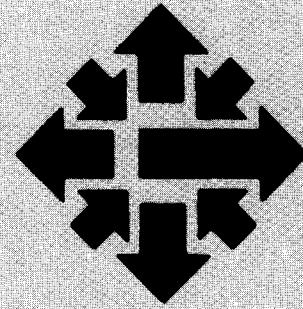


# University Computer Center Newsletter

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## Permanent Datasets on CRAY Mass Storage

As of December 1, UCC will offer a permanent dataset backup and archive feature on the CRAY-1. We define a permanent dataset as any dataset stored on CRAY mass storage by any UCC-authorized CRAY user.

Permanent datasets will exist on CRAY mass storage as one of two types: a permanent dataset that is backed up or a permanent dataset that is not backed up.

We will assess a fee for all permanent datasets that use CRAY mass storage. The fee for backed-up permanent datasets is considerably higher than that for permanent datasets that are not backed up.

### Backed-up permanent datasets

To create a backed-up permanent dataset, you must use the ID=RETAIN in any COS dataset command that has the ID=parameter (for example: ACCESS, ACQUIRE, DISPOSE, or SAVE). This ID distinguishes a backed-up dataset from one that is not backed up. Datasets that are not backed up may have any ID other than RETAIN or no ID at all.

We will copy all backed-up permanent datasets each week. We will also copy certain backed-up permanent datasets each day; this procedure will depend upon when datasets were last modified.

We cannot copy execute-only permanent datasets (datasets with the EXO parameter equal to ON) regardless of their ID value. We will back up and archive execute-only datasets whose PAM parameter is set to E, if their ID is RETAIN.

If you lose datasets as a result of system failure, we will recover all those that exist on the most recent backup at no charge.

We will assess a \$20 fee for any other requests to reload backed-up

```
ACQUIRE,DN=MYFILE,ID=RETAIN,TEXT='A,MYFILE.CTASK.'  
ACQUIRE,DN=MYFILE,TEXT='A,MYFILE.CTASK.'  
FETCH,DN=MYFILE,TEXT='A,MYFILE.CTASK.'
```

Exhibit 1. Sample CRAY ACQUIRE and FETCH commands.

permanent datasets. To reload such a dataset (from either a backup or an archive tape), call the permanent dataset restoration HELP-line (376-5605) or the general HELP-line consultant (376-5592). You will need your user number, the name and edition of the dataset you want reloaded, and, if possible, the date you last accessed the dataset.

### Permanent datasets that are not backed up

We will not copy permanent datasets defined as "not backed up" and cannot guarantee their existence. Such datasets are subject to purging to create additional disk space. We will purge these datasets each week, and possibly more often, depending on the status of CRAY mass storage.

### Archiving

Any backed-up permanent dataset that has not been accessed in thirty days (counting from the first of the month) is subject to archiving. We will copy these datasets to a specific archive tape, then delete them from the system. We will store the archive tapes for one year, then recycle them.

### Helpful COS commands

The major impact of this new policy is the fee we will now charge for permanent dataset storage. Since we will assess fees, you should know the difference between the COS FETCH and ACQUIRE commands.

The FETCH command retrieves a dataset and makes it local to your job. The ACQUIRE command retrieves a dataset, makes it local to your job, and creates a permanent copy of it unless that dataset already exists on CRAY mass storage. In other words, you can create permanent datasets that you intend to be permanent and local datasets that you do not intend to be permanent. If you are aware of this difference, you can avoid unexpected charges.

For example, you may use one of the commands in Exhibit 1. The first ACQUIRE command creates a backed-up permanent dataset named MYFILE, ID=RETAIN (unless one already exists). The second ACQUIRE command creates a permanent dataset (that is not backed up) named MYFILE with no ID value (unless one already exists). The FETCH command creates only a local dataset named MYFILE.

You can also inadvertently create many editions of the same permanent dataset name with the SAVE command. Check your dayfile after you use SAVE, or use the AUDIT command, to keep track of the number of editions or the number of the current edition of your datasets. Each of these editions is a permanent dataset.

You should be aware of and use the AUDIT command, which provides current information about your datasets. You may also find the PDCOST command useful. PDCOST, a new statement, provides the cost for

each permanent dataset that you store on CRAY mass storage and the total cost per week to store all your permanent datasets.

