UNIVERSITY OF MINNESOTA COMPUTER CENTER
Deadstart Systems Newsletter

TABLE OF CONTENTS

NOTICE OF CHANGES TO THE SYSTEM

Andy Hastings installed changes to USERS/DSD which make the program
easier to assemble in a stock system.

Paul Thompson corrected RELOAD so that it does not attempt to disable
terminal control when the utility is called from a batch job.

Tom Kovarik added a new site, 2R, to SUPIO. Tom also enhanced SUPIO
to allow 12-bit ASCII (escape code ASCII) on output to all medium speed
RJE stations with the hardware capability to utilize full ASCII output.
This change was actually installed on the last system but I neglected
to mention it. Finally, Tom installed a completed version of PERRLOG,
a program which scans the system error log and computes totals for
various disk and tape errors.

Bill Sackett installed his proposed change to the RUN command (see DSN
7,16 p. 103). Bill also corrected the DDF-"TK.*." command which had
been setting the current track to zero instead of the first track beyond
the useable area of the disk. Additionally, Bill changed COST documen-
tation to indicate that the cost figures produced by COST are only
approximations when a machine with two CPU's of different speed is
used (such as our C730).

Brad Blasing fixed a small but disastrous error in one of our changes to 1TO. The error was that a message was being written to absolute word zero whenever 1TO attempted to write zero words. Fortunately this is a very infrequent occurrence.

In preparation for running NAM/CCP, two local changes have been removed from NOS.

1) The change to MTR which causes any job entering auto-recall with no tapes assigned and zero PP-activity count to be aborted with the message JOB HUNG IN AUTO-RECALL was deleted. This change conflicts with the way NAM programs CS (communication supervisor) and NS (network supervisor) talk with NIP (network interface processor) using the SCP (system control point) facility. We will reinstate the feature after we understand how NS, CS, NIP and SCP make use of auto-recall.

2) The MULTI facility conflicts with the NAM/CCP interface in IAF. We have deleted MULTI and have no plans to put it back in.

PROPOSED CHANGES TO THE SYSTEM

GTR - by P. M. Thompson

I consider GTR to have three problems, which make it unnecessarily difficult to use. I will address these problems separately, along with my proposed fixes.

1) GTR lists out the message "GTR ERRORS." after issuing all other (more explicit) error messages. This means that an interactive user in the BATCH subsystem gets only the above-mentioned vague message when an error occurs. I propose to change GTR to issue the "GTR ERRORS." message first, so that the more explicit error message can be seen without having to look at the DAYFILE.

2) GTR has position-dependent parameters, which are very difficult to remember. For example, if the user wants to select the no-abort option, they must specify "GTR,OLD,LGO,,,NA." I propose to alter GTR so that it will accept both position-dependent, and position-independent parameters. This would be upward compatable with one exception; If a user, intending to use position-independent parameters, mis-spells a parameter, then it will be interpreted as position-dependent parameter.

3) GTR requires that the type of the record to be edited be specified. There is no need for this if only one record exists by the specified name, or if the first such named record is the one desired. I propose to add a new record type, called "ANY", which will cause the first record found which matches the given name to be edited.

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VMS Line Printer Driver Patch - by S. Levy

As the VMS line printer driver is now written, most ASCII control characters
are filtered out of output files before being passed to the printer.
Unfortunately, our Printronix printer's special functions are invoked
using control characters, and so are currently inaccessible. These
include plot mode (allowing direct control over the dot matrix), double-
height characters, and 8-line-per-inch printing.

I propose a patch to the driver so that all nonstandard control characters
and the ASCII DEL (rubout) character are passed through to the printer.

The change should be noticed only by users printing files which contain
these special control characters. Embedded backspaces will probably
surprise the most people: they select double-height character printing.
The special modes are in effect only for lines containing the significant
characters, so mistakes will not be contagious.

Handling of the standard control characters (horizontal and vertical
tabs, carriage return, line feed, and form feed) is unaffected by the
change.

