UNIVERSITY OF MINNESOTA COMPUTER CENTER

Deadstart Systems Newsletter

24 February 1976 Vol. 2, No. 4

Send all comments, criticisms and contributions to the editor: T. W. Lanzatella
University Computer Center, 2520 Broadway Drive, Lauderdale, MN 55113

## NOTICE OF CHANGES TO THE OPERATING SYSTEM - LEVEL 9

Bill Elliott repaired a bug in program 1DU which occasionally caused a deadlock between 1DU and 1DS over the FNT channel. The bug caused several level 3 deadstarts over the recent months. Bill also added the following enhancements to EXAMINE.

1. Add usage example to external documentation.

2. Partial record lengths will be displayed only if S, L, E or B formats are potential formats of the examined tape as these are the only formats for which partial records are allowed. Further, the *.0* is suppressed.

3. A new parameter, SS, (salvage skip) was added for more control over salvage operations. This parameter allows skipping of partial or damaged blocks at the user's option.

Jim Mundstock added the proposed new WRITEUP features to CALLPRG (see DSN 2, 2, p. 2 and DSN 2,3, p. 5).

Bob Williams added a small change to COPYCAT which corrects some Access Word (MODVAL) references and installs a new option, CO = C, which enables COPYCAT to list files for any type of user in the VALIDUS file.

## NOTICE OF CHANGES TO THE OPERATING SYSTEM - LEVEL 11

Several minor changes have been placed into the level 11 system which have not yet appeared in the DSN as proposals. In all cases, the changes were installed because installation at a later time would prove costly and difficult. These changes represent parts of future features related to mini-computer/CYBER communications, SUBMIT usage validation and remote terminal user job status. Proposals for these features will appear in future Deadstart Systems Newsletters, meanwhile, all staff members who maintain programs which perform calculations based on file types or origin types should note carefully the following changes.

Two new file types were added to level 11 PPCOM (SYSTEXT).

ETFT EXTENDED TIMED ROLLOUT FILE. For future enhancements to remote terminal user job status reporting.

BIFT BINARY FILE. For use in mini-computer/CYBER communications.

Related to BIFT is the new special file name, OUTPUTB, the default name of a BIFT file.

A new origin type , SUBMIT ORIGIN TYPE, SMOT, was installed for later use in SUBMIT usage validation.

The old mnemonic, EXOT (EXPORT origin), was renamed to ETOT for name compatibility with the other origin type mnemonics.

Adding new file types to KRONOS 2.1.2 is not as easy as it was under KRONOS 2.1.1 Because the I/O queue protection adds a new class of permanent file to the system, extensive modifications must be made to the permanent file recovery programs in deadstart in order to add a new file type. Instead of making these extensive modifications, N. L. Reddy invented a new permanent file classification scheme called permanent file catagory.

Under this scheme, a permanent file is in one of three catagories; input, output, or user. Deadstart now recovers permanent files according to catagory rather than file type.

Bill Elliott installed the new queue mnemonics in DSD (DSN 2, 2, p.1).

PROPOSED CHANGES TO THE OPERATING SYSTEM

The following proposal is due to the old system sage, D. R. Lienke.

Consider the following:

1. A user originally wanted clock time and date to appear in the dayfile at his wish. It was for purposes of documenting TTY runs. A good idea, we all agreed.

2. I originally proposed to stck the date on CTIME and the proposal was amended by A. Mickel to put the date on RTIME.

3. As I now sit at the OD CRT, my dayfile indicates:

   CTIME. 11.124 sec.
   RTIME. 23491.150 sec.

   Neither of these, upon reflection, seem to be an appropriate place to have the date.

4. I therefore propose to have a new control card named DTIME.

   The command will place the wall clock time (24 hour type) and the date in the dayfile. I'm not sure we considered the wall clock time before, but the TTY user only gets the actual dayfile message, without the dayfile wall clock time preceding the message. Since we don't consider this a super high priority item (as compared to level 11), I volunteer my limited talents to implement this feature. I should also note that I desire to not use CTIME/RTIME since it would mean a change in documentation - I'd rather describe a new control card than re-do the documentation of an old one.

