UNIVERSITY OF MINNESOTA COMPUTER CENTER
Deadstart Systems Newsletter

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Send all comments, criticisms and contributions to the editor: T. W. Lanzatella
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NOTICE OF CHANGES TO THE SYSTEM

NOS Changes

The following changes will be installed on Thursday, 8 March.

Kevin Matthews changed program OEF to make use of his new MMF status word. This finalizes the installation of this feature. The MMF status word is set at deadstart time according to directives placed in the ECSDECK. The directives indicate which mainframes in the MMF environment can receive input or output files from other mainframes. The chief motivation for the feature was the ability to prohibit input and output files from being sent to the 6400 except with TRANSIT.

Don Mears installed a significant speedup feature in TELEX/CIO developed for MECC by CDC. The change allows direct data transfer between CIO and TELEX for output operations. The speedup arises from the fact that a job no longer needs to rollout in order to initiate output to a terminal. Don also added an assortment of new options to LKT the link test utility.

Tim Salo removed the last vestiges of XMIT/SEND from SUPIO and also added site 2R.

Tim Hoffmann changed ASEND and AROUTE (program ALTER) to issue a message to the output file indicating that the package will be removed on 22 March.

Marisa Riviere changed CALLPRG so that RA+64 contains the name of the file specified with the EX parameter if one is used.

Brad Blasing installed a new version of the Cyber loader which corrects a critical error. For certain types of loads, SSJ privileges were not being disabled.

KRONOS Changes

The following changes will be installed on Thursday, 8 March.

Marisa Riviere installed CALLPRG changes needed to support upper/lower case writeups as on NOS. Marisa also changed RFM to indicate unused files with asterisks on the RFCAT report.

Hesung Byun converted the local MST feature on NOS which converts physical to logical address to KRONOS.

Tim Hoffmann repaired an error in his new DUMPPF feature which allows reloading from CDC PFDUMP tapes. Tim also altered CLEAR processing in PFILES so that a NODROPped primary file is not evicted.

Bill Sackett repaired a timing problem in 1RO which was clearing the FNT entry for a primary file even though 1RO was recalling itself because of a track limit or FNT full situation. Bill also moved the extended suspended mode commands in TELEX/1TA from NOS to KRONOS. These are the commands which can be entered when a terminal session is interrupted.

Brad Blasing installed a new version of the Cyber loader with changes described above.

PROPOSED CHANGES TO THE SYSTEM

An Alternative to SETSL - by Earl A. Schleske

As an alternative to the SETSL control statement proposed in the D.S.N. of 6 February 1979, I propose that CPM be modified to avoid the "JOB STEP EXCEEDS ACCOUNT BLOCK" error by simultaneously changing both JSL and ASL to the requested value. This would occur if the new JSL being requested were greater than the current ASL, or when the new ASL being requested were less than the current JSL.

SYSTEM MAINTENANCE: People and Procedures

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

1. The following were accepted or rejected.

    a) Steve Reisman's proposal to install MULTI under NOS at PSR485 was approved (see DSN 5, 4 p. 24).

    b) Steve Reisman's proposal to install an assortment of S2K utilities was approved.

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Callprg and Library Tape News - by M. Riviere

Steve Reisman's Callprg index modifications for February 27 were postponed until a later date. Some considerations will be given to the package names and their types (Fetch or control card callable) before the package entries will be inserted in the index.

On February 27, Betty Hinkley removed the index entries for the past version of ISIS. The entry was deleted on the CDC 6400 as well as on the Cybers.

Also on February 27, Dan Germann transferred the ownership of GPSS to Steve Lai. Dan also deleted the past versions of EISPACK and SIMPLX.

On March 13, I will be installing the 485 version of FTN and its associated libraries as a future Callprg package. The entry for FORTRAN will also be modified to retrieve the 485 version of the library. I will also set up a Callprg index entry to retrieve all the available 485 level installation texts as FETCH,TEXT485.

During the quarter break (March 13) the current CDC 6400 version of Basic will be replacing the one in use on the Cybers. This version which has been up on a test basis on the 6400 since January 1979, includes permanent file operations and is more consistent with available documentation than the one currently in use on the Cyber 74/172. Bill Sackett will be providing the version of BASIC for the Cybers by reassembling the compiler and its library on the NOS system. The 6400 basic is BASIC 3.3 and it will be used until the next CDC release of BASIC becomes available. That is, Basic level 485 is not planned to be used.

