

COS Moves to Version 1.12

On April 13, we upgraded our CRAY-1 operating system to COS 1.12. The upgrade makes available to our CRAY users many significant new features, including:

- Permanent dataset privacy, a much needed feature. CRAY users now have complete control (with the new PERMIT command) over dataset access.
- COS security, which permits secure parameters on control statements. COS 1.12 edits out these parameters before echoing the control statements to your logfile.
- Improved memory management facilities. The system adjusts field length between job steps automatically unless you disable system field length control with the new MEMORY statement.
- A new subroutine calling sequence for stack-based languages. COS 1.12 stacks arguments in registers instead of loading them, as in previous versions of COS, before an entry point.
- CRAY Pascal. The new CRAY Pascal compiler generally meets with the ISO Level 1 Pascal standard.
- A segmented loader.
- A more effective job scheduler.

COS 1.2 Documents

You can refer to Cray Research, Inc. (CRI) and UCC documents listed in Figure 1 to learn more about COS. All these documents have been revised to document new COS 1.12 features.

The three on-line WRITEUPS concerning the CRAY provide useful information on COS 1.12.

Publisher	Title
CRI	CAL Assembler Reference Manual
CRI	FORTRAN (CFT) Reference Manual
CRI	Library Reference Manual
CRI	CRAY-OS Reference Manual
CRI	CRAY-OS Message Manual
CRI	CRAY UPDATE Reference Manual
CRI	Segmented Loader
CRI	CRAY Pascal
UCC	WRITEUP(CRAY)
UCC	HELP(CRAYPW)
UCC	WRITEUP(CRAYCHG)
UCC	WRITEUP(CRAYUSE)

Figure 1. Cray (CRI) and UCC publications that document COS 1.12. WRITEUPS and HELP are on-line documents available on the CYBER CA.

WRITEUP(CRAYCHG) summarizes the changes made to COS in version 1.12, including:

- Several of the most successful control statements
- Changes to subprogram libraries
- Changes to CFT
- A description of CRAY Pascal

WRITEUP(CRAY) briefly describes all COS control statements, including the new ones in COS 1.12. Each CRAY installation defines certain defaults and parameters within COS; WRITEUP(CRAY) tells you what values those locally-defined features have at UCC.

WRITEUP(CRAYUSE) is an introduction to using our CRAY-1. It briefly describes our CRAY hardware, software, and services, and provides sample CRAY jobs with explanations.

Upgrade Problems

Our upgrade to COS 1.12, originally scheduled for March 15, was

postponed until April 13. During advance test periods, CRAY users found they needed more time to convert large programs to the new system. In addition, some important software on the CRAY, including DISPLA, one of our most popular graphics programs, required extensive modification to run under COS 1.12. Faced with these problems, we postponed the upgrade and gave users and UCC programmers more time to prepare for the change. We took advantage of the postponement to test the new system more fully.

The upgrade to COS 1.12, when it finally occurred, went smoothly. The present status of the new system is good: as we go to press, no significant bugs have surfaced in the new operating system and users seem pleased with the new 1.12 features.

(Steven K. Brehe)

CORRECTION

The caption for Table 1, on page 29 of the April Newsletter, should read as follows:

Table 1. Resource use per user connect hour (M = × 1,000,000, K = × 1000)

Programming Languages

M77 ERROR MESSAGE WRITEUP

In our report on M77 in the March Newsletter, we described some of the many changes made to the M77 compiler for Version 2.5. One of our major goals for this version was to provide concise, easy-to-understand messages for incorrect, inefficient, or non-standard uses. A new WRITEUP that explains and provides examples of all error messages is now available on the CYBERS. This WRITEUP should be used with the future version of M77 because it is indexed by error numbers, which are provided only in the future version.

For interactive information about an individual error message (each explanation less than 24 lines), enter:

```
WRITEUP,M77ERR=errnumber OR
```

```
WRITEUP,M77ERR=errnum1+errnum2
```

For example, if the following error message appears:

```
(3) CAUTION.615 SET BUT NEVER USED -  
SAM
```

you can obtain a short explanation of the error message by entering:

```
WRITEUP,M77ERR=615
```

You can also use this WRITEUP in a batch environment. For an alphabetical listing of the entire WRITEUP (about 88 pages) suitable for a line printer, enter:

```
WRITEUP(M77ERR=*/PT=AS,L=LIST)
```

```
ROUTE(LIST,DC=PR,EC=A9,BIN=XXXX)
```

Exhibit 1 provides a sample M77 run with errors, and the explanation of those errors via WRITEUP(M77ERR).