**Storage units**

Permanent datasets on CRAY mass storage are stored in increments of tracks. One track is 9216 words or 18 blocks (one block equals 512 words). The smallest unit of space we can allocate is one track, so datasets smaller than this will be charged for a full track. Likewise, larger datasets will be billed for the number of tracks used and any partial use of a track.

**Costs**

Charges for permanent datasets will be based on the number of kilo block days you use. We define one kilo block day as the use of one kilo block of CRAY disk space for one day's time. We will charge \$16.80 per kilo block day (KBD) for backed-up permanent datasets, and \$3.36 per KBD for permanent datasets that are not backed up. These charges are internal, academic rates. External, non-academic rates are 50 percent higher.

**Sample permanent dataset**

To help you understand this article's major points, we'll use an example: the size of the permanent dataset MYFILE in Exhibit 2 is 100 CRAY mass storage tracks. The exhibit compares the costs 1 you would incur if you store MYFILE in different ways.

Clearly the most cost-effective way to store a CRAY permanent dataset is as a permanent dataset that is not backed up on the CRAY, with a backup on the CYBER.

**Sample job to ACQUIRE a dataset from tape**

The sample job in Exhibit 3 will help you create a permanent dataset that is not backed up on CRAY mass storage. The dataset MYFILE is not backed up since the ID parameter is not equal to RETAIN.

If you acquired a dataset from CYBER disk, the text field in the ACQUIRE statement would be different. You should also note that the dataset is transferred in transparent mode since the DF parameter is set

	size in tracks	size in words	size in Mbytes	cost per day	cost per month	cost per 4 xfers	cost per 4 mounts	tape storage cost
backed up on CRAY	100	921600	7.37	\$30.24	\$907.20	NA	NA	NA
not backed up on CRAY	100	921600	7.37	\$ 6.05	\$181.50	NA	NA	NA
permanent disk file on CYBER	15360 CYBER sectors	983040 CYBER words	9.83M (6 bit chars)	\$ 5.16	\$154.83	\$4.40	NA	NA
saved on tape	NA	983040 CYBER words	9.83M (6 bit chars)	NA	NA	\$9.52	\$1.76	\$.75 per month

NA—Not Applicable  
All transfers are assumed to be in transparent mode.  
Tapes used are labeled and internally stored.

We can calculate the following total charges from the above information:

CASE ONE: A backed-up permanent dataset on CRAY mass storage  
ID=RETAIN

CRAY monthly charge (backed up)	\$907.20
<hr/>	
total monthly charge	\$907.20

CASE TWO: A permanent dataset (not backed up) on CRAY mass storage  
ID= null or any value other than RETAIN  
This dataset is saved on CYBER disk and ACQUIRED weekly

1	CRAY monthly charge (not backed up)	\$181.50
	permanent CYBER disk file monthly charge	\$154.83
	weekly transfers from CYBER disk to CRAY (4 times)	\$ 4.40
	<hr/>	
	total monthly charge	\$340.73

CASE THREE: A permanent dataset (not backed up) on CRAY mass storage  
ID= null or any value other than RETAIN  
This dataset is saved on a labelled CYBER tape,  
internally stored, and ACQUIRED weekly.

	CRAY monthly charge (not backed up)	\$181.50
	weekly transfers from tape to CRAY (4 times)	\$ 9.52
	weekly tape mounting charges (4 times)	\$ 1.76
	monthly tape storage charge	\$ .75
	<hr/>	
	total monthly charge	\$193.53

Exhibit 2. CRAY permanent dataset charges.

```
JOB,STMCR.
USER,xxx,xxx.
JOB,T=10.
ACCOUNT,AC=xxx,APW=xxx.
ACQUIRE, DN=MYFILE, PDN=MYFILE, ID=MYID, DF=TR, TEXT='
    LABEL,MYFILE,VSN=SN9999,PO=R, LB=KL,D=GE.CTASK.'.
CFT.
LDR.
/EOR
your program
```

Exhibit 3. Sample job to ACQUIRE a dataset from tape.

to TR. Transparent mode is the most efficient way to store CRAY data on the front-end system.

If you have any questions about this new policy, call our HELP-line,

376-5592. Consultants are available to assist you from 7 a.m. to 7 p.m., Monday through Friday.

