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NOTICE OF CHANGES TO THE SYSTEM

Kevin Matthews formally installed the proposed TRACKS command (see DSN 3, 15 p. 4). We have actually been using the TRACKS command since the last new system. Kevin also repaired a bug in mass storage initialize which appeared only after a certain number of disk equipments had been defined.

Marisa Riviere repaired two bugs in a very thorny area of CALLPRG. For some time, MERITSS users have noted that access requests for XMIT-type CALLPRG files are sometimes never completed. Marisa discovered that this problem was occasionally caused by a prior access request which had been aborted (interrupted) by the user. Similarly, some jobs meant to run on the 6400 when a user aborts a CALLPRG request were simply running to time limit by rolling in and out, never completing their intended task, i.e., to purge the retrieved file. Marisa discovered that both of the bugs were rooted in CALLPRG interrupt processing.

Jeff Drummond contributed the following changes.

1. Copywrites (U of M) were added to most of the locally written console games (LIFE, STARWAR).
2. DDFILE (the CP portion of DDF) may now be called only by a SYOT user.
3. ECS handling in CPUMTR was extended again in preparation for the coming XMIT/SEND.

Brian Hanson installed his proposed change to CATALOG which now reports the ENDS/HHA field values along with entry points (see DSN 3, 15 p. 2).

Tim Salo delivered a new source version of LOADPDP, previously an entry point to SUPPIO, now a stand-alone program. Tim also added a new file type (ASFT) to accommodate coming changes for the 512 printer. Along with this new file type, an additional new file type was added by Jeff Drummond for the new XMIT/SEND. The additional file type is not needed yet but new file types should be added as seldom as possible so as to reduce user anxiety. Tim also installed a new version of the famous ROUTE mod. Mod ROUTE contains the code necessary to install both DIVERT and DISPOSE. Being of a formidable size, the mod was broken into three chunks, ROUTEA, ROUTEB and ROUTEC.

Bill Wells contributed the future version of XEDIT as a new deadstart tape resident program, replacing current XEDIT (as announced in the UCC Newsletter).

The loaders are also changing formally with this new system. Both LINK and the CYBER LOADER now observe the ENDS/HHA field values. Take a look at the writeup MEMORY for complete details.

PROPOSED CHANGES TO THE SYSTEM

Since When Is Purge Not Write?? - by W. Kaercher

CDC documentation declares that a direct access file is interlocked, so that it is impossible for more than one job to be writing the file at any particular moment (with a few bizarre exceptions). This interlock scheme is desirable in that when one job is reading the file (assuming that M=R), another job may not access in WRITE mode. The direct access file may, however, be purged at any time without regard to other jobs using the file or their mode of attachment (even M=W)! This seems to be a rather gross oversight in view of the very nature of a direct access file. It would seem far more consistent for PFM only to purge a direct access file (which is in effect a totally destructive write) under the same constraints as WRITE mode attachment would be allowed. (i.e., If one cannot be allowed WRITE mode attachment due to another job's attachment, it seems strange that one is still allowed to purge, even if another job is writing on the file.)

It is in this spirit that it is proposed that PFM be modified to return a file busy error code in any case where a purge is attempted by a job which could not at that moment obtain a WRITE mode attachment. The NA option could be used to let PFM go ahead and bash the file anyway like it does now.

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SYSTEXT Absolute Origin Address - by W. Kaercher

With the addition of the Cyber loader, there is some confusion as to what address absolute programs should be originated at. To avoid possible destruction of the first few locations loaded, an addition to SYSTEXT is proposed which will define the absolute origin address for coding CP programs (similar to what now exists for PP main routines). The tag CPFW is proposed with value 110B. This will allow enough room for any Cyber loader or COMPASS generated absolute tables. If one desires multiple entry points, one may simply org to CPFW+N, where N is the number of entry points specified.

