

UNIVERSITY OF MINNESOTA COMPUTER CENTER
Deadstart Systems Newsletter

22 September 1981

Vol. 7, No. 18

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

The University of Minnesota is an equal opportunity educator and employer.

TABLE OF CONTENTS

NOTICE OF CHANGES TO THE SYSTEM	105
PROPOSED CHANGES TO THE SYSTEM	106
COUNTU - A. B. Mickel	106
DROP SUPPORT FOR LINK LOADER - T. W. Lanzatella	107
DISCUSSION TOPICS	108
A NEW STANDARD FOR PRINTER PAPER SIZE - by L. A. Liddiard	108
SYSTEM MAINTENANCE	108
LAST WEEKS SYSTEMS GROUP MEETING - T. W. Lanzatella	108
CALLPRG AND LIBRARY TAPE NEWS - M. Riviere	108
PROGRAMMING LANGUAGE PROCESSORS GROUP - A. B. Mickel	109
CYBER DEADSTART DUMP ANALYSIS - B. E. Blasing	114
CYBER 172 DEADSTART DUMP ANALYSIS - B. E. Blasing	114

NOTICE OF CHANGES TO THE SYSTEM

Kevin Matthews installed the following changes.

- 1) The syntax of the DDPCH command was changed. This command is used in the ECSDECK to declare which DDP channels go with which machines. The syntax was changed so that the command "DDPCH, ." means clear DDP channel assignment for all machines.
- 2) IAF (TELEX) was changed so that the family prompt includes the possible choices (C74 or C172).
- 3) Program COPYCAT, the utility used to gather permanent file charging information, was changed so that it knows about families.

Andy Hastings changed LTD to terminate more gracefully if, during initialization, it encounters errors from the PDP-11 front-end. Andy also added a new reformatting directive to SUBMIT. The new directive is:

/ACCOUNT,accountnumber

The command allows for secure entry of passwords for jobs bound for the Cray.

Paul Thompson installed his proposed QUEUE utility (see DSN 7,14 p. 93 and WRITEUP(QUEUE) for details). The utility is composed of two programs: QUEUE and LQF a PP-helper.

Bill Sackett installed two changes into PFPACK. The first is a fairly large modset developed by B. Elliott (long ago) which speeds up PFPACK by labeling holes. The other change corrects dayfile messages.

Tom Kovarik installed several changes into SUPPIO.

- 1) The priority modification command entered interactively by terminal operators was altered slightly in an attempt to accomodate a potential Cray customer.
- 2) A new site, 3W, was added. This is the reserve division of Wilson library.
- 3) A problem which has plagued SUPPIO for ten (count' em - 10) years was fixed by Tom and Marshall Midden. The problem is the famous "hung in A-status" problem.

PROPOSED CHANGES TO THE SYSTEM

COUNTU - by A. B. Mickel

COUNTU is a popular text-file utility which counts the number of unit records (lines) there are in a text file up to EOI by default. Its call is:

```
COUNTU(I=TEXTFILE,L=REPORTFILE,N=# of files, LO=OPTIONS,NL=REPORTFILE  
LINE LIMIT,NR,A,B)
```

I propose to make COUNTU control-statement callable instead of FETCHABLE on all 3 Cybers. There has been a recent suggestion card by a user to this effect. COUNTU has been used 10878 times since 78/01/01 on the non-MWRITSS Cybers. WRITEUP(COUNTU) exists and is currently classified as "unofficial".

"The COUNTU get is the COUNTU see..."

"May I COUNTU among my friends..." John T. Easton, 1975.

//////////

Drop Support for Link Loader - by T. W. Lanzatella

When KRONOS was originally released, the loader released with that system was the Link loader, a small but fast loader which was quite sufficient at that time. When NOS was released, a new loader was introduced, the Cyber Loader. Shortly after this, support for LINK was dropped by CDC and Cyber Loader was deemed the only loader. Not so at UCC. Since LINK was so efficient and because machine resources are so expensive, we decided to support LINK ourselves. To do this we installed system changes which allowed users to pick the loader they wanted to use with the LOADER command. We made LINK the default loader and gave users the option of using the Cyber Loader.

Since CDC was enhancing the Cyber Loader and making use of the enhancements in the product set, the Cyber Loader was made the default loader at UCC. Too many of the CDC products produced binaries which LINK could not handle.

