

UNIVERSITY OF MINNESOTA COMPUTER CENTER  
Deadstart Systems Report

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NOTICE OF CHANGES TO THE SYSTEM

Andy Hastings reinstated the answerback facility in 1TA. Andy intentionally removed the capability some time ago while shopping for some space in 1TA. He did not realize that some users are using the feature.

Brad Blasing repaired a devastating problem in 1AJ. The problem was that the control statement buffer was not being cleared before job startup which means that remnants of the previous job could be left lying around. Unfortunately, a mugger discovered this problem before we did and a serious security problem resulted. All that he had to do in order to get passwords and user numbers was perform a checkpoint repeatedly from a time-sharing terminal. This is a problem in the stock NOS system.

## PROPOSED CHANGES TO THE SYSTEM

New Deadstart Panel - by D. W. Mears

We are now testing NOS 1.4-552 on systems time. One of the problems we have is that the deadstart panel is completely different between the two systems. Each time we switch between R5 and R4 (which we usually do several times on system's time) we have to change  $10 \times 12 = 120$  switches on the deadstart panel. I want to change the current system to accept the RS deadstart panel. I will do this by putting a program in front of PRL (preloader) which just reformats the deadstart panel in low core and then loads PRL. I will inform operations of the change and update the instructions next to the various deadstart panels.

## DISCUSSION TOPICS

PTR Reporting - by Elaine N. Frankowski

The PTR lists once served two purposes: informing users of known bugs and reminding UCC staff of what products needed fixing. The PTR coordinator maintained the lists; followed up on whether bugs were being fixed; and served as a conduit between users and UCC staff, and between UCC staff who discovered bugs and staff responsible for maintaining the "accused" program, utility or system routine.

The PTR process is operating badly at present because of:

- \* the proliferation of machines and systems, (When the PTR process was begun we had two Cybers, each running a CDC operating system. Today we have Cybers, VAX's, a Cray, and large numbers of micros, running NOS, UNIX, COS, MMOS, et. al.) and
- \* changes in UCC operating procedures that make PTR methods that were created in 1977 inefficient or ineffective today.

The PTR lists are hardly used at present because they cover so little of the software available at UCC.

Thus both the process and the product (the PTR lists) need rethinking. These specific questions, among others, arise:

Should we continue the PTR lists and the PTR activities?

If they are continued, how can they be updated to fit today's UCC with its plethora of computers, software products and people-groups?

If they are continued, should they be handled by one PTR coordinator, or a PTR-person within each major group at UCC?

If they are continued, how should users be involved?

Do the PTR lists serve any purpose today? What is it and how can we carry that over into the new PTR process?

The Services Group is discussing these questions. I would like the Systems Group to do so as well.

## SYSTEM MAINTENANCE: People and Procedures

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

The first item of business was Andy Hastings' discussion topic of what to do about tape mounting on the UNIX system (see DSR 8,6 p. 85). Most people felt that there should not be any interactive access to tapes on the UNIX system while some people felt that there should not be any public access to tapes whatsoever. Operations people were present and indicated that we currently have problems with both the UNIX and VMS systems as far as the tape library data base is concerned. We also lack a cataloging system for tapes used on the VMS system. We concluded that because tape usage on these two systems is fairly low, we need not worry too much about a cataloging system or about the data base. Keeping the tape library data base updated when tapes are accessed from many machines is a non-trivial problem. Chris Boylan will investigate what other sites are doing about tape access on their UNIX systems.

We will also investigate the feasibility of moving the UNIX console along with the UNIX tape drive to the vicinity of the Cyber consoles. We are generally in favor of tape access scheme mentioned in part 2.b of Andy's discussion topic.

The following proposals were discussed.

Steve Collins' proposal suggesting a method of controlling access to VMS ports was accepted (see DSR 8,6 p. 81).

Andy Hastings' proposal to install a new UNIX command named PWG which would print the current working group for a UNIX user was accepted (see DSR 8,6 p. 81).

Andy Hastings' proposal to install the game PACMAN along with a utility named nap which, when called, waits a specified number of clock ticks was accepted (see DSR 8,6 p. 82).

Andy Hastings' proposal to install a utility named game which regulates access to games on the UNIX system was accepted (see DSR 8,6 p. 82). Chris and Brad will produce a newsletter article describing the new method of accessing games.

Andy Hastings' proposal to modify the UNIX utility whereis to search additional directories /user/man/man1 and /user/man/mann was approved (see DSR 8,6 p. 82).

Brad Blasing's proposal to install an auto-dialer on the UNIX system was approved (see DSR 8,6 p. 83).

