

UNIVERSITY OF MINNESOTA COMPUTER CENTER
Deadstart Systems Newsletter

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NOTICE OF CHANGES TO THE SYSTEM

NOS Changes

The following changes become effective on Tuesday, 21 November. The installation date is early because of the Thanksgiving Holiday.

Tom Lanzatella installed a release 4 version of KEDIAG along with all other maintenance routines. This was necessary because other changes brought in from R4 left the R3 version of KEDIAG nonfunctional. Operations can resume the use of LP1, CP1 and CR1 under KEDIAG.

Kevin Matthews installed a new version of program ODV. This version allows operators to switch queue files to the otherwise illegal site 66. This version also repairs a problem in SEND.

Jeff Drummond installed a new version of COMPCMO which does not depend on the symbol NOS in order to produce an assembly meant for a NOS system. Earlier this year, COMPCMO had been altered to make use of conditional modification so that the same source could be used on both KRONOS and NOS. Unfortunately, this was not common knowledge and a KRONOS version was accidentally used for a fix on the C74 which caused the mysterious dayfile problem on the 6400 on Thursday, 16 November.

Don Mears reworked the local feature which detects a job hung in recall to reside in LMA rather than in LMB. This change is in anticipation of a large change in SECEDED error reporting in LMB.

Tim Hoffmann installed the following changes.

- 1) Program COMCRDW was altered to check for a zero word count and to not loop to time limit in that case. This bug will be PSRed to CDC.
- 2) Tim installed his proposed change to the LIMITS command (see DSN 4, 21 p. 178). For users with CMUC, a UN parameter is now legal on the LIMITS command.
- 3) Tim installed a NC option into COPY and into COPYEI (see DSN 4, 20 p. 169). This parameter is used to specify the number of copies to perform.

Marisa Riviere repaired two small errors in CALLPRG stemming from the recent change to search a random CALLPRG index.

Brad Blasing provided a new version of the Cyber Loader. This version uses the CMU if present. This change is thought to save about 12% on loads performed on the C172. Brad also repaired an error in LINK which caused load with preset addresses to fail.

Hesung Byun contributed two important changes.

- 1) The DSD commands MSG,SUPIO or MSG,EXPORT are now fully operational - OPERATIONS NOTE. This includes the "uping and downing" of SUPIO sites.
- 2) The command ROTARY CHECK has been restored as a legal IPRDECK entry.

KRONOS Changes

No KRONOS system will be installed this week.

PROPOSED CHANGES TO THE SYSTEM

For the Record - by T. W. Lanzatella

The following changes have been suggested by several individuals and are presented here for public edification.

- 1) The time-sharing STATUS report should include MID.
- 2) The banner page should include target machine MID and destination machine MID.
- 3) Validation for the command: PASSWOR(,NEWPW/UN=...) should be changed to CMUC from CSTF.
- 4) Help-Line personnel have requested the command: PASSWOR(OLDPW,NEWPW/UN=...) be altered to verify OLDPW and to disallow the change if OLDPW is not correct. The command would still unconditionally change the password if OLDPW is not specified. The form of the command PASSWOR(OLDPW,OLDPW/UN=...) could then be used to check the validity of a password without having to USER to the account.

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Pascal Software Tools - by Andy Mickel and John Strait

Over the last couple of years, we have acquired (and have even written ourselves) a collection of (portable!) software-writing tools to aid the Pascal programmer.

They include programs to cross-reference (PASCREF), prettyprint (SPRUCE and NEATEN), compare source (COMPARE), document (PROSE), decompile (PASCODE), change character sets of (PASVERT), and measure performance of (AUGMENT and ANALYZE) user Pascal programs. The user demand for such tools is high (some users have resorted to writing some of the tools themselves in the absence of these tools. While PASCREF has never been documented (except on WRITEUP(CONTROL), it was used 533 times on the Cybers and MERITSS last year. SPRUCE was also not documented (word circulated privately) and was even under FETCH, and was used 732 times on the Cybers, and 1025 times on MERITSS last year. (For comparison, the equivalent FORTRAN editors TIDY and POLISH, both documented, were used 590 and 452 times on the Cybers and 118 and 39 times on MERITSS respectively last year.

Several tools are now ready to go and are documented on the preliminary indexed writeup PTOOLS (which a few of you have seen). We have taken pains to preserve the portability of these tools by using a separate modset specifically for CDC-6000-dependent features. We would like to make more of these tools control-statement callable under CALLPRG. Some, however, are best left under FETCH.