The people who used to maintain the Link loader have long since departed UCC or moved into areas other than system maintenance.

In order to keep the Link Loader in our system beyond R4, a great deal of work must be done in order to make it perform. People must be trained and time has to be spent in development. The alternative to doing this work ourselves is to purchase a version of Link loader which works well under R5. Such a package is available from MECC for a certain (not insignificant) amount of money.

We are faced with deciding between three alternatives:

- 1) Cultivate the expertise necessary to enhance the Link loader.
- 2) Spend the money necessary to procure a working version of Link loader.
- 3) Drop support for Link loader.

I propose that we drop support of Link loader. My argument is as follows:

- 1) The usage of LINK (ranging between 150 and 800 times per month on the Cyber 74) is not enough to make even the slightest dent in overall systems performance.
- 2) The price for the improved version of Link is too high, even if the vendor is willing to accept certain packages from us, of equivalent value, in return.
- 3) Supporting two system loaders takes staff time and contributes to our burden of running a non-standard NOS system.

Admittedly, the burden of supporting the Link loader alone is not a large problem. However, when taken together with all the rest of the changes we maintain, it simply contributes to the six month task of upgrading to new releases of NOS.

DISCUSSION TOPICS

A New Standard for Printer Paper Size - by L. A. Liddiard

Several problems have come up recently which stem from the optional 6 or 8 lines per inch print density. I would like to discuss the possibility of changing all printers at UCC to a constant 8 LPI and then standardizing on 8.5 inch paper rather than the current 11 inch. This would keep the number of lines per page at about 66-68.

SYSTEM MAINTENANCE: People and Procedures

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

The following proposals were discussed.

- 1) Paul Thompson's proposed changes to GTR were approved with the following changes (see DSN 7,17 p. 106). The form of the order independent GTR command will be: GTR(lfn1,lfn2/options). The record type ANY was rejected in favor of the record type *, ala Libedit. To get all types of all records named SAM, use the command: GTR(lfn1,lfn2)*/SAM.
- 2) Stewart Levi's proposal to patch the VMS line printer driver in order to facilitate plotting was accepted after a lively discussion on how to maintain binary patches (see DSN 7,17 p. 107). Marisa assured us that she has a scheme for maintaining binary patches.
- 3) Kevin Matthews' proposal to reinstall the no-access-update-bit for PFM calls was accepted (see DSN 7,17 p. 107). We will research the possible implementation by CDC of a similar feature in a new release of the system.

Marisa's discussion of how to deal with non-standard VMS products was taken up (see DSN 7,17 p. 108). Essentially, we adopted Marisa's statements in the DSN as the policy on non-standard VMS products.

//////////

Callprg and Library Tape News - by M. Riviere

On September 20, the Library Tapes on the three Cybers will be updated with a modified version of REDACT. The modification corrects any small errors in the program concerning the scanning of the index to delete entries associated with purged files. In cases when the purged file name was shorter than seven characters other entries associated with files whose names started with the same sequence of characters as the purged file were also deleted. The modification to REDACT was made by R. Fletcher.

The next set of Callprg index and Library Tape changes will be taking place on October 13. Modifications for that date should be submitted before October 1, by noon.

//////////

Programming Language Processors Group - by A. B. Mickel

Mission Statement

The mission of the PLP is Computer Center users (including Computer Center staff) provided with the best available, modern, high-level programming languages which will enhance their efficient use of the University Computer Systems in their research, instructional, and public-service work. Additionally, the mission includes Computer Center users (and Computer Center staff) who feel that the University Computer Center is a resource for general computer and information-processing expertise.

PLP Goals Statements

The long-term goals of the PLP Group are therefore the following results:

- 1) A University able to count on expertise and technical direction with regard to programming languages.
- 2) Properly functioning and maintained programming language processors and their libraries on UCC systems which dictates all the systems programming, modification, coding, debugging, developing, documenting and consulting that this requires.
- 3) A minimally-sized programming language culture in which all language areas are adequately covered (business, general purpose, instructional, numerical, non-numerical, simulation and systems implementation).
- 4) University users able to transport their programs (written in a standard language) across many UCC systems (from micros to supercomputers).
- 5) A University Computer Center staff provided with adequate programming language processors and tools and aids for their software development.
- 6) Computer Center users and staff educated in the proper use of various programming languages.
- 7) Computer Center users and staff benefitting from a generally efficient operation of the University Computer Center.
8. A computer system which has only programming language processors written in a higher-level language.

