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NOTICE OF CHANGES TO THE SYSTEM

NOS Changes

The following changes become effective on Thursday, 12 April.

Kevin Matthews changed delay queue processing in LSP so that low rate hours begin at 2300 rather than 2400.

Don Mears altered some local debugging code in 1T0 so that rather than hang when attempting to write zero words to CM the routine simply issues an error message. Don also repaired an error in the recently installed direct data transfer facility which caused RPT errors.

Tim Salo added provisions to SUPIO for a site name series beginning with 3 and installed site code 3A. Tim also modified 1SU so that SUPIO will no longer abort if CPUMTR modes out.

Marisa Riviere fixed UC parameter processing in PFILES so that bit 59 of the UCW is only set when the UCW is actually changed. Previously, the bit was set for any PF operation. Marisa also added subsystem and ASCII mode options to RFM along with an option to catlist a single file.

Bill Sackett added code to TELEX which causes the BASIC compiler to be called directly rather than through LDC (see DSN 4, 23 p. 190). Bill also installed an extensive change to PFPACK from MECC which speeds up disk packing.

Jeff Drummond installed the following changes.

- 1) An L option was added to BLANK which functions identically to the FI option. The manual states that L may be used to specify file identifier. The FI option in BLANK is a local feature.
- 2) Program ENQUIRE was repaired so that the E,0 command does not abort.
- 3) Program USERS/DSD was altered to disallow ASCII input mode.
- 4) Argument processing in COPYMF was repaired to always assume a decimal base (rather than a random one).
- 5) Jeff added a new common deck, COMCMCF, which moves an arbitrary character field from one location to another.

Steve Collins reinstated the PASSWOR option where the command form PASSWOR (OLDPW,NEWPW/UN=...) validates OLDPW and fails if OLDPW is not correct. Steve corrected NOTIFY so that all months have the correct number of days. Previously, all months had 31 days.

#### KRONOS Changes

Tim Hoffmann installed a new version of ALTER on KRONOS with mostly cosmetic changes.

Steve Collins installed changes to NOTIFY, PASSWOR and PFILES as above.

Bill Sackett installed changes to PFPACK as above and corrected TSPFM so that an ASCII option works on the OLD command.

#### NOS 485 Changes

Kevin Matthews installed the following changes.

GENDSP - A change to DSP which moves code to make room for our TID and MMF enhancements.

TID - The mod which installs most of our terminal ID enhancements.

QPRI - A mod to DSP which causes output file queue priority to be based upon file length.

GENMMF - Our local enhancements to MMF and user ECS.

RTCOPY - The mod which causes routed files to be copied to a shared, scratch device.

QFMHLP - A space saving mod to QFM.

Kevin also installed changes to UQM and ODV which render the routines at least temporarily usable. A noteworthy quality of the NOS 485 system at this stage is that we can run NOS 485 on the Cyber 172 and NOS 460 on the Cyber 74 with shared disks.

Tim Hoffmann converted the following modifications.

GEN004 - A generalization mod in COMSACC and MODVAL. This change also installs our LIMITS enhancements.

ARGS10 - A change to COMCARG which allows the equal sign for local file processing.  
 AUXFAT - A change which allows fast attach files to reside on an auxiliary device.  
 CACC - The change to MODVAL which installs the CACC access word bit (multiple user cards).  
 CARGU1 - Provide conditional assembly in COMCARG to specify the maximum number of characters per parameter.  
 CARGU2 - Disallow equal sign as general separator in COMCARG if CARGDOH\$ is defined.  
 CARGU3 - Discern the difference between XX and XXX for non-equivalenced parameters in COMCARG.  
 CARGU4 - Allow three character parameters in COMCARG.  
 CATAU1 - A change to error message documentation in CATALOG.  
 CATAU2 - Adds the BR option to CATALOG.  
 CATBR - Adds the BR option to CATLIST.  
 CATMSG - Deletes colons from the CATALOG B-display message.  
 CDSO - Adds CDSO to the access word (DSD permission bit).  
 CMAGU1 - Generate RJ =XNAME for several macros in COMCMAC.  
 CMUMLD - Use CMU for storage move if 2 CPU's, CMU and 170 type mainframe.  
 CONVU1 - Repairs CONVERT conversions and EOI processing.  
 CONVU2 - Add CV = LISP, SNOTS, SNOBAT and TS=TTYD options to CONVERT.  
 COPT - Provides a C option for even parity tape operations in CATALOG and TDUMP.  
 CRDWU1 - Provide conditional assembly to exclude subroutines RDW=, RDX= and LBC=.  
 CUPCU1 - Provide conditional assembly to specify the maximum number of characters per parameter in COMCUPC.  
 CWPRT - Add CW option to TDUMP to select control word dump.  
 CWTWU1 - Provide conditional assembly to exclude subroutines WTW=, WTX= and DCB=.  
 DAYFU1 - Correct "DAYFILE,, \$2./\$." error.  
 DEFAULT - Change certain validation formulas and default limits.  
 DISU1 - Add ROL command to DIS.  
 DMPMSG - Enhancements to exchange package dump in CPMEM.  
 DOBIE - Dump output buffer if error exit in CATALOG.  
 EBRIEF - Add brief mode to the ENQUIRE command.