A New SYSLIB - by M. Riviere

I suggest that we start building a new version of SYSLIB that will, for the time being, include only the relocatable versions of the common decks from CPL, for level 11. This library could be extended in the future with other products that may be common to several compilers and compass.

This new SYSLIB should be fetch type, and such that when it is fetched its local file name is SYSLIB. Eventually, I will replace our current SYSLIB on the system by this new SYSLIB.

New WRITEUP Features - by M. Frisch

I would like to have an option available for WRITEUP to be able to print a writeup in upper and lower case letters. Since I don't expect WRITEUP to be able to directly handle this, a separate copy of any writeup to be printed in upper/lower case would be needed. WRITEUP would only select which version is desired: upper case only or upper/lower case. I suggest adding a parameter to the WRITEUP control card such as PO=L for "lower case version" of the listed writeups. If any of the requested writeups do not exist in upper/lower case form, a message such as

NO LOWER CASE VERSION OF xxx FOUND

would be given. The WRITEUP index file card would also need an extra parameter -- perhaps ULC for upper/lower case.

The motivation for this is that a number of users now have access to upper/lower case terminals -- CRT's or hardcopy like the Decwriter. Also, I plan to put all of our subprogram library writeups in machine readable form and will need to output them in upper/lower case for separate reproduction, but also as upper-case only for users to output on a teletype or line printer.

SYSTEM MAINTENANCE - PEOPLE AND PROCEDURES

User Number Limits on Level 11 - by K. C. Matthews

There are twelve indexed limits associated with user numbers on level 11. The user number has associated with it a 3 or 6 bit index field. The actual limit is calculated by shifting the index by a certain amount and adding in a base value. If the index has a maximum value (7 or 77B), the user has unlimited use of the system resource in question.

Below is a list of the validation indices and their associated limit formulas. I also give some proposed changes to some of the formulas. For each validation limit, a proposed default value is given.

Please note that in creating or updating user numbers, the index value (not the actual validation limit) is specified. This is a change from level 9, and and the account creation deck will have to be changed.

1. Number of Control Cards - 6 bit index
   Base = KCCI = 100B
   Limit = Index *20B + 100B
   = (100B, 120B, ... 2040B, unlimited).

Thus, the maximum limit we can have is 2040B = 1056. Even if we change the formula somewhat, the maximum limit must fit in 12 bits - 4095 control cards. For now, let's give the index a value of 40B (limit = 1100B) for student jobs and all other user numbers 77B (unlimited). Later on we should consider giving non-students users a limit of 4000, but provide a mechanism which allows them to reset this field. This will help prevent accidental control card loops.

2. Field Length in 100B Units - 6 bit index
   Base = KCMI = 10B
   Limit = Index *40B + 10B
   = (10B, 50B, 110B, ...,3710B, unlimited).

   I propose having the MIRJE default index = 12B (limit = 510B) on the batch default index = 33B (limit 1550B). These defaults are the lowest possible that give values greater than or equal to the current default limits.

3. Card Punched - 6 bit index
   Base = KCPI = 0
   Limit = Index * 100B + 0
   = (0, 100B, ..., 7600B, unlimited)

   N. Reddy informs me that this field will be ignored by the current level 11 software. I propose index = 77B until this limit becomes operational.

4. Deferred (Submitted) Batch Jobs - 3 bits index
   No base value
   Limit = Index *2
   = (0,2, ..., 14B, unlimited)

   Because of local mods to level 11, this limit will not work anyway, so we might as well set the index = 7 (unlimited). N. Reddy will propose to the System Group eventually a mechanism by which the number of submitted batch jobs may be limited.