SYSG.com

NOTHING PROPOSAL

ENTER MACRO

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Does the Name *INTERRUPTED* Ring a Bell? - by Don Mears

When using a CRT it is often desirable to be able to stop output to read what is on the screen and then continue on without losing any of the output. Currently this is not possible. I would like to install a mod to LTD similar to one Indiana University put in their system. That is, when a bell character is typed during output, the output is halted. Output resumes when any character is typed. This is a very simple mod to LTD. Note that when the bell is typed no *INTERRUPTED* type message is printed. This will prevent any extra lines from being scrolled off the CRT and it will allow hardcopy listings to be stopped (to change paper or fix simple TTY problems) without messing up the listing.

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Front-end/6676 Compatibility - by Don Mears

I would like to change LTD to require the user to hit the C/R key to initiate the log-in sequence. This will:

1. Make the ports on the timesharing front-end look like ports on the 6676.
2. Ease the conversion to the PDP11 front-end.
3. Permit easier switching back and forth between the 6676 and PDP11 if problems develop.
4. Make Cyber ports act the same way as 6400 ports after the Cyber has converted completely to the PDP11.
5. Allow us to completely confuse all the users at one time rather than a few at a time over a long period.

If the user does not hit a return key within 30 seconds, LTD can issue a message (as the PDP11 does) asking the user to hit a return key. This will permit users who haven't heard about the change to still be able to log in.

SYSTEM MAINTENANCE: People and Procedures

Last Week's Systems Group Meeting - by T.W. Lanzatella

1. Kevin Matthews reported on the results of some recent tests which attempted to improve response time for time-sharing users. Over the last several weeks, we have run the Cyber 74 with various numbers of disk channels, rollout file size partitions and additional central memory for time-sharing use. Kevin reported that none of the configurations improved response time significantly. Next we will try more central memory and more control points.
2. The following proposals were rejected or accepted.
 - a. Brian Hanson's CATALOG enhancement for the ENDS/HAA loader fields (see DSN 3, 15 p. 2) was accepted.
 - b. Kevin Matthews' proposal for a TRACKS command (see DSN 3, 15 p. 4) was accepted but several people objected to the lost disk space. We decided

that the TRACKS command was acceptable until a nice algorithm for allocating tracks on the 808 is found.

- c. Bill Sackett's X. proposal was rejected (see DSN 3, 15 p. 2) but an acceptable solution was mediated with W. Kaercher, the MIL representative who attended. Our decision was to retain the status quo on MERITSS and on MIRJE where X. is CALLPRG resident and hope that MECC decides to run NOTICE/NOTIFY.
 - d. Tim Salo's proposal for installation of the 512 printer was accepted (see DSN 3, 15 p. 3). We decided that normal print files should not be printed on the 512.
3. Operations voiced several requests for systems staff, many of which appear in following articles.

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Providing an MFL= Entry Point to Single Entry Overlays - by M. Riviere

The Fetch type procedure MFLPRO provides a single entry overlay or multiple overlay file with an MFL= entry point.

These single entry overlays are the ones generated when Text type records with OVERLAY cards precede the relocatable binary for overlay generation Loader requests. These types of overlays are not suitable for the addition of extra entry points through Loader control cards. (Examples: FTN, COBOL)

The addition of the MFL= entry point is made by adding an extra 0,0 overlay as a bootstrap at the beginning of the file.

This 0,0 overlay contains an MFL= entry point and a Loader call to load the 0,0 overlay of the required product. Overlay files created by this procedure will have, when used as local files, the loaders honoring their MFL= entry point.

This set-up will not work for products loaded from the System since the bootstrap program is an overlay by itself and the System directory is scanned by product name, not by files as the Callprg index is.

Some caution should be used with this set-up when using products that may need to have their 0,0 overlay reloaded, since the bootstrap overlay will be in most cases the first one loaded.

When processing random files with MFLPRO it is necessary to rebuild the index record of the edited file.

Although the new file will include an MFL= entry point, it is important to notice that the Loader will honor it only when making local file loads such as for Past, Future and Fetch Callprg products or for control card callable Callprg products after the first execution of the package took place (that is, when they are loaded as local files). For the first execution of a control card callable package, Callprg handles the loading operation and by-passes the Loader section that analyzes and honors the MFL= entry points. MF parameters are needed on the Callprg index cards, anyway, for the products created by this procedure if they are installed as control card callable.

The need for the MF and FL parameters applies in general to all the Callprg products which have MFL= or RFL= entry points.