JEJN - Repair E,JN=XYZ processing.

ENQMID - Display MID for ENQUIRE and ENQUIRE(OP=B).

ENQMOD - Adds most local features to ENQUIRE.

FOSTER - Permits permanent dayfiles to YZE6009.

FSTMVE - A speedup mod for COMCMVE.

GENLFM - A mod to generalize LFM functions.

GNLFME - A mod to generalize LFM error codes.

HEXDMP - Provide a hexadecimal dump option in TDUMP.

KRONCM - A change to COMSACC which causes CM calculation to work as in KRONOS.

LCKNDP - Propagate file ID across PACK, SORT and RESEQ.

MIDSYM - Define U of M machine ID's in PPOOM.

MSPACK - Disallow packing non-mass storage files.

NAMES - Install abbreviated names for COPYBF, COPYCF, etc.

NOCOL - Use COMCZTB instead of COMCSFN in CATALOG.

NODRP - Install the NODROP command.

ONOFF - The MODVAL ON and OFF commands.

PRIME - Allow lock and unlock of primary file.

PWSTAR - Allow asterisks in passwords.

RDW2 - Prevent RDW= from looping if word count is zero.

RECTYP - Add USER and DUMP type records.

RNMFTS - Cause LFM RENAME function to enforce FET length.

RSQFTS - Repair FET too short error in RESEQ.

STFMOD - Cosmetic changes to COMCSTF.

STOPT - Install ST option in CATALOG.

SUN - Install the SUN command.

S02122\$ - Correction for TOV calling sequence in MODVAL.

S02230\$ - Notify user of ECS parity errors in CPMEM output.

TDUMU1 - Add various TDUMP options.

ZAPU1 - Minor change to COMCZAP.

ZAPU2 - Repair COMCZAP to prevent no Z arguments from causing mode 1 abort.

Hesung Byun converted the following changes.

CPYBU1 - Enhanced error messages from COPYB.

CONPAD - Convert physical to logical address in MST.

DOCMU2 - Local enhancements to DOCUMENT.

DOCMU3 - Correct garbage page headers if title card lacks title in DOCUMENT.

Jeff Drummond installed the following changes.

S02366\$ - A PSR to fix L-format tapes in LMT.

S02292\$ - A PSR to fix lost forms codes.

S02408\$ - A PSR to fix LFM processing of unlocked execute only files.

S02420\$ - A PSR to keep TCS from hanging on EXCST if the command is a comment (\*).

S02429\$ - A PSR to fix LRI processing of bad rollin files.

S02446\$ - A PSR to fix ODF not updating MS accumulator in all cases.

S02462\$ - A PSR to fix PFILES memory management.

S02407\$ - A PSR to fix critical errors in multi-file tape processing.

RCLHNG - A mod to detect and abort jobs which hang in recall.

DSDDPR - Display P-registers on DSD P-display.

DSDFIN - Install the DSD FIND command.

DSDH - Install two letter queue designation for H-display.

DSDLCK - Lock and log certain DSD commands.

DSDONE - Install single letter display name request in DSD.

DSDSYN - A mod to DSD to force preset syntax to be the same length.

DSDTID - Add TID field to Q and H displays.

SUBSYS - Add local subsystems.

GENNFT - Add local changes to file type micros.

DCPXJP - Force load of DCP block when a second CPU is available in CPUMTR.

EQDOWN - Make downed tape units part of the resource environment.

PNO - Allow packname 0 to represent the default family.

Jeff added the common deck COMCMCF to WPL485 (as above).

Brad Blasing installed the following changes.

LOADBK - The change which allows a choice of either CYBER or LINK loader.

HASHPW - The mod which installs password hashing.

GEN006 - A space saving mod to CONTROL.

CALORD - Change order of procedure file call search.