PLP Time-Period Objectives Statement

The objectives of the PLP Group for the 81-82 fiscal year are the following results:

- 1) Several new Cyber programming language processors installed and documented and in a maintenance equilibrium (SPITBOL, etc.,).

- 2) 3-4 old Cyber programming language processors installed and documented and in a maintenance equilibrium (SIMULA, etc.,).
- 3) Hundreds of Computer Center users (including UCC staff) per year directly assisted with their programming language problems.
- 4) 100 Computer Center users (including UCC staff) per year educated in short courses teaching the effective use of language processors.
- 5) 3 CRAY programming language processors available this year for user use.
- 6) 6 or more VAX/UNIX programming language processors installed and in maintenance equilibrium.
- 7) 3 VAX/VMS programming language processors installed and in maintenance equilibrium.
- 8) 3 more software tools added to an improved, existing set of 10.
- 9) Hiring and supervising of 2-3 new students to the PLP Group to fill gaps and replace 1-2 which are leaving.

Project List for PLP Group

1. Perpetual Projects

Programming (installation, modification, coding, code reviewing, debugging, developing).

Documentation (internal PTR's, external and sysnotes and newsletter).

Consulting (with users and staff, in person and on phone and in office).

Correspondence (with other sites).

Publication (of results of work or ideas on p.l's).

Self-Education (keeping abreast of p.l. standards, progress in programming methodology).

Promotion (of appropriate language for an application - short courses, advise, newsletter articles).

Distribution (p.l's to other sites).

Supervising (co-workers).

General UCC (documentation review, miscellaneous programs, aiding other staff programmers with algorithms and advice).

General Systems Group (read DSN, write DSN articles, attend meetings).

Discrete Projects

	<u>% Complete</u>	<u>Completion Dates</u>
CDC-Pascal Contract	20%	1982/09/01
CRAY-Pascal Development	0%	1982/12/31
Pascal Software Tools	75%	1982/06/30
Cyber M77 Fortran	80%	1981/12/31

Individual Ongoing Programming Language Projects (Installation and Maintenance)

Ada (Cyber, CRAY, VAX)	0%	
Algol-60 (Cyber)	50%	Killed
Algol-68 (Cyber)	0%	Killed
APL (Cyber)	85%	
(VAX/UNIX)	0%	
APL Workspaces	95%	
BASIC (Cyber)	80%	
VAX/UNIX)	0%	
C VAX/UNIX	0%	
COBOL74 (Cyber COBOL4, COBOL5)	85%	Project Under SAR
VAX-VMS	50%	
VAX/UNIX	10%	
COMPASS (Cyber)	95%	
CAL (CRAY)	0%	
FORTTRAN (Cyber FTN5	80%	
FTN4	85%	
MNF	95%	
M77	60%	
CRAY CFT	0%	
VAX/UNIX	0%	
VAX/VMS	100%	
GPSS (Cyber)	80%	
GRASPE (Cyber	50%	
VAX/UNIX)	0%	
LISP1.5 (Cyber	85%	
CRAY	0%	
VAX/UNIX)	0%	
MIMIC (Cyber	50%	
CRAY	0%	
VAX/UNIX)	0%	
MIXAL (Cyber)	70%	
MODULA (CRAY	0%	
VAX/UNIX)	50%	
PASCAL (Cyber, PASCII	85%	
CRAY	10%	
VAX/VMS	50%	
VAX/UNIX)	50%	
PL/1 (Cyber)	30%	

SIMSCRIPTI.5 (Cyber)	30%
SIMSCRIPTII.5 (Cyber)	95%
SIMULA67 (Cyber	60%
VAX/UNIX)	0%
SNOBOL4 (Cyber Colorado	85%
CAL	85%
Cyber SNOL1B	50%
SPITBOL	95%
VAX/UNIX SPITBOL	50%
CRAY SPITBOL)	0%
SYMPL (Cyber)	85%
RPG (Cyber)	50%

