

UNIVERSITY OF MINNESOTA COMPUTER CENTER
Deadstart Systems Newsletter

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NOTICE OF CHANGES TO THE SYSTEM

By prior arrangement, (see DSN 7,8 P. 54) the following changes will be installed on Sunday, 14 June.

Jeff Woolsey added a new ECS display to USERS/DSD. The new display can be called up with the ECS command and indicates which jobs, on both mainframes, are using ECS and how much.

Kevin Matthews changed disk TRT processing so that a spare copy of the TRT is written to a special place on DM and DQ devices. We have used this practice of keeping a spare copy of the TRT on each disk for several years. The reason we do this is because usually, when a disk is wrecked, only the label track (track 0) which contains the TRT is wrecked. By keeping a spare copy, we can often restore wrecked labels and end up losing far less information than if the disk had to be reloaded from the most recent dump tape. Kevin's change extends our feature to include the (sort of) recently installed 885 disks. Kevin also installed some minor changes to PDUMP in the way its output is treated. PDUMP is a program used by operators. It generates calls to PFDUMP which perform the incremental permanent file dumps.

Jeff Drummond installed a change to GTR which makes it better able to manage its own field length. Jeff also repaired a serious problem in FILES which caused control statements which use improper separators; as in RENAME, A, B.; to enter an infinite loop during processing in FILES. This problem was introduced by us. Additionally Jeff resubmitted several common decks and a modset with minor coding changes.

Andy Hastings, as it has become recently customary, is shoveling quite a lot of code into the system. This week's crop is predominated by the final iteration of the secure password entry overhaul which he began some months back. for details regarding the user's view of these changes see DSN 7,7 P. 39; I won't repeat them here. Internally the change involves 13 system routines and roughly 19 new or altered modsets. Andy's change only adds a few hundred lines of code but because he changed some key table and function references, the enhancement spans many of our modsets and programs. Andy also installed the following changes.

- 1) SIMTALK was corrected so that it works after a pack name has been set.
- 2) The SUPPIO introductory message was changed to indicate that our system is NOS and not KRONOS.
- 3) PFM was corrected so that semi-private files can be accessed by a job with a user index but no user number. This affects only DIS users.
- 4) A strange situation which could cause LTO to hang was fixed. Ever since the days of KRONOS, a bug has existed in TELEX which allows a terminal to be in TEXT mode yet still recognize and process commands. This makes it possible for a malicious user, like ABH, to unload his primary file while still in TEXT mode and subsequently cause LTO to hang. The funny state is (was) caused by interrupting the output from an E or LIST command and then entering TEXT mode. The problem was, of course, fixed before this newsletter became public record.

Paul Thompson reinstalled his enhancement to ENQUIRE which bases the E,JN job search on user index rather than job name (nicely explained in DSN 7,7 P. 37). The feature had been hastily removed when we found that jobs were being listed twice, once in the rollout queue and once in execution. We also discovered that intermachine (IM) queue files were not listed at all. Paul corrected the problem of jobs listed twice and added code to TRN so that files created with SEND or with SUBMIT using the MI-option have an EFNT thus are listed by ENQUIRE.

Don Mears added a small but striking feature to LTD, support of X-OFF. A CTRL-S can now be used by terminals logged in through the 6676 or through the 2550 to suspend output without losing any display information - works much better than the I-key. I never realized it but the feature has been available to users logged in through the PDP-11 for quite some time.

Marshall Midden contributed the final batch of code for off-line Xerox 9700 page printer support. This includes not only a new disposition code - DC=XE on ROUTE but a new program called XEROX used by operations to dump XEROX 9700 bound print files.

Brad Blasing fixed a disastrous error in the CPUMTR XJR request. The error caused at least one system crash on MERITSS, probably induced by a malicious user who discovered the bug before we did. The problem was that XJR processing in CPUMTR was using flakey arithmetic which failed when an argument got larger than a certain value.

DISCUSSION TOPICS

UNIX vs. VMS on the VAX - by L. A. Liddiard

In last week's YUCCS the trial balloon of our two DEC VAX 11/780's running only the UNIX operating system was announced. Needless to say, I have been stopped in the Experimental Engineering hallways and asked how could such a decision be made when the application packages that we need only run under VMS.

The following facts, conditions and preferences have been proposed.