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PFM Proposal - by K. C. Matthews

Years ago we had a mod in PFM which defined a "no access update" bit.
This bit, if set in the FET for a GET or ATTACH request, would tell PFM
not to update the last access date and time field when a permanent file
was accessed. This was used by DUMPPF to prevent dumps from changing
the last access field. The mod was dropped during conversion from some
level of KRONOS/NOS to the next level. It was dropped to prevent people
from looking at files secretly. The file owner, looking at the last
access time, would assume that no one had ever accessed the file since
the time displayed. A person who had perhaps stolen a user number and
password could have looked at the user's files (with DUMPPF or a special
program) without leaving an obvious trace.

I would like to re-introduce the no access update bit. To prevent the
security problem mentioned above, the bit will be honored only for system
origin jobs. For other job origins the bit, if set, will be ignored.
The bit which is in the U of M word in the FET, will be used by DUMPPF.
DUMPPF is used to perform the first of the month archives of unused files.
It will help avoid the problem which occured on August 1 this year.

On that day, an unrecoverable disk error on pack SHA aborted the archives
of unaccessed files on the 730. All the files on the default family
had already been dumped to tape by DUMPPF. So when the archive was
restarted, none of those files were dumped since they had all been accessed
(very) recently.

I would like to re-introduce the no access update bit in PFM so that processes like this can be restarted. We will also add an VA (update access) parameter to DUMPPF. The allowed values are VA=ON and VA=OFF. VA=OFF will be the default, which means that the bit will be set by default, which means that system origin DUMPPFs will not update the access date. It's nice to have these options like default so that DUMPPF can be used to get rid of old files on various system user numbers. By the way, if the bit is set the access count is still updated.

There is at least one reasonable alternative to this proposal. The CDC permanent file utility PFDUMP can be used for the first of the month archive as well as for my other uses. But this would require changing the end of the month archiving procedures, which use the output from DUMPPF. And in some ways, the CDC utility is clumsy to use, which is the reason for this proposal.

DISCUSSION TOPICS

Non-standard VMS Products on the IPC VAX - by M. Riviere

The installation of non-standard VMS commands in the VMS system is accomplished through the system definition procedures SYSTARTUP and SYSLOGIN.

The STARTUP procedure is invoked at the time that the system is booted and sets up permanent system defined parameters (e.g., terminal speed, logical names for the user disk pack, devices and file definitions used by EUNICE, compiler specific logical names, etc.,).

The SYSLOGIN procedure is executed each time a process is started, either on interactive or batch mode and sets up global definitions for the process. The SYSLOGIN procedure is where the command definitions for most of the non-standard VMS utilities offered at UCC should be installed. In addition to SYSLOGIN users can have an individually tailored procedure file LOGIN where they can include command definitions of thier own.

Most of the definitions for non-standard VMS commands are done in the SYSLOGIN and LOGIN procedures by assigning logical names or by defining global symbols which reference how to access the command(s)-associated executable file(s). During the life of a process users can define additional logical names and symbols. Each defined symbol or logical name takes a certain amount of space from the user's process tables. These tables are search each time a symbol or logical name is referenced. A list of the process symbols or logical names can be obtained by the statements: SHOWLOGICAL/ALL and SHOWSYMBOL/GLOBAL/ALL. This list, if too large, becomes quite inconvenient for symbol tracing.

Most of our UCC installed packages, either obtained commercially, such as SPSS or SCSS, or locally developed, such as PROSE, should be included in the SYSLOGIN global definition table. (A procedure file, SYSDEFS, should contain the DCL commands that establish the definitions.)

Based on our Cyber experience, I can predict that the SYSDEFS file may become quite large, the availability of the utilities included in the SYSDEFS file will be taken for granted by the IPC VAX users for the life of the VMS System, and the quality of these utilities will be expected to be up to a certain standard.

As a first IPC-VAX issue to bring to the System group, I suggest that:

1) For a command to be included in SYSDEFS, its inclusion has to be approved by the System's group. The approval should be subject to a formal DSN proposal article describing the command, its expected usage, calling parameters, documentation, etc. Users should be informed of the existence of this table of definitions and instructed how to get rid of the default system definitions if they wish to do so, and how to build their own definition procedures in their LOGIN files by extracting from SYSDEFS whatever assignments are suitable for most of their needs.