PASCREF and PASVERT are already control-statement callable. PASCODE, AUGMENT, and ANALYZE should remain FETCH. COMPARE, SPRUCE, and NEATEN would be best made control-statement callable. Why two prettyprinters? Well, ask any Pascal programmer, and you will find that his or her favorite coding style is as unique as handwriting, fingerprints, etc. SPRUCE offers every conceivable option to conform to the style of even our most picky users who excel in seeking out obscure wants and desires from our operating system (no names here!). NEATEN takes the opposite philosophy, which is to provide no options at all--which in contrast to SPRUCE--provides the capability to do localized prettyprinting on program fragments (SPRUCE reformats right down to the last semicolon only on complete, syntactically-correct programs). NEATEN is thus perfect for students' programs, which should help the readability of their programs for the eyes of consultants and graders alike.

COMPARE is being heavily used by the systems group code-review process handled by Tom. It compares two text files for equality and reports their differences and optionally will produce a MODIFY modset to convert one file to the other.

SYSTEM MAINTENANCE: People and Procedures

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

The following proposals were rejected or accepted.

- 1) Steve Collins' proposal to change the parameter used to set the user control word on all PF commands from UC to LS was defeated (see DSN 4, 21 p. 177). The majority of systems group members felt that UC was more appropriate.
- 2) Tim Hoffmann's proposal to add a UN option to the LIMITS command was approved (see DSN 4, 21 p. 178).
- 3) Tim Hoffmann's proposal to move entry points REWIND, R and program RWF into a small program separate from FILES was rejected (see DSN 4, 21 p. 178). A majority felt that little performance improvement would be achieved and we would lose the benefit of the FILES look-ahead capability for REWIND and R.

Several VIM attendees presented reports on the recent VIM conference. See MJF, KCM, RAF, AGN or SAR for details. Larry announced that the DH-11 has finally arrived. We will be switching the 2550 back to the C172 as soon as possible.

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Callprg and Library Tape News - by M. Riviere

On November 14, the Cyber Callprg index was modified with the introduction of a future version of GPSS, requested by S. Lai and a new Fetch type package, PROSE, requested by J. Strait. PROSE is a text formatting program that processes the new character set. Documentation for PROSE is available through WRITEUP.

On November 16, ACCSTAT was reintroduced on the 6400 Callprg index. I deleted ACCSTAT by mistake when resequencing CPOPL64 on November 14. I apologize for the error.

No Callprg index or Library Tape modifications were requested for November 28. After November 28, the next set of modifications for Callprg and the Library Tape will be taking place on December 7. Modifications for that date should be submitted no later than noon, November 30.

I will be taking vacation starting December 20. I would like to be able to prepare a Library Tape and a Callprg Index containing all the planned end-of-the-quarter modifications before I leave. I would be grateful if anyone who has this type of modification could please send them to me, if possible, before December 15.

I have been receiving in the past a few Callprg Index modification requests without including the Modify directives to insert the entries in the needed place of CPOPL or CPOPL64. I have also been receiving modification requests without comment cards associated with them. I did not return them because it was perhaps more practical to add the needed cards myself. This started to happen during the KRONOS/NOS transaction time where we had enough confusion over which Program Libraries the modifications have to be implemented, but it should not continue now. Whoever got spoiled with this procedure in the past should go back to follow the old scheme now, please.

Now, there are two Program Libraries for Callprg. CPOPL for the Cyber version and CPOPL64 for the 6400 version. Both libraries are Fetch type packages. Editing deck CALLPRG on these libraries and obtaining a list of the compile file produces the needed information for creating the Modify directives for inserts and deletes. Additionally, the compile file created from CPOPL64 contains also a description about the format of the comment cards. Modifications to CALLPRG do not necessarily have to be submitted on cards. They can also be placed on public permanent files.

Another subject about CALLPRG that I also would like to bring up here is a recently made modification on RFM that enables the program to flag unused files on a catalog file information list. Files are flagged with one, two, or three asterisks, according to the time that they have not been accessed. (One asterisk for more than 25 days, two asterisks for more than 60 days, three asterisks for more than 90 days.)

A full file catalog list for CALLPRG or WRITEUP can be obtained by the statement:

PFCAT(UN=CALLPRG,PN=SPL,L=LIST,R)

The R parameter causes the files to be sorted on the list grouped by the account numbers which created them. The account numbers are obtained from RAVAL. If the R parameter is not used, no list is produced but a source file of unsorted file names and catalog information is created (S=SOURCE by default). A partial list for a given account number can be obtained by the statement:

```
RFCAT (UN=CALLPRG,PN=SPL,I)
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Where account numbers are provided as interactive input. For any user's own files a call to RFM such as:

```
RFCAT (S=PNAME)
```

will produce a short file catalog information list of his account files on file FNAME. Asterisks will indicate the unused files. I find this list handy for reviewing file status before the end-of-the-month archiving procedures. Please obtain a RFCAT report once in a while and review file usage.

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System Strategy Committee Minutes - T. W. Lanzatella

The purpose of this meeting was to take stock of current projects and to attempt to reach a unified view of the future trends of NOS at UCC. Shortly after the meeting began we concluded that anything beyond a year into the future was not worth discussing. The prospects of a new machine and communications requirements help to cloud the future. Granting this we therefore eliminated release 5 of NOS from the discussion. This release is due in the second half of 1979 and could not possibly be installed until summer, 1980. This fact in turn eliminated any need to consider installing NAM for production purposes since, according to the last VIM conference, NAM/RBF is unacceptable before release 5 and even then cannot provide any wideband support (EXPORT/IMPORT high speed).

The discussion turned to release 4. We identified the following advantages and disadvantages of converting to release 4.

Advantages:

- 1) Documentation for release 3 of NOS is no longer provided by CDC. If we convert to release 4, the system will match the documentation currently being sold by CDC--our most powerful incentive.
- 2) A big advantage of converting would be the elimination of 10-15 thousand lines of code from JPL which have been installed into R3 to accommodate full track and other R4 features.
- 3) A large part of the work in converting our numerous local features to NOS was caused by radical changes to queue utilities made by CDC. But, a large amount of work is yet to be completed in this area, namely, a utility for operations to make enquiries about queues. New programs are added at R4 which would likely make this utility more feasible.

Disadvantages:

- 1) Yet another system conversion. Some systems personnel place negative worth on the task of hauling 59112 lines of code through another level conversion.
- 2) Support for 607 tape drives is removed from NOS at R4. The ramifications of this are:
 - a) Run a package written by B. Kearcher which retrofits 607 support into NOS at the expense of ATS support (6250BPI). This may be unwise since if we install an 885 disk we should dump to 6250 BPI tape.
 - b) Drop the 607 drives and purchase 667 drives. Very expensive.
 - c) A remote possibility suggested by DWM is to keep the 607 drives but allow access only to I-mode tape and to use two 657 drives for all other 7-track formats. This would be done by reinstating certain code deleted at R4 and installing our own code to force 657 usage for other than I-mode tape. This route is certainly the cheapest but also the most uncertain since nobody understands LMT.
- 3) Our extensive changes to RESEX and MAGNET for express tapes may be extremely difficult to install, again, due to the new ATS support.

Of course any decision to move forward must be tempered by prior system group obligations. The following list of uncompleted system group projects were identified.

- 1) In order to install DIVERT, programs 1CJ and DSP should be rewritten. This is not truly a rewrite but we will probably take the R4 versions, move them to MPL and change them without any regard for future CDC changes.
- 2) SUPIO is not yet validating sites.
- 3) Field length restrictions before 6:00 p.m. have not been installed.
- 4) The DELAY queue is not fully implemented.
- 5) Nobody understands time limits under NOS.
- 6) The PMS graph programs have not been converted yet.
- 7) Queue enquiry utilities are not complete.
- 8) EXPORT job display for IMPORT station operators.
- 9) User settable page limits.
- 10) MODVAL enhancements and password hashing.
- 11) IMPORT rewrite.

In conclusion, the following action items were specified.

- 1) The systems group should work closely with user services and produce a writeup (DEGRADE?) which gives those users with R4 manuals the information to run on our R3 systems.

- 2) Uncompleted systems group projects should be wound up (within reason) by year's end so that serious investigation into R4 can begin in January.
- 3) The advantages and disadvantages of moving to R4 should be expanded in detail.
- 4) We should consider the possibility of selectively installing all nice R4 features into R3. This alternative is quite unappealing since instead of decreasing the size of JPL, several thousand lines would be added.

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Cyber 74/172 Deadstart Dump Analysis from Friday, 3 November, to Thursday, 16 November - by K. C. Matthews

Tuesday, 14 November

09:15(DD24)	Cyber 74
PP program DSP hung at a control point. It turned out that a ROUTE of a magnetic tape file could do this. The immediate result was that a level 3 recovery was needed. The DSP problem has been corrected.	
10:08	Cyber 74
Same problem as above.	
00:03(DD-1)	Cyber 74
Same problem as above.	
00:11	Cyber 74
Same problem as above.	
11:32(DD-32)	Cyber 172
A CPUMTR error exit occurred. The dump showed that the system exchange package for CPU 1 was in low core. There is no explanation for this yet.	

Thursday, 16 November

08:00	Both Machines
An attempt to fix the DSP problem from Tuesday failed. It turned out that with the version of DSP used, a deferred route would wreck a permanent file device. Three permanent file devices on each machine were wrecked and had to be reloaded. The systems were up for production at around 10:00.	

In addition, it turned out that the freshly assembled "good" version of DSP wasn't exactly correct. Dayfiles from submitted jobs were always returned to the 6400 rather than the proper CYBER. This problem was introduced by a required MODIFY option needed for assembling DSP. This has been corrected, so that DSP can be assembled normally.

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6400 Deadstart Dump Analysis (11/6 - 11/19) - by R. A. Williams

<u>Date</u>	<u>Description</u>	<u>Tape</u>
	There were no unscheduled deadstarts during the period.	