PROPOSED CHANGES TO THE SYSTEM

ARCHIST - by T. J. Hoffmann

As part of the clean-up of the end of month archiving procedures, I am installing a program ARCHIST which will replace the current AFLISTS writeup. It is a CALLPRG product, and a writeup is available. The format of the command is: ARCHIST(UI=index, F=filename, L=listfile, PN=pack, MI=machine id, M=# of months). The command ARCHIST is equivalent to ARCHIST(UI=current index, L=OUTPUT, M=1), with all packs, all files, and both machines selected.

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PACKINFO - by T. J. Hoffmann

Following Jeff Drummond's deproposal of the DISKUTI modset, I am proposing the following CPM function to replace it. This also removes a UFM modset.

Call:

24/OLCPMP, 12/112B, 18/ADDR

Addr=42/Packname, 18/0

60/0

Returns:

Addr=42/Packname, 16/0, 1/S, 1/F

60/TDGL word from MST

S = 1 if device is shared, F = 1 if pack found and available.

SYSTEM MAINTENANCE: People and Procedures

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

The following proposals were accepted or rejected.

- 1) Tom Lanzatella's proposal to delete several obsolete system features was accepted in its entirety (see DSN 5, 6 p. 43).
- 2) Jeff Drummond's proposal to change the default tape type from MT to NT was accepted (see DSN 5, 6 p. 44).

B. E. Blasing

- CPM at 485 (95)
- CCL/KCL at 485 (10)
- Other 485 mods (25)
- Assorted minor bugs (50)
- Cyber loader (on-going)
- C-cross compiler for PDP-11's (P)
- Convert MPL decks for 485 (P)
- Update writeup memory (P)

H. Byun

- Release 4 upgrade (20)
- Convert MPL decks for 485 (P)

J. J. Drummond

- Conversion to NOS (40)
- Rewrite Tape Users Guide (10)
- Install Modval enhancements (25)
- Install SMP enhancements (50)
- NOS 485 PSR's (50)
- Move automatic dayfile return for submit jobs out of TRANSIT into a CPU program (P)
- 885 disk support (R)
- Make NOS 1.3-485 work (R)
- Generalize our MMF code for 3+ mainframes (R)
- Reliable RJE front-end (R)

R. T. Franta

- Shorten SUPPIO Banner Page to 132 columns (R)
- SUPIO B-display must be made to work (R)
- AUTODIVERT and page limits are very needed (R)
- Site validation (R)
- QUEUE command (R)
- Reinstate SUPPIO time-out message (R)
- We need statistics for DDCMP type terminals (R)
- Security enhancements (R)

M. Frisch

- Listable output file for LIMITS as in LIMITS(L=LFN) (R)
- Automatic archiving and restoring of permanent files (R)
- Additional usage statistics: CPU time of executing FORTRAN programs, SPSS, S2000, etc. (R)
- Automatic CALLPRG facility: Staff can change their own CALLPRG entries (R)
- Combine RFM and upwrite so that staff changes to writeups cause a change to WRITEUP(INDEX) (R)
- Users should be able to drop their own jobs (R)

T. J. Hoffmann

- NOS 1.3-485 upgrade (60)
- End of month archive (50)
- MULTI on KRONOS/NOS (P)
- MECC full track code for KRONOS (P)
- Have SUPPIO call OSC for site validation (P)

T. W. Lanzatella

- R4 upgrade (20)
- 212A compatible modem testing and purchase (20)
- System software backup (50)
- Convert MPL decks to R4 (0)
- Revise HELP documentation (P)
- Convert rotary index allocation scheme on C74 to the C172 method (P)
- Install expanded PFC entry code (P)
- Fix bugs in KRONOS (R)
- Make use of job class hooks in system and generalize P (R)

- 3) Jerry Larson's proposal for special queues and forms codes was accepted in principle. Unfortunately, the implementation will be a lot of work and everyone is busy with the R4 upgrade. Two questions were raised. 1) How do we deal with large plot files. 2) How do we treat large, secure special forms. One immediate problem is that we can display only a limited number of forms codes. Don Mears will investigate a change to UQM which would allow more forms codes to be displayed (see DSN 5, 6 p. 44).

Larry Liddiard mentioned that we may be asked to accommodate an IBM node in our network.

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Callprg and Library Tape News - by M. Riviere

On April 4, Lincoln Fetcher introduced three Fetch type packages on Callprg: MLABELS, DOPROG, and MAILING. These three packages comprise a mailing label system. Also on April 4, Steve Lai changed the entry for the current version of GPSS to reduce its required field length from 70000 to 40000 words.