Also on March 13, the current version of FORTRAN on the library tape will be replaced by a new one with an updated version of PROCPAC. The modification to PROCPAC was made by T. Hoffmann.

The next set of Callprg and Library Tape modifications will take place March 27. Modifications for that date should be submitted before noon, March 15.

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Cyber Deadstart Dump Analysis from Sunday, 18 February through Sunday, 4 March - by K. C. Matthews

Thursday, 22 February

04:10 Both Machines
ECS errors were reported by both the Cyber 74 and the 172 as end of operations approached. The engineers replaced a module.

Friday, 23 February

09:59(DD-4) Cyber 74
The system hung up with most PPU's either waiting for a dayfile message to be processed or for disk channel 30. The deadstart dump revealed that a disk error recovery was in progress in one PPU which was doing a dayfile buffer dump. That is, dumping the full 100B word long user dayfile message from central memory to disk. This case is slightly more difficult than normal disk error processing, since no dayfile messages can be issued. We ran out of time to investigate the problem any further.

Wednesday, 28 February

23:00 (DD-35) 23:00
When TELEX was stopped for the end-of-month accounting, 1TD hung dropping a MUX equipment. It hung because the equipment wasn't assigned to TELEX, but it should have been.

Friday, 2 March

The two Cyber systems did not come up until 09:00 on Friday. There were problems with disk pack SPL; we suspect it may have been damaged by some efforts to avoid a disk error on the device the day before. SPL had to be reloaded.

Sunday, 4 March

The Cyber 74 was late coming up because of problems with the 7-track tape units. A bit seemed to be coming in wrong occasionally from all the units on the 74.

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6400 Deadstart Dump Analysis (2/19 - 3/4) - by R. A. Williams

Date	Description
790304	Some permanent files were lost due to a PF pack problem. Investigation is continuing.

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TELEX and TELEX PDP-11 Crash Analysis - by D. W. Mears

2/16	17:45	TELEX on the Cyber 74 was effectively down for 40 minutes when equipment 45 (the TELEX PDP11) was accidentally turned off in the EST.
2/28	23:00	1TD on the Cyber 172 hung trying to release equipment 44 (the PDP11 equipment) which was not assigned to TELEX when TELEX was stopped at end of operations. I cannot figure out why the equipment was not assigned.

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Plotter PDP-11 Crash Analysis - by D. W. Mears

The Plotter link (originally the Supio link) which broke on 1/19 was fixed on 2/16. The problem was caused by a wire which was intermittently grounding out. On 2/20 the wiring change which fixed the Supio link was installed in the Plotter link although there were no apparent problems with the Plotter link.

There have been no plotter crashes attributable to the link since it was fixed on 2/16. There have been several instances where Plotter and Decwriter data have been corrupted. It is not clear if this is caused by a link problem or a random store problem in the software. We are investigating.

For the period 2/16 to 3/1:

There were 7 reloads for unknown reasons. There were 5 crashes caused by an error in the "not ready" processing. I think this is fixed.

There were 3 reloads because the Decwriter messages were being garbled or lost. There was 1 crash caused by a garbage plot file.

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RJE Crash Analysis for February - by Elie May

SUPIO/RJE (PDP)/Hardware Changes

2/4 RJE - Adds diagnostics to frontend software.
2/5 Hardware - replaced jumper to clear T1 in link.
2/6 SUPIO - no documentation in system log as to nature of change.
2/6 SUPIO - no documentation in system log as to nature of change.
2/6 Hardware - replaced timing control module to correct wait circuit malfunction.
2/8 Hardware - adjusted channel cables.
2/9 SUPIO (1SU) - checks for seven zeroes before accepting zero status.
2/9 Hardware - swap links between plotter and RJE frontend.
2/10 SUPIO - no documentation in system log as to nature of change.
2/10 Hardware - set margins.
2/18 RJE - facilitates automated analysis for code corruption.
2/19 RJE - reinstated previous version.
2/20 Hardware - link upgrade to fix current conduction error.
2/22 Hardware - link upgrade to eliminate noise pulsing.
2/24 RJE - adds diagnostics and corrects message processor error.
2/25 SUPIO - deletes xmit/send code.
2/25 RJE - fixes DDCMP byte count error.
2/28 RJE - corrects 1004 error recovery problem.
2/?? SUPIO - corrects erroneous "PDP hung" message and dropping of ports. (No date available since this change was not entered in the systems log.)

