention to and/or request programmer action in the following areas: 1) a bug in the system, 2) a modification to an existing feature of the system and 3) the addition of a new feature to the system.

Software MAF's will be forwarded to Tom Lanzatella who will review and route the request to the appropriate person. The rationale behind this procedure is that Tom is better informed than Operations as to who the appropriate person would always be. A copy of the original request will be kept by Operations and copies of completed requests will go to both Operations and Systems. As needed, Systems and Operations will meet to review the status of outstanding requests.

As a written record, the software MAF's should make it easier for both groups to remember what requests have been made. It will also be easier to assign priorities to these requests. They will probably also help the left hand keep better informed as to what the right hand is doing within each group.

Cyber Deadstart Dump Analysis from Monday, 7 January - Friday, 18 January - by K. C. Matthews

Thursday, 10 January

02:17 (DD2014) Cyber 172
An ECS error was reported by CPUMTR. A level 3 deadstart was successful.

Friday, 11 January

10:30 Both Machines
ECS failed solidly. The eingineers repaired the problem and level 0 deadstarts were performed at 10:55.

Thursday, 17 January

04:16 (DO2015) Cyber 172
The left display went blank when MAGNET was being dropped for the night. There might be a small DSD-Magnet communication problem for the DSD preview display. Jeff Drummond is investigating.

//////////

Cyber 170-720 Deadstart Dump Analysis (1/7-1/20) - by R. A. Williams

Date	Description	Tape
800110	TELEX aborted several times with a MUX malfunction. Some electrical work seems to have been the cause.	Fixed
800111	ECS errors caused the system to go down. Procedures for disabling ECS changed with NOS and weren't documented so the wrong method had been used.	Fixed
800112	An ECS error put the system in step mode. The operator had to deadstart.	Fixed

//////////

TELEX and TELEX PDP11 Crash Analysis (12/26-1/20) - by D. W. Mears

There were several PDP11 problems relating to our attempt to install a new DH11 compatable MUX manufactured by Rianda Electronics in the TELEX PDP11. The diagnostics would always run fine, but the production system would always

crash or hang. By the time we had given up on the new MUX we had found two things broken and two design errors in the MUX. The people at Rianda seemed very cooperative. They had fixed the two things that were broken and one of the design problems by the time we gave up on them.

1/4 0800 TELEX on C74 came up 20 minutes late due to work on new MUX.

1/5 00:00 TELEX on the C74 was to be taken down so Field Engineering and Rianda could work on the new MUX. Due to communications problems between Field Engineering, Systems, and Operations, TELEX was taken down on both machines, and due to other problems a level 0 had to be done to get TELEX on the C172 up again.

1/6 16:30 - 1830 The PDP11 crashed 3 times and TELEX was stopped twice on both machines before we discovered that all the problems were caused by the new MUX. The problems first appeared to be software related, then link related. It turned out that the MUX was doing things to the PDP 11 unibus which caused the link on the C172 to appear to be broken (the link was really o.k.).

1/20 21:13 When the C74 was brought up, the operators reloaded the TELEX PDP11 even though it was already up and running on the C172. This caused TELEX on the C172 to put out a blinky message and off the equipment in the EST. The operators then stopped TELEX, brought it up again, stopped TELEX again, turned the equipments on in the EST, and then brought TELEX up again. Then everything was o.k.