On April 3, Tim Hoffmann changed the current version of CATLSYS. Tim also modified the writeup that described the package. The CATLSYS writeup is now an indexed writeup.

On April 17, Tim Hoffmann plans to introduce a new Callprg index package, ARCHIST. ARCHIST is going to be control card callable. Tim has a proposal for ARCHIST in this DSN.

Also on April 17, the Callprg index entry for UPWRITE, the Writeup index maintenance utility should be modified on either the Cybers or the CDC 6400 index. UPWRITE happens to be Fetch type in one machine (6400) and control card callable in the others (Cybers). Both entries should be consistent. Although UPWRITE is used only for internal UCC maintenance and it should be Fetch type on both computers, I am afraid I'd find a lot of opposition from UCC staff if I changed the Cyber's entry. Can we please have a fast vote on it?

I will start building the NOS level 485 library tapes during this week. The first tape will be used on NOS 485 System's time on April 21. Initially, I will have in the tape the following products: FTN, FCL, AAMLIB, BAMLIB and SYSLIB. I will be adding current or updated products on request. Please let me know if you have any of your products ready to be included on the first tape, before April 19.

The next set of Callprg and Library tape modifications for the current level will be taking place on May 1. Modifications for that date should be submitted on April 19 before noon.

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System Group On-Going and Summer Projects - by T. W. Lanzatella

Listed alphabetically below are the results from the systems programming project surveys. Three types of projects are listed: On-going (% complete), preferred (P), and recommended (R). Areas of the R4 upgrade which may prove to be troublesome are listed at the end.

K. C. Matthews

Release 4 upgrade (25)  
Bathroom in basement (50)  
Divert (P)  
Rewrite DSP (P)  
FL proposal (that we talked about a year ago) (P)  
885 disk implementation (P)  
Documentation (P)  
Finish delay queue (R)  
Start working on release 5 (R)  
Archive automatic reload program (R)

L. E. May

DDCMP support and emulation for PDP-11 users (75)  
RJE project (30)  
Enhancements and user requested features to DDCMP (P)  
Add 200UT option to communications package (P)

D. W. Mears

Rewrite plotter driver (2)  
Change LTD/PDP programs to support more than 64 ports (0)  
Improve Link test (90)  
Using fixed heads on FMD disks (P)  
Allow Telex PDP-11 program to emulate 6671 for EI200 (P)  
Add user settable page limits (P)  
Make NOS R3 reliable and install R4 products in R3 so we need not waste our  
time converting to R4 (R)

A. G. Nelson

RJE project (1004 upgrade) (10)  
Install a test version of NAM/CCP with Marisa Riviere (0)  
Document the PDP-8 based 200UT emulator (10)  
Continued involvement in long range communication systems planning (P)  
Implement a MODCMP or PDP-11/70 based communications front end for Cyber systems (R)

S. A. Reismann

Install and test 485 products (50)  
MULTI (P)

M. Riviere

Install 485 products (60)  
CALLPRG, WRITEUP, Library Tape, MFEBR, RFM, etc. (on-going)  
Develop CALLPRG maintenance procedures and programs (P)  
Enhanced file residency mechanism in CALLPRG (P)

T. J. Salo

West Bank import software (30)  
Long range goals for Cyber operating system (R)  
Long range plans for data communications with the central site (R)

Troublesome Areas of the R4 Upgrade.

- 1) IAJ is running out of space (BEB).
2. CCL/KCL needs to be studied in order to determine which features should be moved into CCL, which should be discarded and what should be duplicated in CCL/KCL (BEB).
3. Less space in DSD (as usual) (JJD).
4. CDC resequenced PFM (JJD).
5. PFPACK is a mess (JJD).
6. 16 word PFC entry will affect many local programs (TJH).
7. Tape system enhancements will be difficult to install (TWL).
8. Lack of room in MTR and SET may make PMS mod hard to install (KCM).
9. NMSD has been increased from 30 to 40 (KCM).
10. Some items such as the loader and FILINFO request have changed radically between 460 and 485. I'm finding routines which should work at 485 but do not fare so well at 460 (SAR).
11. SYSLIB installation: CDC installation procedures now obtain the most frequently used common decks from the COMPASS OLDPL. These decks are not the ones which we maintain and enhance. Shall we continue using the ones from WPL or follow CDC procedures (MR).