Index	Crashes	Explanation
1	14	Unexplainable symptoms and error condition (may be link related)
2	6	RJE TTY driver/message processor error.
3	6	Definite link related problem.
4	20	Breakpointing of frontend on possible link failure
5	4	Insufficient information for analysis
6	1	ECS failure
7	2	SUPIO abort but PDP 11 okay.
8	5	SUPIO abort with message "false zeroes from link."
9	11	RJE failure in error recovery for bad message from 1004.
10	1	PDP 11 abort due to power failure.

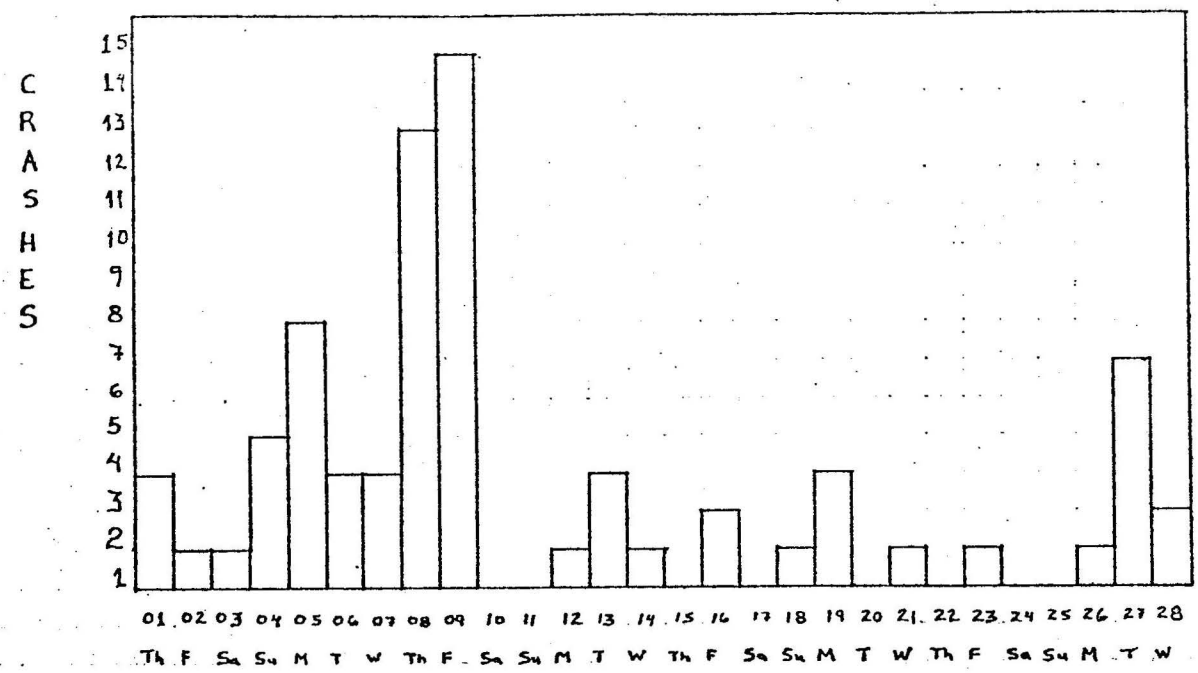
Explanation and Recommendations

1. The majority of errors that occurred were related to either the link or SUPIO statusing of the link. D. Mears' correction to 1SU to check 7 times for zero status has dramatically reduced the number of aborts. A diagnostic was added to Supio for false zeroes and after the engineering upgrades to the link this error has not recurred.

2. The major emphasis of the RJE software was better diagnostics, checking for code corruption, and fixing diagnosed bugs. Code no longer needed was removed and data constructs were moved from code areas to work areas. This should allow for automated code corruption analysis. A bug in the 1004 error recovery code was fixed on March 4 along with the startup procedure and message processor.

3. There were a number of times when SUPIO displayed an erroneous message stating that the PDP 11 was hung when it wasn't and proceeded to drop several ports. Users would then dial into the system and instead of receiving the login would get the continuation of someone's output. T. Salo fixed this problem.

FEBRUARY RJE/SUPIO DUMP ANALYSIS



SYSTEM CHANGES

RJE LINK
SUPIO/LINK
LINK
SUPIO/SET MARGINS
RJE
RJE LINK
SUPIO/RJE
RJE