(Dean W. Elling)

## VAX Service

### NEW VMS VERSION

On December 1, we will update the VAX/VMS system to VMS Version 3.6. This update includes new versions of Pascal (2.5) and FORTRAN (3.5). We describe the update in a VAX writeup, VMS36.LIS. To read this writeup at your terminal, use the command TYPE USERA:  
[WRITEUPS]VMS36.LIS.

## Documentation Data

### CYBER GUIDE SUPPLEMENT NOW AVAILABLE

The 1984-85 *Supplement to the Guide to CYBER Computing* is now available at the H. D. Smith Bookstore (West Bank) and the Minnesota Bookcenter in Williamson Hall (East Bank). The price is \$1.20.

The *Supplement* provides updated and corrected information to users of our *Guide to CYBER Computing*. We encourage all users of the UCC CYBER CA, ME, and MD systems to obtain both the *Guide to CYBER Computing* and its new *Supplement*.

Reference copies of the *CYBER Guide* and the *Supplement* are available in the UCC Reference Room, 140 Experimental Engineering.

## Statistics Packages

### GLIM

GLIM, an interactive generalized linear modelling package from the

Rothamsted Experimental Station in England, is now available on 1 the CYBER CA and MERITSS. GLIM includes a wide range of regression models, analysis of variance and covariance, contingency table analysis, and probit analysis. MERITSS users should note that GLIM requires at least 104,000B (octal) central memory to run.

GLIM manuals will eventually be available at the Minnesota Bookcenter in Williamson Hall. One drawback of these manuals is that they appear to be written in a completely alien tongue. If you need help with GLIM, contact Professor Sanford Weisberg, Department of Applied Statistics, 352 Classroom Office Building, St. Paul campus, 373-1068.

You can access GLIM with the control statement:  
GLIM.

### LISREL VI ON THE CRAY

"It is a wonderful method. Everyone should use it to measure change."  
— K. A. Gialluca, 1984

We have installed LISREL VI, a maximum likelihood factor analysis package, on the CRAY (the September *Newsletter* discussed its installation on the CYBERS). You can access LISREL on the CRAY with the commands:

LISREL. or  
LISREL,SIZE=nnn.

where nnn is the amount of work-

space LISREL requires. SIZE is 20,000 by default. The maximum SIZE you may request is approximately 850,000, which should be ample for most applications. (By comparison, the maximum SIZE available on the CYBERS is approximately 94,000.)

A sample CRAY job from the CYBERS could look like this:

```
/JOB  
/NOSEQ  
JOB,STMCR.      LISREL EXAMPLE  
USER,0,0.  
JOB.  
/ACCOUNT  
LISREL.  
/EOR
```

### LISREL control cards

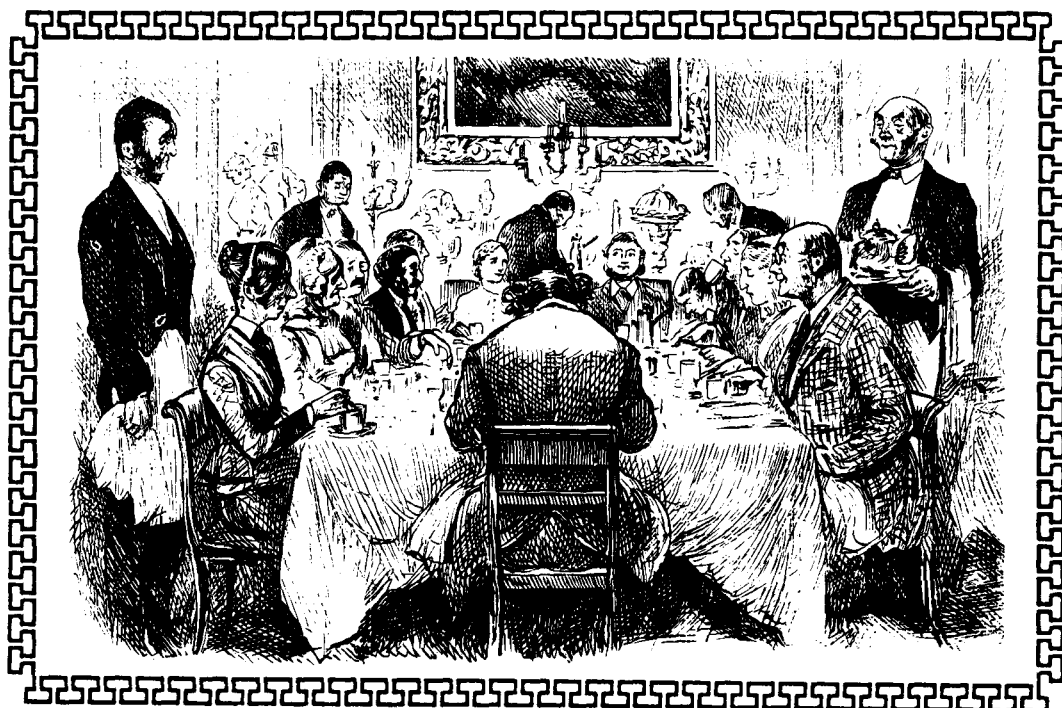
Our preliminary estimates suggest that it could cost one-third to one-half as much to run LISREL on the CRAY as on the CYBERS.

