

UNIVERSITY OF MINNESOTA COMPUTER CENTER
Deadstart Systems Newsletter

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NOTICE OF CHANGES TO THE SYSTEM

Tim Hoffmann (via Steve Reisman) contributed changes to TELEX and 1TA which install the COBOLTS subsystem.

Kevin Matthews repaired a minor 16-word PFC conversion error by increasing the subsystem field size in the catalog entry from 3 bit to 4. This is the only oversight to surface since the conversion.

Steve Collins changed MNFTS and TSF subsystem processing so that T=0 is a legal RNH/RUN option. This is in accordance with concurrent changes in the default tracing options used by MNFTS and TSF.

Bill Sackett changed the way SYSEDIT behaves when control point 1 cannot be storage-moved down. Previously, SYSEDIT would abort in this case. Now, an informative message is issued but the program does not abort and the dead space below control point 1 is left. The change was made in order to guarantee that whenever ECS breaks, all ECS resident programs can be moved back to disk.

Andy Hastings installed the scroll-dayfile feature into TRANSIT (see DSN 6,13 p. 122). All dayfiles will be truncated at 64 PUR's and placed at the beginning of file DAYFILE. Fill DAYFILE can never be larger than 192 PRU's.

PROPOSED CHANGES TO THE SYSTEM

One, two, three...Infinity:- By B. E. Blasing

The "*" postfix character on many XEDIT commands is commonly believed to mean to repeat the command over the rest of the file (e.g. L/HONK/*). In reality, it means repeat 99,999 times (exactly). Since XEDIT supports infinite sized files, the value of "*" should be changed to infinity (not 128k or 256k either). Also, 18-bit arithmetic should be used when computing repeat counts so that L/HONK/270000 is not the same as L/HONK/7856. This latter problem is probably a bug fix rather than a feature.

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This is the voice of Mission Control... - By B. E. Blasing

When a Cyber 170 or 700 series mainframe detects an environmental problem such as room dewpoint too high, a bit in the SCR register is set (bit 37D, shutdown imminent) and power is removed from the mainframe in either 2 or 20 minutes depending on the severity of the problem. The system currently reacts to the setting of this bit by checkpointing, i.e., rolling out all jobs and aborting all subsystems (including TELEX). The problem is that there have been several false trips of this bit in the past caused by CE's working and power-line fluctuations (which are ridden through by the motor-generators). I propose to alter LMB to delay checkpointing the system for some time period (77b seconds). A blinky message will appear at the system control point:

SHUTDOWN IMMINENT, mn SECS.

which will be accompanied by the horn honking. LMB will also issue a TELEX warning to that effect (which will be cleared if the condition clears within 77b seconds). If shutdown imminent remains set for 77b seconds, the checkpoint and step will occur as before.

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Permanent File Indirect Access Size Limits - By K. C. Matthews

The executive committee recently approved a change in the charging algorithm for direct access permanent files on the 172/74. The old algorithm charged for whole numbers of tracks on the direct access file device. Since tracks on the 844 disks are 227 sectors while tracks on the 885 disks are 640 sectors, this led to unfair charging. The new algorithm charges for the actual number of sectors in the file, with a 500 sector minimum charge per file. So a direct access file of only 20 sectors will be charged for 500 sectors.

The new algorithm will cause problems for files in the range 321-499 sectors. This is because 320 sectors is the largest indirect access file we allow. So users with files of 400 sectors are forced to make them direct access, for which the file will be charged as if it were 500 sectors. We should

probably increase the maximum indirect access file size to a number above 500. Since PFM requires this number to be a multiple of 8, 512(= 1000B) is a nice limit.

The larger limit is more in accordance with our larger track sizes. The older limits were set when most of our disks were single density 844 disks with a track size of 107 sectors. There are still two problems associated with a larger indirect track size. First, more space will probably be lost in indirect access permanent file holes. This will not be a problem at UCC since we have the PFPACK utility which is run weekly to recover hole space. The second problem is more serious. GET, REPLACE, APPEND, and SAVE requests all require file copies in PFM. The file copy is done through a buffer in the PFM PPU. This will be quite inefficient for larger indirect access files.

Several years ago, Bill Elliott considered the problem in PFM. He suggested defining a bit in the FET which would tell PFM that the buffer specified in the FET could be used for the file copy. This bit would then be set in the system permanent file control statement processor, PFILES. An efficient central memory buffer could then be used. Users with internal PFM requests would probably not have the bit set, so the old PPU copy would be used. Those users would not find the buffer suddenly used as a scratch area. When Bill proposed this feature, we decided to monitor the average PFM copy, and found that in most cases the copy was completed in one PPU buffer anyway. I propose to monitor the transfer size again during Fall quarter. If it now seems that a central buffer would be helpful, we will then re-propose that feature.