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Long Range Requirements (Cyber 80) - by M. Frisch

CDC has asked the VIM users group to detail long range requirements, particularly those that would affect the next generation of computer systems which CDC is currently calling Cyber 80. Here is our chance to let CDC know what we would like to see in the way of hardware and software in the near future (the next 5 to 10 years). Changes in current capabilities or completely new capabilities can be considered. One aspect to think about is compatibility--is it important to us that a compatible machine line or software system be built, or can we accept conversion in exchange for improvement? In any case, dream some dreams about near-future computing and plan to discuss your ideas at the next systems meeting (or else contact me directly). Even if we don't get a Cyber 80, just thinking about our long range needs should be beneficial.

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DIVERT Limits - by G. Jensen

Due partly to user suggestions, but based primarily on the results of a recent study conducted by UCC Operations and User Services, the AUTO-DIVERT limits will soon be altered at the "open-shop" U1004 RJE terminals. Generally, the limits will be raised during the prime time (8 a.m. - 6 p.m.) hours at the affected terminals. This change will take place at 8 a.m. on Monday, 19 September, 1977. For more details on what changes will be made where and why, see the next (September) issue of the UCC Newsletter.

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Operations--Assorted Requests - by J. Larson

The following list of items has been gleaned from several sources and includes a few new things as well as things that have been around for some time. Several of the items listed have been discussed with or requested of individual systems persons but are being included here to give them a more official status. For the sake of providing some organization to the list, I am presenting the items in several rather loosely defined categories. Your attention to these concerns will be greatly appreciated and I hope that we will make better use of this forum in the future to keep you posted regarding our needs.

I. Bugs

- R.M.
PDP-11*
- A. SUPPIO aborts shortly after being brought up - The explanation we have been given is that this occurs when SUPPIO is loaded from the console before the PDP load messages finish typing on the Decwriter. We are aware of at least one instance in which the operator did wait but SUPPIO still aborted.
 - B. Varian plotter aborts - This usually happens when the plotter is standing by but has also occurred in the middle of plot jobs. Error log messages in these situations include "CH07, PDP-11 TURNED OFF" and Channel 7 function rejects.
- Don
2 RM
V. R. R. 100
2/2/77
V.R.*

- g
OS - 275
- C. CM requests too large - This problem is probably more a manifestation of design inadequacy rather than being a bug; however it bugs us! Users who request more CM than is available during production time find that their jobs never come back. This happens fairly often to users who inadvertently request, for example, 80000 (decimal) words of central memory, forgetting that this is more than the 155,000 (octal) words available to run in. Jobs that request more than the amount of memory that is available during production time should be aborted with an appropriate dayfile message.

II. Enhancements to Existing Software

- CHARGE
DEFINITION
will work in
- T.C./JL
- Summary from
ACE
- AB
- NOT
PARADISE
NOT
- COMMING
SOON
1. USE NOTIFICATION
2. LOW PRIORITY
3. HAVE A LOOK
4. TALK TO RTI
- JS
WILL
HANDLE
- TSJ
- A. QDUMP - We would like to see QDUMP made capable of automatically dumping jobs left in the rollout queue at end-of-ops, thus eliminating the need (and complications) of using N.RERUN or of redeadstarting before dumping files.
- B. Empty punch/plot files - If a user attempts to send an empty punch or plot file to the punch or plotter a message should be issued to his dayfile informing him that the file is empty and no output should be generated.
- C. Queue files location - We would prefer not to have I/O queue files stored on those disks that are up during systems time. This should allow us to use QREC at beginning-of-ops on Sunday as well as other days without worrying that files may have been lost or messed up. It would be useful to have a selection mechanism for determining what drives the I/O queue files should go to.
- D. Skip to ~~EOI~~^{DAYFILE} on N-Display - This will help the operators to get to the dayfile portion of a displayed job more easily.
- E. Refine DISABLE AUTO UNLOAD - Operators should be able to DISABLE AUTO UNLOAD for each or several tape unit(s) rather than the current all or none option.
- F. Switch/Purge - The message that currently goes into the error log should have the jobname added on. We would also like to have an account file message issued (including the jobname) in each instance where these commands are used so that a record of what happened to the job will appear in the accounting microfilm.
- G. Aging algorithm for output - The current scheme appears to discriminate too heavily, under certain conditions, against long outputs, diverted outputs or disposed outputs at Experimental Engineering in particular. An algorithm that would raise the priority in a period of 1 1/2 to 2 hours for a job with the lowest initial priority (a diverted or disposed job just under the divert limit in size) to the highest priority is what we need.
- H. Banner page - In response to user complaints regarding finding output in the dispose bins at Experimental Engineering, I would like to have the column heading "JOB" which appears in the upper left-hand corner of the banner page changed to "JOBNAME=NNNNNNNN". The N's are the computer assigned jobname. Additionally, *SC should appear in the bin column for output diverted to Experimental Engineering from RJE sites. SC is the site code of the user intended RJE site.
- I. Line printer tests - We would like to have the capability of determining whether or not the additional first track punches have been made on the format tape and of telling when the format tape is put on inside out added to the tests.