## Programming Languages

### C ON THE CRAY

The Bell Labs C compiler is now available on the CRAY; it runs under the COS 1.12 operating system. Although it has been tested by Cray Research, it is not formally supported by Cray or Bell.

For more information, see WRITEUP(CRAY=C) or contact Jane Gehan, 376-5262 or 638-0558.



## All Systems Bulletins

### THANKSGIVING HOLIDAY HOURS

Hours for the upcoming Thanksgiving holiday, November 22 and 23, will be:

	Down	Up
CRAY 1	Midnight Wed 11/21	7:00 a.m. Fri 11/23
CYBER CA	4:00 a.m. Thu 11/22	7:00 a.m. Fri 11/23
CYBER ME	3:30 a.m. Thu 11/22	7:45 a.m. Fri 11/23
CYBER MD	1:30 a.m. Thu 11/22	8:00 a.m. Fri 11/23
VAX 11/780	4:00 a.m. Thu 11/22	7:00 a.m. Fri 11/23
Experimental Engineering Station	10:00 p.m. Wed 11/21	10:00 a.m. Sat 11/24

## Fall Quarter Short Courses

### INTRODUCTORY COURSES

PRICES: U. student \$10, U. staff \$20, Non-University \$30

- 130 XEDIT (section 1) (Tom Kovarik)  
Nov 5-9 (MTThF) 1:15-2:30 p.m.
- 135 XEDIT (section 2) (Tom Kovarik)  
Nov 5-9 (MTThF) 2:45-4 p.m.
- 150 Introduction to the CRAY-1 and COS (Kurt Richards)  
Nov 12-16 (MWF) 3:15-5 p.m.

### ELECTIVES

PRICES: U. student \$20-30, U. staff \$30-50, Non-University \$50-100

- 640 Beginning Pascal (Peter Oberg)  
Nov 5-16 (MWF) 3:15-5 p.m. \$25-\$40-\$60
- 530 SPSS (statistics package) (Bruce Center)  
Nov 5-9 (MWF) 2:15-4 p.m. \$20-\$30-\$55
- 570 TELL-A-GRAF Graphics (Bryan Senn)  
Nov 12-21 (MW) 2:15-4 p.m. \$30-\$45-\$75

REGISTRATION: You can register at the UCC Reference Room, 140 Experimental Engineering (hours: 8 a.m. to 4:30 p.m., Monday through Friday). A self-service terminal for registration is located in the Reference Room. We accept mail registrations for an additional \$1 fee per class. The deadline for registration is Reference Room closing on the last working day *before* the class begins. You may pay course fees with cash, check, University journal vouchers, or you can charge them

to your non-instructional UCC user account.

REFUND POLICY: No refunds are made after the class begins. Refunds are made in the same form as the fee was paid, i.e., check, journal voucher, UCC account credit.

If you have questions about short courses or about registration, call Jerry Stearns, 376-8806, or see WRITEUP(CLASSES) on the MERITSS or CYBER CA systems.