//////////

Cyber Deadstart Dump Analysis from Monday, 19 March through Sunday, 8 April - by  
K. C. Matthews

Tuesday, 20 March

11:06 (DD-36)

Cyber 172

There was a CPU monitor error exit which left an exchange package in low core. It appears that PPO was trying to perform an exchange jump on CPU1, and that CPU2 was also just entering monitor mode in response to a Central Exchange instruction. The dump looks the same as one which occurred about a month ago.

11:30 (DD-37)

Cyber 172

I/O, which processes terminal output for TELEX, hung. It hung because it detected that it was trying to write zero words to central memory, which would really write 4096 words of central. It is hard to determine what caused the original request.

Friday, 23 March

16:08 (DD-40)

Cyber 172

Another CPU monitor error exit. The circumstances look about the same as on the Tuesday crash.

Monday, 26 March

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18:13

Cyber 74

The system checkpoint program, LCK, was trying to write the TRT for equipment 11 on that disk. The error log was being filled with error messages as LCK tried to write the second copy of the TRT that we keep on the end of the disk. We manually stopped LCK and let it try again. The same thing happened twice more, and then the checkpoints began to work fine. A deadstart was required to free up the three PPU's which had hung copies of LCK in them.

Tuesday, 27 March

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09:42 (DD-42)

Cyber 172

The system hung up. The problem was that the ORF overlay was called by CIO to update a fast attach file. We have an odd version of ORF which is partly Release 3 and partly Release 4. The same problem occurred about four months ago, and Don Mears figured out at least why ORF was hung. He told me, but unfortunately we have both forgotten the cause. Neither one of us has had the chance to examine this dump to rediscover it.

Wednesday, 4 April

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09:32

Cyber 74

The diagnostic program CUI failed. We tried to run it several more times and it always stopped. The system was stopped and given to the engineers, who found and corrected a floating add problem. If the diagnostic program had not been running, it might have been a long time before this problem was discovered.

Thursday, 5 April

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At 13:20 the power went out for a second and brought all 4 mainframes in the building down. The machines were brought up at around 14:10. Export hung soon after on what appeared to be a bad output file. After the system was up again for a half hour, it was noticed that the time had been entered incorrectly. We were informed that a deadstart was required to set the time back, so a level three deadstart was performed at 14:55.

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6400 Deadstart Dump Analysis (3/5 - 4/8) - by R. A. Williams

<u>Date</u>	<u>Description</u>	<u>Tape</u>
790322	A fix was installed to allow TELEX to accept input data at full 30CPS speed (it had been dropping a character intermittently at start of line). The correction produced many abnormals and the system was taken down to remove it.	N.A.
790326	A central memory stack went out.	Fixed
790403	One of the 6676 multiplexers has been inputting some lower case characters incorrectly for several months. This problem also caused paper tape input to insert 0's at the start of some lines, intermittently. The problem was corrected this morning and the system came up late as a result.	Fixed
790405	844 disk channel 7 hung for unknown reasons. DCN'ing the channel was not possible as DSD asked for a PP to do it. Both problems are being studied.	DDT-41

<u>Date</u>	<u>Description</u>	<u>Tape</u>
790405	A power failure caused the system to go down.	Fixed

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

3/20 16:33 lTO hung on some trap code I installed a year ago. The dump shows that a previous call to lTO had left the terminal table in an illegal state. The trap code has been changed to issue a message to TELEX's control point instead of hanging. I am still investigating.

//////////

Plotter Crash Analysis - by D. W. Mears

For the period 3/20 to 4/6.

On 3/20 and 3/21 the plotter was run with a different CPU and memory so that the problems described in the last plotter crash report (see DSN 5, 6 p. 46) could be worked on off-line. During this time there were 7 crashes caused by link malfunctions.

Since 3/22 when the fixed CPU was reinstalled, there has only been 1 unexplainable crash. In this, the interrupt vectors were zeroed out.

There were 3 reloads because the plotter went not ready.

There were 2 reloads after plots were ENDED.

There were 3 crashes caused by link malfunctions on 4/6. The diagnostics found a solid link error. However, in the time it took the engineers to walk to the computer room, the link fixed itself.

//////////

RJE Crash Analysis - by Elie May

3/17 SUPIO abort CPU monitor error. T. Salo has a mod to prevent Supio from crashing if memory word 0 is non-zero.

3/19 SUPIO abort - SUPIO in A status. Software failure that will require dumps to be taken for diagnosis.

3/19 RJE abort - insufficient information as to cause.

3/20 SUPIO abort - Link went inactive during channel transfer.

3/22 RJE abort - power failure.