Simulator EMULATE (Cyber)	100%
Simulator MACROII (Cyber)	100%

People

100%	Dave Bianchi	Pascal Library Development 50%
		Revise S.tool 10%
		Pascal Distribution 5%
		CDC Pascal 10%
		MIXAL 5%
		Misc. Perpetual 20%
100%	Tony Gerber	M77 Maintenance and Installation 65%
		Pascal Tools 10%
		CSci Obligations 15%
		Misc. Perpetual 10%
50%	Dan Germann	CDC Pascal 50%
		SPITBOL 10%
		Modula 15%
		Misc. Perpetual 25%
50%	Lillian Hu	Software Tools 75%
		Misc. Perpetual 25%
25%	Steve Lai	Consult for SIMULA, SIMSCRIPT, GPSS, MIMIC 90%
		Misc. Perpetual 10%
125%	Rick Marcus	CDC Pascal 50%
		CRAY Pascal 5%
		VAX Pascal 5%
		SPITBOL 10%
		Pascal Tools 10%
		APL Workspaces 2%
		MODULA 1%
		Misc. Perpetual 20%

75% Andy Mickel	CDC Pascal 30%
	CAL SNOBOL 5%
	COL SNOBOL 5%
	LISP 5%
	GRASPE 1%
	Misc. Perpetual 50%
	Other Languages 4%
50% Jim Miner	CDC Pascal 10%
	Pascal Tools 50%
	Misc. Perpetual 40%
75% Susan Steffen	CDC BASIC, SPL, FTN, COBOL Installation 40%
	SIMSCRIPT Installation 10%
	UNIX PLP's 25%
	Misc. Perpetual 25%
50% Lydia Yomtoubian	CAL SNOBOL 30%
	SNOLIB 50%
	Misc. Perpetual 20%

Help For and From UCC

<u>Perpetual Projects</u>	<u>For Other Groups of UCC</u>	<u>From Other Groups of UCC</u>
Programming	Misc. Programs	--
Documentation	Review Only	Technical-Writing Aid for PLP
Consulting	100%	General Consulting for Languages
Correspondence	--	Secretarial
Publication	--	Secretarial
Self-Education	Be an Informative Resource for Standards and Programming Methodology	Staff Training Project
Promotion of Language	100%	User Services Short Courses
Distribution	--	Software Pricing and Tape Copying/Mailing
Supervising	--	--
General UCC	100%	--
General Sys Group	--	--

//////////

Deadstart Dump Analysis from 8/20 - 9/20 - B. E. Blasing

Saturn (Cyber 730):

Fri., 8/21, 19:17 DD2023

Fri., 8/21, 19:30

DQ20, one of our 885's again began getting many unrecovered errors. It was reloaded onto our spare 885 spindle.

Sat., 8/22, 10:23 DD2001

DQ23, began getting many unrecovered errors.

Wed., 9/2, 23:47 DD2003

CPUMTR did a mode 0 at exactly the same time a copy of PFDUMP got a mode 0. Both programs were executing where they shouldn't. Subsequent deadstarts failed when the central exchange jump did not work. Running diagnostics seemed to fix the problem. The CE's are investigating.

Wed., 9/8, 10:01

A power surge knocked down all three systems.

Thur., 9/17, 10:38 DD2007

Thur., 9/17, 23:32 DD2004

All disks on channels 32 and 33 began getting function timeouts. The CE's thought they had fixed a problem with channel 33 in the mainframe, but it occurred again later that nite. They moved a number of cards the next morning, and the problem has not reoccurred.

Uranus (Cyber 74):

Sat., 8/22, 13:50 No Dump

On-line diagnostics MY1 and FM2 detected a CPU failure. The CE's were called in to fix the error.

Tue 8/25, 18:58 DD2001

An enterprising systems programmer, while trying to fix a problem that was causing PFDUMP to abort, caused the system to hang trying to interlock several catalog tracks. A level-3 recovery was successful.

Tue., 9/1, 09:43 DD2002

CIO hung trying to turn an unreserved disk track into a preserved queue file. All looks normal, except that the track is unreserved.

Sat., 9/5, 16:07 No Dump

CIO hung at BATCHIO's control point soon after some stuck queue files were unstuck. The need to unstick queue files is caused by a bug in the SWITCHALL command. The dumps from this crash was overwritten by someone using the 172 for Cray station work.

//////////

MERITSS (Cyber 172):

Wed., 9/9, 10:01 DD2

A power surge knocked the system down. A level-3 appeared to work o.k., but nobody could log in. Some central memory resident PP routines seemed to have been trashed by the power surge. A level 0 deadstart was required.