SYSTEM MAINTENANCE: People and Procedures

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

Bill Sackett's proposed change to the RUN command was accepted (see DSN 7,16 p. 103).

The problem of COST giving incorrect results on the Cyber 730 was discussed. The reason that COST is inaccurate on the Cyber 730 is that it is a dual CPU machine whose processors run at different speeds. We thought of two ways to deal with this problem.

1) Remove from COST the capability of including the SRU components as part of its summary since they can be very inaccurate or;
2) Inform users that in some instances, COST-generated SRU components can be very inaccurate and leave it at that. We chose the later.

We all agreed to hear a proposal to make COUNTU a control card callable statement (rather than FETCH).

The issue of rates on the IPC VAX was raised. Some users had commented on the seemingly high price of VAX service. Larry Liddiard had been studying the topic and gave a brief talk on VAX rates and how paging works. Larry showed that for certain jobs, their price could be 6-8 times more expensive on the VAX. This is due primarily to our price for page faults. This situation has to be corrected and a adjustment to VAX rates is forthcoming.

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Callprg and Library Tape News - by M. Riviere

There are no modifications scheduled for September 15. The next date
for modifications is September 26. Requests for that date should be
submitted no later than September 17 by noon. Please remember to request
the changes that should take place before classes start by that date.

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MERITSS (Cyber 172) Deadstart Dump Analysis - from 8/10 to 8/19
- B. E. Blasing

Tue., 8/18, 19:45   No Dump
The CE's were swapping cards in ECS attempting to fix an ECS problem
which caused the scopes to blank.

Wed., 8/19, 01:33   DD1
CPUMTR moded out during PF dumps after end of operations. Part of the
dump tape was overwritten by a PFDUMP after the recovery, so resolution
seems unlikely.

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Left Machine (Cyber 730) Deadstart Dump Analysis from 8/3 to 8/19
- B. E. Blasing

Mon., 8/3, 13:32   No Dump
A mainframe parity error on channel 33 caused the machine to crash. The
CE's fixed the problem in an hour.

Tue., 8/4, 18:00   No Dump
A level 3 deadstart was needed to recover from some disk error. The
exact circumstances are not known.

Thur., 8/6, 03:09   DD2004
Systems work on the 172 using a shared disk possibly caused C10 to hang
with a DTKM request.

Thur., 8/13, 22:10   DD2010
The system hung during PF dumps. A software bug was discovered which
could allow a deadlock in rare circumstances when dumping RESEX files.
This was corrected.

Thur., 8/13, 22:31   DD2011
Same as above.

Mon., 8/17, 13:44   No Dump
DQ20, one of our 885's, started getting many errors. The system was
given to the CE's to fix the disk.

Tue., 8/18, 14:00   No Dump
Electrical work for the Cray near one of the 885 controllers caused that
controller to hang. A level-3 was needed to unhang it.

Tue., 8/18, 16:20   DD2013
Tue., 8/18, 18:36
Tue., 8/18, 20:10   DD2021
The ECS coupler broke. It was temporarily fixed with parts from the DDP.

Wed., 8/19, 09:09   DD2020
1TO (one of IAF's helpers) detected a strange request from IAF to write
zero words to a file. It meticulously formatted a message to signify
this event and prepared to issue it to the B-display message area. But
due to a slight bug, it wrote it to absolute word 0, causing the system
to crash. This has been fixed.

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Right Machine (Cyber 74) Deadstart Dump Analysis from 8/3 to 8/19
- B. E. Blasing

Sat., 8/8, 03:20   DD2006
LFM hung trying to drop an already dropped equipment during PF dumps.
It is not known how that equipment came to be unreserved already.

Tue., 8/18, 16:04   DD2017
Tue., 8/18, 16:23
Tue., 8/18, 16:30   DD2020
Tue., 8/18, 20:15
ECS problem. See Cyber 730 description.