Brad Blasing's proposal to change the UNIX utility CU so that the phone number is an optional parameter was approved (see DSR 8,6 p. 83).

Mike Frisch's discussion topic suggesting a new way of naming MINNLIB subroutines generated a few comments. Generally, most people felt that

MINNLIB routines should have meaningful names and that the new naming scheme is not conducive to this effort (see DSR 8,6 p. 84).

Pat Jarvis asked that the system group work out a scheme which would allow Cyber users to access various peripherals on the VAX/VMS system. Pat had suggested that we set up a separate queue for each VAX peripheral. We decided instead to set up a single queue which would hold all files bound for the VAX. Files would be distinguished from one another by using the external characteristics option, EC, on the ROUTE command. Each queue file will be prepended with a header describing the file's destination. A utility will be written for the VMS system which will read the queue dump tape and ENQUEUE the files for the appropriate device. Don Mears, Marshall Midden or Bill Wells will do the work.

Brad Blasing talked briefly about a recent security problem on the MERITSS machine. Brad announced that the following steps will be taken to tighten up security.

- 1) The procedure K will be removed from the deadstart tape.
- 2) All staff should change their passwords.
- 3) We will get a hardwired terminal for Jim Foster.
- 4) The procedure A will be removed from the deadstart tape.
- 5) The user index for the user number PF will be changed to something above AUIMAX.
- 6) All non-UCCers should stay out of the machine room.
- 7) Brad noted that the Experimental Engineering I/O room is not secure.

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#### Callprg and Library Tape News - by M. Riviere

An entry for the future version of COMPASS was added on the Cybers 172/74 Callprg index on April 27th. This version of COMPASS, installed by A. Hastings, is the 552 level release of the assembler.

On May 18th, the Library Tape of the three Cybers will be updated with the inclusion of LDRTEXT level 543. This installation text was supplied by S. Siirila.

Also on May 18th, B. Hinkley will install a future entry for SPSS on the Cybers 74/172 Callprg index. This is the version 8.3 of SPSS.

The next set of Callprg index and Library tape changes will take place on June 1st. Requests for changes on that date should be submitted before May 20th by noon.

Please start planning now the changes to take place at the end of the Spring quarter. The deadline for those changes will be June 3rd. The changes will be implemented on June 13th. Be aware that on June 13th the new Callprg utility will be installed. A separate article in this bulletin describes how the Callprg index will be affected.

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Lauderdale Security - by L. Stadther

As you know, we are now providing operator coverage for system time on Saturday evenings. The operator is there to assist with tape and disk pack mounting, monitoring the systems, and troubleshooting when necessary. He or she is also responsible for security coverage during these hours.

In regard to security, I'd like to request everyone's cooperation in maintaining certain standards. First, please don't be offended if you're asked to identify yourself; the operators simply don't know all the staff members. Second, only UCC staff should be in the computer room. If you ever need to take someone in (i.e., for a short tour, never to use any equipment) please check that person in with the operator on duty to have him/her signed in.

Finally, please use a similar approach to security for the staff terminal room at Lauderdale. It's meant for staff use only, and the door should not be left open.

Your help will be very much appreciated.

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New Callprg Utility and Index - by M. Riviere

On June 13th, the Callprg utility will be replaced by the new version proposed by Andy Hastings. The Callprg index needs extensive modifications to suit the new utility. Andy is now converting the current index entries for the change. If he has questions related to some specific product he will contact the person in charge of it.

The index conversion does not affect the way in which requests should be submitted for the June 1st changes. The June 13th changes, however, will have to comply with the new index parameters. One June 13th, I will merge Andys' new index and the latest requested changes and produce new index program libraries. The libraries will be resequenced. The change will affect both libraries; the Cybers 74/172 (CPOPL) and the MERITSS library (CPOPL7). Requests made after June 13th will have to reference the new MODIFY identifiers.

All the new Callprg index parameters are now described on the Callprg writeup. The most commonly used parameters to be affected by the change are:

1. The permanent file names DA and IA; both of them will be replaced by PM. All entries will be changed.
2. The argument cracking option, CC, which will default to KR instead of SC. Some entries will need to have the parameter added.

3. All the tape resident products parameters. The tape files will be placed in a removable pack called CALLPRG. The entries for these packages will be largely changed.
4. The access mode, M, which will default from read (R) to execute (E). Programs which need to read their own binaries (e.g., overlay loading) will have to include the M=R option in their entries. Also, all data files should have M=R specified.
5. The field length adjusting parameters will not be available. Binaries which have specific field length requirements are to be converted. Andy can assist in this conversion.