- 1) Currently IPC graphics runs best under UNIX.
- 2) If modifications must be made to the operating system, then writing in C under UNIX versus assembler under VMS for the equipment drivers means that only the UNIX solution will enable the work to be accomplished in a reasonable time.
- 3) UCC is not able to support four operating systems (UNIX, VMS, COS and NOS). Since NOS and COS are not optional, either UNIX or VMS should be discarded.
- 4) Adopting UNIX means that UCC is selecting the eventual operating system for most minicomputers and micros at the University during the 80's.
- 5) High support is given to UNIX by U of CA at Berkeley and large software additions are expected in the next year.
- 6) CAI group has stated that UNIX would be best for their package.
- 7) UNIX has compact, concise and up-to-date documentation that can be made available to users at lower cost than the VMS package.
- 8) VMS control language is less friendly than UNIX.
- 9) VMS means easier support for compilers.
- 10) VMS means everything comes from one vendor.
- 11) Certain packages only run under VMS(RIM,PL1).
- 12) Best COBOL and FORTRAN for VAX are under VMS.
- 13) If VMS is run, we would require fewer UCC personnel because UNIX products from many vendors would require much more effort.

(14) UNIX has the best word and text processing.

UCC must come to a decision on what the VAX machines will run during fiscal 81-82. A change could be made in Summer 82 if the initial decision was not the correct one. Currently, many task forces are held up because of our indecision.

SYSTEM MAINTENANCE: People and Procedures

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

The discussion topic by Mike Frisch met with a surprising conclusion (see DSN 7, 10 P. 68). Mike argued that the EXPORT command, proposed and approved in DSN 7,9 P. 58, should never have been invented. Instead, the facility should be placed in SUBMIT. We decided, based on a close vote, to consider a proposal detailing the use of SUBMIT as a means of transferring batch (card) jobs to other machines.

Marisa Riviere's topic requesting a consensus on the worthyness of a data base describing the contents of the Lauderdale manual library was deliberated. Eventually we decided that whatever we do ought to be compatible with the UCC Reference Room data base. We also suggested that the Reference Room supply some kind of documentation on how to use the data base.

TWL reported that the new VAX at IPC is working. No phone line or tape drives are hooked up yet.

KCM reported on the DECUS conference he recently attended. See Kevin for details.

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Callprg and Library Tape News - by M. Riviere

As previously announced in the last issue of this newsletter, the changes to take place on June 14 are the replacement of M77, M77LIB and SYSLIB and the introduction of RELLIB. There are no new scheduled changes for that date.

The next set of Callprg and Library Tape modifications will be taking place on June 30th. The deadline for requests is June 18th, by noon.

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Cyber 74/172 Deadstart Dump Analysis from Friday, 8 May to Thursday,
6 June - by J. J. Drummond

Sunday, 10 May

Cyber 172

20:52

DD2023

The system hung-up when neither TELEX nor TRANSIT were being assigned the CPU. MTR was suspect but some of it's memory is overwritten as part of the deadstart dump process. A level three recovery was successful. More on this problem later.

Monday, 11 May

Cyber 74

16:10

DD2024

CIO hung empty on an 885 disk channel and a level three recovery was required. This problem occurred at least two times before and after this crash the operators were instructed to disconnect the channel if the problem re-occurred.

Sunday, 17 May

Cyber 74/172

16:32

N.A.

Both systems were up a half-hour late due to disk problems.

Thursday, 21 May

Cyber 74/172

11:24

DD2001

Both systems ground to a halt when an interlock condition was some how left set in ECS. A level zero (with PRESET) was required to clean the interlock.

21:07

DD2002

Same problem as at 11:24.

Sunday, 24 May

Cyber 74

22:19

N.A.

1T0 hung at TELEX's control point. A level three recovery was successful. No dump was taken.

22:24

(172) DD2005

The system hung-up when TRANSIT (and other jobs) were not being assigned the CPU (same problem as on 10 May). One of the CPU's was apparently stopped in monitor mode. More investigation is necessary.

Thursday, 28 May

Cyber 74

04:07

DD2006

1AJ hung when TELEX was dropped at end-of-operations.

Sunday, 31 May

Cyber 172

20:50

DD2007

A number of disk drives came up with label errors with numerous disk errors in the ERRORLOG. A level three recovery cleared up the problem.

Wednesday, 3 June

Cyber 172

21:35

DD2010

The system hung-up with many copies of PFU and PFM. Analysis of the dump revealed that a copy of PFU was hung on the DDP channel. A disconnect of the channel could have avoided the level three recovery deadstart.

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MERITSS (Cyber 720) Deadstart Dump Analysis 5/25 to 6/4 - by B. Blasing

Tuesday 5/26, 21:21

DD3

The system was crashed on purpose by an ambitious person who discovered a bug in the XJR processing part of CPUMTR. This was fixed the next day.