J. Tape statistics - The program DMTS which produces daily tape statistics needs the following modifications:

- 011 → 1. Separate 7-track and 9-track statistics in each category in addition to the aggregate statistics that now appear.
2. Mounting time for tapes in multi-reel files should include only the time from when tape n hits EOT until tape n+1 is mounted.
3. The "IDLE UNITS" portion of the pending requests section needs to be reworked to make it useful. The current numbers that appear there are not a true reflection of the tape units available.

iS K. Punch output header cards - An error checking mechanism is needed to prevent the occasional instances when one or more of the header cards is mis-punched or missing completely.

80 / L. Queue list utility - The high speed sites need a facility for getting complete lists of all queue files for jobs originating from their sites. They also need the capability of finding any queue files for an individual job given the first n characters of the jobname.

M. Line count - It would be useful for ribbon testing purposes to be able to get an accurate line count for each printer at Lauderdale and Experimental Engineering. Perhaps a hardware solution for this problem would be better. At the very least a separate page count for LP34 and LP35 is needed.

III. Questions/Problems for Thought

- A. A user recently created a Calcomp plot file on tape and did a verify. His job aborted on the verify and he reran it. The plot file was actually O.K. and he got back two copies of the same plot as a result. Is there a way to avoid this?
- B. With an ever increasing number of long print, plot and punch outputs coming from RJE sites the special request slip no longer is adequate for alerting operators to these long files. Should user settable line limits, card limits, etc. be instituted? Any suggestions for another mechanism to handle this?

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Reporting Hardware Problems - by J. Sell

Since hardware failures are not limited to production hours, everyone who uses the system during non-production time should be aware of how to report equipment problems. Many of you are already acquainted with how this is done. For those who are not, please read on.

With any equipment problem, a written service request needs to be made. This should be done by the person discovering the problem. We use 2 different service request forms. A MAF (Maintenance Activity Form) is used for equipment serviced by Control Data. A FESR (Field Engineering Service Request) is used for equipment serviced by Field Engineering (PDP's, Decwriters, and plotter). Both forms are available in the table drawer behind the Cyber console.

Please be complete when filling out a service request. If reporting a tape unit problem include the serial number of the drive (unit numbers tend to change). Be specific when describing the problem. When through, tear the customer copy sheet from the form. File the request form and the customer copy sheet in the appropriate input tray behind the Cyber console. It is important to retain the customer copy so that other staff are aware of the problem and/or are aware the problem has been reported. When the engineers have fixed the problem they will return a portion of the request form and indicate the corrective action taken.

If a CE needs to be called in (or if you are wondering whether a CE should be called in), contact the Operations on-call person. The on-call person will make the service call if needed and make sure the service is done since you may not be there when the service is actually performed. Should you decide you don't want to stay in the building if the system is down, you have the option of calling the on-call person in. The current on-call person is always listed on the computer room bulletin board.

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Callprg and Library Tape News - by M. Riviere

On August 21, several modifications took place among Callprg and Library Tape products. These unscheduled changes were made in order to adjust to the Loader modifications which took place at the same time.