## PHONE NUMBERS

<p>Access:</p> <p>CYBER(CA)—10, 30 cps .....376-5730              —120 cps .....376-5706</p> <p>MERITSS(ME)—10, 30 cps .....376-7730              —120 cps .....376-7120</p> <p>VAX/VMS(VA)—(autobaud) .....376-9770</p> <p>Budgets .....373-2521</p> <p>Computer-Aided Instruction .....376-2975</p> <p>Computer Hours (recorded message) .....373-4927</p> <p>Consulting</p> <p>    HELP-line .....376-5592              7 a.m.-7 p.m., Monday-Friday</p> <p>    Statistics Packages .....376-1761              1-2 p.m., Monday-Friday</p> <p>    Data Bases .....376-1761              10-11 a.m., Monday-Friday</p> <p>    Microcomputers .....376-4276              9:30 a.m.-noon and 1:30-4 p.m., Monday-Friday</p> <p>    Humanities Computing .....376-2944              2-3 p.m., Tuesday &amp; Wednesday</p> <p>    Text Processing .....376-2944              1-4 p.m., Monday-Friday</p> <p>Contract Programming .....376-1764</p> <p>Data Base Applications .....376-1764</p> <p>EDUNET Liaison .....373-7745</p> <p>Engineering Services .....376-1023, 376-8153</p> <p>Equipment Purchase/Information .....376-8153</p>	<p>Experimental Engineering I/O .....373-4596</p> <p>Graphics Software .....638-0541</p> <p>HELP-line .....376-5592              7 a.m.-7 p.m., Monday-Friday</p> <p>HOURS-line (recorded message) .....373-4927</p> <p>Information, Experimental Engineering .....373-4360</p> <p>Information, Lauderdale .....373-4912</p> <p>Instructional Labs .....376-2703</p> <p>Instructional Services .....373-7745</p> <p>Lauderdale Computer Room .....373-4940</p> <p>Lauderdale Services .....638-0523</p> <p>Lauderdale Services Manager .....373-7538</p> <p>Lauderdale Users' Room .....373-4921</p> <p>MECC Liaison .....373-7745</p> <p>Newsletter Subscription .....376-1491</p> <p>Permanent File Restoration .....376-5605</p> <p>Professional Services Division (PSD) .....376-1764</p> <p>Project Assistance .....376-1764</p> <p>Reference Room .....373-7744</p> <p>Remote Batch (RJE) Services .....376-2703</p> <p>Short Courses .....376-8806</p> <p>Shuttle Bus Service .....376-3068</p> <p>System Status (recorded message) .....373-4927</p> <p>Tape Librarian: see Lauderdale Services</p> <p>Text Processing Services .....376-2943</p> <p>User Accounts .....373-4548</p>
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## OPERATING HOURS

	CYBER (CA)	Low rate	CRAY (CR)	MERITSS (ME)	VAX (VA)
M-F	7 a.m. - 4 a.m.	8 p.m. - 4 a.m.	7 a.m. - midnight	7:45 a.m. - 3:30 a.m.	8 a.m. - 6 a.m.
Sat	4 a.m. - 5:15 p.m.	4 a.m. - 5:15 p.m.	7 a.m. - 5 p.m.	7:45 a.m. - 3:30 a.m.	24 hours
Sun	4 p.m. - 1 a.m.	4 p.m. - 1 a.m.	4 p.m. - midnight	4 p.m. - 3:30 a.m.	24 hours

## PUBLIC LABS—TWIN CITIES CAMPUS

Location	Batch	Interactive	Micro	Location	Batch	Interactive	Micro
<i>East Bank</i>				<i>West Bank</i>			
Arch 160		X	X	BlegH 25		*	
CentH		X		BlegH 90	X		
ComH		X		BlegH 140		X	
DiehlH 270, 207		X		MdbH		X	
EltH 121, 125		X		OMWL 2		X	
EltH N640	X			SocSci 167			X
Exp Eng 130		*		<i>St. Paul</i>			
FolH 14, 14a	X	X*	X	BaH		X	
LindH 26	X	X		ClaOff 125	X	X	
MechE 308		X		* Research cluster; access to CYBER CA and VAX/VMS			
Physics 69		*		X in interactive column indicates access to MERITSS			
SanfH		X					
TerrH		X					
Vinch 4		X					
WaLib B9		X					

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Michael M. Skow, Acting Director

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