The new Callprg utility and the new index will be available on the weekend of June 5th and 6th, during system time for anyone to test it. Andy will also be testing the new Callprg during system time on Saturday evenings.

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#### Shepherd Lab VAX/VMS Notes - by M. Riviere

##### 1. System Changes

The ENQUEUE and VIEW commands proposed by J. Mulhern are now installed. One system symbol is used for each one of the commands. Documentation for the ENQUEUE and VIEW is available on the HELP library.

System definitions were added for the graphics libraries DISSPLA, MNCORE and BANKDATA.

##### 2. Software Additions

We installed another word processor, WSATURN, from SATURN software distributions, to be used on a trial basis. The installation of SAT, as the package is called, does not require any system definitions. The package environment is to be set at user's log in time from the user's LOGIN file. The directory (SATURN) on USERSA: contains most of WSATURN software. Some additional files are included on the system directory (SYSLIB). These files are HLP types and data structures. Renee Holoiien can be contacted for information about running SAT.

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Cyber Deadstart Dump Analysis 4/19-5/9 - by B. E. Blasing

Cyber 730

Sunday 4/25, 19:56 DD2025  
Disk channel 32 hung; a level -3 fixed it.

Thursday 4/29 09:32 DD2001  
Thursday 4/29 10:46 DD2002  
Thursday 4/29 11:04  
After several system hangs, the system was given to the CE's who replaced a bad CMC controller card.

Friday 4/30, 11:44 DD2002  
A double bit memory error halted the machines, but it went away upon deadstart.

Sunday 5/2, 03:30 DD2004  
Channels 32 & 33 broke solidly during PFPACKing. The disks on these channels were moved to channels 24 & 25.

Friday 5/7, 10:22 No Dump  
The 67x tape controller broke. System given to CE's to check it out.

Friday 5/7, 12:09 No Dump  
CE's hung system while attempting to fix 67x channel on line.

Cyber 74

Tuesday 4/20, 16:35 DD2023  
ORF hung as the demand count for magnetic tapes on a particular job went negative. No known reason.

Wednesday 5/5, 14:30 DD2005  
Wednesday 5/5, 15:23 DD2006  
Wednesday 5/5, 16:01 DD2020  
Thursday 5/6, 15:21 DD2007  
Thursday 5/6, 15:57 DD2010  
Thursday 5/6, 16:01 DD2011  
Many crashes with similar symptoms. CPUMTR mode exit due to an exchange package being written two words away from where it should be. Diagnostics showed exchange jump problems occasionally. It never failed solidly for the CE's. Not yet resolved.

Cyber 172 - MERITSS

Wednesday 4/21, 12:28 DD2  
Another mode 40 error (CMC to CPU data parity error. This one occurred in the idle package.

Saturday 5/1, 16:44

DD10

Bit 12 of register A0 in CPU1 got picked. This caused CPUMTR to write junk out to the TRT. This has been happening a lot lately, this is the first time it has been directly attributed to the CPU.

Thursday 5/6, 01:30

DD12

An errant 1.ASSIGN,61. caused LAF to hang at end-of-ops.

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VAX/UNIX Down Time Summary 4/19-5/9 by C. Boylan

Friday 4/23, 0930-1015

System trapped many times with CPU double error halt. This was the beginning of a long series of crashes which eventually were discovered to be the SI MBA back plane. No Dumps.

Saturday 4/24, 1230-1630

Same as 4/23. System was very unstable.

Saturday 4/24, 1230-1630

CMI took the system to work on problem. Not Resolved.

Sunday 4/25

System was down most of the day. It was alternately rebooting and crashing. CMI took the system at 2300. Problem was not fixed but system became much more stable.

Thursday 4/29, 1540-1800, 2000-0000

System started crashing again. CMI took system for awhile at 1600 and 0000. System crashed many times.

Friday, 4/30

System was down all day. CMI found a problem in SI MBA backplane Thursday but didn't have part. Part arrived from SI Saturday or Sunday.

Saturday 5/1

Down.

Sunday 5/2

Down. CMI came in at 2335 to work on VAX. System back up Monday morning.

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VAX/VMS Downtime Summary - by M. Riviere

Wednesday 4/21, 13:54-13:60

Fatal bug check. System auto rebooted.

Thursday 4/22, 13:56-13:58

Fatal bug check. System auto rebooted.

14:51-14:54

Fatal bug check. System auto rebooted.

S. Levy analyzed the dumps for the April 22 crashes. The dumps show that the problem may be in the DH driver interrupt handling code. The circumstances that produced the problem (digitizer tablet output to a terminal) are very infrequent and can be avoided. We plan to reference the problem to the driver's vendor.