5. Number of Dayfile Messages - 6 bit index
   Base = KDFI = 100B
   Limit = Index *20B + 100B
   = (100B, 120B, ..., 2040B, unlimited)

   The situation here is exactly like the control card limit, (1) above. I propose the same solution, namely index = 40B for student numbers and index = 77B for all others. As in (1), a resetable limit should be considered after level 11 is installed.

6. ECS Field Length in Tracks of 2000B Words - 6 bit index
   Base = KECI = 0
   Limit = Index *100B + 0
   = (0, 100B, ..., 7600B, unlimited) (tracks)
   = (0, 200000B, 400000B, ..., 17400000B, unlimited) (words)

   The increment of 200000B words is too big on our system which has 300000B words of user ECS. The CDC formula is not used, since ECS is not supported for users. I propose to make the increment 20000B words instead of 200000B. Then we will have:

Base = KECI = 0
Limit = Index *10B + 0
= (0, 10B, 20B, ..., 760B, unlimited) (tracks)
= (0, 20000B, 40000B, ..., 1740000B, unlimited) (words)

I propose default indices of 2(40000B words) for student user numbers and 14B(300000B words) for non-student user numbers. ECS is still unavailable to TELEX users.

7. Number of Lines Printed - 6 bit index
Base = KLPI = 1000B
Limit = Index *2000B + 1000B
= (1000B, 3000B, ..., 175000B, unlimited).

N. Reddy informs me that this field will not be used by the I/O subsystems. I propose that we set the index = 77B until such time as a print limit (probably tied to an automatic divert facility) is implemented. This leaves BATCHER in question, since it used the old page limit parameter in our level 9 VALIDUX file. Perhaps Jim Mundstock can put a temporary (fixed) page limit in BATCHER until this matter is settled.

8. Mass Storage PRU's Transferred - 6 bit index
Base = KMSI = 1000B
Limit = Index * 10000B + 1000B
= (1000B, 11000B, ..., 761000B, unlimited)

I propose a default index of 4(limit = 41000B = 16. Kilo PRU's) for student batch user nubmers) and index = 77B (unlimited) for all others.

9. Number of Local Files - 3 bit index
Base = KNFI = 10B
Limit = Index * 10B + 10B
= (10B, 20B, ..., 70B, unlimited)

I propose to make the base value = 30B and the increment value 20B instead of 10B. Then we will have:

Base = KNFI = 30B
Limit = Index * 20B + 30B
= (30B, 50B, 70B, ..., 170B, unlimited)

I propose default limits of index = 0(24 files) for student and TELEX user numbers, and index = 1(40 files) for other user numbers.

10. Output Files Disposed - 3 bit index
No base value
Limit = Index *4
= (0, 4, 10B, ..., 30B, unlimited)

N. Reddy informs me that this limit will not work in our system anyway. Until he can make some proposal, we might as well set the index = 7 for everyone.

11. SRU Limit - 6 bit index
Base Value = KSLI = 10B
Limit = Index * 100B + 10B
= 10B, 110B, 210B, ..., 7610B, unlimited)

We don't have much experience with the SRU calculation yet. Furthermore, the SRU calculation can be affected by PROFILE parameters. Therefore, I propose to set the index = 77B (unlimited) for everyone until some experience has been gained and until we have decided what to do about PROFILE.

12. Time Limit - 6 bit index
Base Limit = KTLI = 10B
Limit = Index * 100B + 10B
= (10B, 110B, 210B, ..., 7610B, unlimited)

The CDC base value is too high, and the resolution of time limits into 100B chunks is too big. At the UCC, most of our time limits are either small or very big - we usually don't have limits of 100 seconds. Hence, I propose changing the time limit calculation as follows:

Base Value = KTLI = 2
Limit = Index * 2 + 2
= (2,4,6, ..., 176B unlimited)

Non-student user numbers will have unlimited time limits. Each student user number will have the value currently in the level 9 VALIDUS file.