I propose that we change the maximum indirect access file size (the FS value in MODVAL and limits) to 512 sectors. This will be changed for all of our research users who have FS=320 now. The indirect/direct threshold for RETAIN should be changed to 500 sectors. We should also change CATLSYS to reflect the new charging algorithm.

Implementation note: Only 6 possible values for FS can be used. They are defined in common deck COMSPFM. They must always be multiples of 8. Only three values are used now - 32, 192, and 320. If 512 is added to the table, we must remember to charge the current table indices in the VALIDUZ file with program CHANVAL.

SYSTEM MAINTENANCE: People and Procedures

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

Our meeting was short and without fanfare. Earl Schleske's proposal to install the X command as a Callprg package was accepted (see DSN 6,16 p. 155). Tim Hoffmann's proposal to change the EXPORT STAT report to include external characteristics for each file was accepted (see DSN 6,16 p. 155). We decided, however, that the EC should be explicitly listed for each file rather than indicating only AS for A9 type files.

Larry mentioned that a tour of the CDC-Roseville Graphics area will be arranged as an extension to an upcoming system group meeting. Steve Nachtsheim is in charge of enforcing the recently unveiled software pricing policy. The fifth 679 tape drive will be here on 22 August.

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Callprg and Library Tape News - By M. Riviere

Some modifications were needed on the Library Tape during last week in order to solve a few problems caused by the compiler changes scheduled for the end of the quarter (MNF, TSF, M77, FTN). Everything is now as it was planned.

Also during last week, some additional modifications requested by Steve Reisman took place on the Cyber 74/172 Callprg Index. These modifications converted the future packages PLICOBBS, PLICOBL, PLILGOS, S2000S, S2000L, PCICOBBL, PCIFORL and PLILGOL to current.

On September 16, Kevin Matthews will be removing several of his Cyber 74/172 Callprg index entries that are no longer needed. These entries are for ARCHFIX and the fetch version of ARCHIVE, which are no longer used and for DUMPPF, LOADPF, and LOADSD which are now System products.

Also on September 16, Kevin Fjelsted will be changing the PROCPAC routines on MINNLIB. This modification corrects an error on the function that locates a file's FET, LOCFET.

On the same date, Jim Munstock will be introducing new future versions of MNF and TSF. These versions of the compilers are compatible with the CDC 485 PSR level. Jim is also re-installing the "FETCH, CDCIO" entry to retrieve MSUIO.

The last set of Callprg and Library Tape modifications to take place before the fall quarter begins will be on Sunday, September 28. On that date, Steve Reisman will be installing as system packages a large set of his 518 products which are now offered as future packages. A list of all the products will be included in the next DSN. For these products to be included on the System, a PSR 518 version of SYSLIB will be needed. We do not anticipate problems with the SYSLIB change but, just in case, a past version of SYSLIB will be made available when the change takes place.

The deadline for the Callprg Index and Library Tape modifications taking place on September 28 (and September 30, if needed) will be September 18 by noon.

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Cyber 74/172 Deadstart Dump Analysis from Friday, 22 August through Sunday, 7 September - By J. J. Drummond

Friday, 22 August Cyber 74

22:18 N.A.
Console keyboard stopped working. The CE's reseated the cable under the keyboard and cleared up the problem. The dump was taken.

Saturday, 23 August Cyber 74/172

11:55 N.A.
A power fluctuation during a storm caused both systems to go down. No dump was taken.

Friday, 29 August Cyber 74

07:59 DD2025
CIO hung on a request to drop tracks. This appears to have been caused by a bad file generated during system's time.

Wednesday, 3 September Cyber 74

07:47 N.A.
System could not come up because one of the FMD drives was not working. We eventually had to reload the device to the spare FMD drive.

Sunday, 7 September Cyber 74

19:15 DD2003
The system detected an ECS error and IIO was hung at the BATCHIO control point. A level 3 deadstart was required to un-hang the PP. ECS diagnostics generated one error during 30 minutes of testing. IIO may have been hung on the channel.

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Cyber 170-720 Deadstart Dump Analysis (8/25-9/7) - By R. A. Williams

<u>Date</u>	<u>Description</u>	<u>Tape</u>
800903	A power surge caused the PDP front end and one 6676 multiplexer to abort TELEX.	N.A.