John Strait replaced PASCAL and PASCLIB on the library tape with their future versions. John also replaced the current versions as Past and released new Future packages. John also included in his modifications field length adjustments.

Michael Frisch changed the index entries for FORPREP, PLOT31, PERT66 and UMRPG to include FL parameters.

S. Yen added MF and FL parameters to all his Callprg packages (SPSS, UMST, BMD, BCTRY, ISIS, OMNITAB and IMP). Yen is in the process of modifying the binaries to include field length adjustments.

I changed the past version of FTN to provide field length adjustments on the binary and I added a MF parameter to the index card. I also added the Fetch type procedure MFLPRO which I describe in a separate article in this newsletter.

There are no modifications scheduled for August 29. However, several modifications related to the loader changes may be taking place on Callprg products for the next two weeks.

Also a new version of BASIC (BASIC3) which is now in the process of being tested on the 6400 may be replacing the future one on both computers. There is no scheduled date for this change for the time being, but it may be taking place very soon.

The next library tape and Callprg scheduled modification date is September 13. The deadline for these modifications is September 1, by noon.

By that time several of the summer quarter break modifications will be taking place. Among them will be the change of MNF to the record manager version and the removal of RUN.

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Cyber 74 Deadstart Dump Analysis - by K.C. Matthews

Tuesday, 9 August - Sunday, 22 August

Tuesday, 9 August

11:00 A label error suddenly occurred on pack DN20 on drive 6BC. This had happened at least one time before. We reloaded DN20 to a new pack and didn't put anything on drive 6BC until the engineers checked it out on Friday. At that time, pack UCC was placed on drive 6BC, where it still remains. It has been destroyed once or twice since then on that drive. Drive 6BC is not considered trustworthy yet. We were down for 2 hours repairing the original problem on Tuesday.

Wednesday, 10 August

00:55 A job was purged which had a track limit; this caused a hung PP. We will never know what happened, since it was impossible to take a deadstart dump. In fact, it was impossible to do any sort of deadstart. The CDC engineers were called in and were not able to solve the problem until after 6:00 a.m. when someone turned off the PDP-11 locked on the UCC Engineering side of the building. We were late coming up on Wednesday because permanent file dumps were needed.

Thursday, 11 August

EXPORT was failing early after deadstart. We found that someone had set word 000000 (absolute) to a 4. The rest of the system is now fairly resistant to a non-zero value in address 000000, since the system ran for almost an hour with only EXPORT failing.

21:20 (DD-16)
The system showed many disk errors, and most of the subsystems aborted. After a recovery, it was impossible to bring up the subsystems correctly. Eventually, a central memory test showed a solid hardware problem. The problem was fixed by the CDC engineers and the system was back to us at 23:50.

Saturday, 12 August

04:26 (DD-20)
The subsystems failed again. Memory tests failed as the night before. The engineers were called and the machine was back to us at 06:55.

13:00 (DD-21)
A PP hung. This dump has not yet been analyzed.

Thursday, 18 August

08:29 IRO hung because it tried to use the second half of the 808, which had been attached to the Cyber until Tuesday. Memory was changed so that this would not be tried by IRO again.

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6400 Dump Analysis - by W.T. Sackett

77/07/23 - 77/08/22

Date Description

77/08/01 TELEX got mixed up (drop pot errors) and began sending output to the wrong terminals. Dropping TELEX cleared up the problem. Several DPT problems have been found and corrected since then.

The next three crashes occurred during the time when the 808 was on loan to the Cyber. The channel cable for the 808 was not grounded and while this should not cause problems, at least one of the crashes (08/11) was definitely a hardware problem.

77/08/11 Scopes blank. Of 8 PPU's whose location at deadstart was determinable via zero bytes in the middle of code, 7 (including DSD) were found to be waiting for *CRD* instructions to complete. This may be a memory reservation problem similar to the one that burns the Cyber about once a month.

77/08/12 Scopes blank. 026 up at the time of the crash. 026 and the rest of the PPU's seemed to be intact as was central memory. CPUMTR was in its idle loop. Unable to find any reason for crash.

77/08/15 MTR self destructed. Central memory was wiped out starting with a *CRM* instruction at word 2435 but unable to locate where the data was written from.