(Janet Eberhart)

```
M77 ANSI 77 FORTRAN (VERSION 2.5 of 84/03/23) ON THE CY74
```

```
00100 A=4.5
```

```
00110 IF(A.GE.5.6)
```

```
(110) WARNING.730 THEN ASSUMED AFTER LOGICAL IF
```

```
00120 A = (A*2) - (A*2)
```

```
(120) WARNING.565 SUBTRACT OF SAME OPERAND IS ZERO
```

```
00130 ENDIF
```

```
00150 END
```

```
/writeup,m77err=730+565
```

```
730 WARNING - THEN ASSUMED AFTER LOGICAL IF
```

If no FORTRAN statement follows the logical expression parenthesis of an IF statement, M77 assumes the syntax word THEN follows.

Error example:

```
IF(A.EQ.2) [correct to IF(A.EQ.2) THEN]
```

```
A=3
```

```
ENDIF
```

```
565 WARNING - SUBTRACT OF SAME OPERAND IS ZERO
```

The result of subtracting an INTEGER, REAL, DOUBLE PRECISION, or COMPLEX operand from itself is zero. This may be due to entering a statement incorrectly.

Error examples:

```
K=J-J
```

```
Z=(COS(Y)-A)-(COS(Y)-A)
```

Exhibit 1. A sample M77 run with error messages and their explanations.

MERITSS

EXPANDED HOURS

MERITSS users have requested that we increase the number of ME machine hours. As this Newsletter goes to press, we plan to make the machine available until 3:30 a.m. daily effective April 15. See WRITEUP(HOURS) to verify the current hours. This change affects only the ME CYBER 174. We hope that MERITSS users will find the extra time helpful.

Documentation Data

GENCORD WRITEUP

The latest version of GENCORD is available on the CYBERS in WRITEUP form. You can see an on-line copy on the system by using the control statement:

```
WRITEUP(GENCORD)
```

You can also buy a line printer or laser printer copy of the WRITEUP from the Computer Store, 20 Experimental Engineering.

Non-Numeric Computing

LECTURE SERIES

Tsvee Zahavy, of the Department of Ancient Near Eastern and Jewish Studies, is the speaker at the May lecture in our series on non-numeric computing applications. The lecture, called "Why We Need a Liberal Arts Computer Center: A User's Point of View," will be at 2:15 p.m., Thursday, May 10, in 447 Ford Hall.

The Classifieds

FOR SALE

Metafile software and manuals. NEW. Journal voucher or cash. 373-3666.

Grants for Research

REGIONAL EDUCATION LABS AND RESEARCH CENTERS

The Education Department recently laid the regulatory groundwork for future funding of regional education laboratories and research centers.

Specific priorities for the upcoming competition are not included, but the proposed rules list 26 general funding priorities for research centers and spell out how the Education Department plans to select lab and center proposals.

The National Institute of Education (NIE) currently supports seven regional labs and ten research and development centers. All but one of these contracts expire in 1985, when NIE will make new awards. The department has not indicated how many new labs and centers it will fund.

The Education Department will choose from among the following priorities in each competition for research centers: learning, teaching, educational technology, instructional processes and materials, educational personnel training, organization and management of schools, evaluation, school governance, and school finance.

Other items that will be included are: dissemination and knowledge use in education, educational change, student achievement and educational standards, family influences, desegregation and busing, English literacy, math, science, foreign languages, preschool education, elementary and secondary education, adolescent education, postsecondary education, adult and continuing education, and education of special populations.

The proposed rules appeared in the March 26 *Federal Register*. For more information, contact:

Donald Fischer
National Institute of Education
1200 19th Street NW
Washington, D.C. 20208
(202) 254-7180

(Holly Hexter, Federal Grants & Contracts Weekly)

Microcosm

NEW ADDITION TO THE MICRO RESEARCH LAB

A new micro has recently put in its appearance at the Microcomputer Research Lab. This month, a Zenith Z-150 microcomputer has arrived. The Z-150 is Zenith's "clone" of the popular IBM-PC. Zenith also has a portable version, the Z-160. You might want to consider the Z-150 if you want to run IBM-PC software, but don't want to pay IBM hardware prices.

We have found that the Z-150 runs most important IBM-PC software, including WordStar, VisiCalc, Word Perfect, Turbo Pascal, FinalWord, and others. Zenith has achieved a fairly high degree of compatibility with the IBM-PC. We have not tested every piece of software on the market, however. If you have some IBM-PC software that you are curious about, please feel free to visit the Microcomputer Research Lab to try running the software on the Z-150.

The standard Z-150 comes with 128K RAM, two serial ports, one parallel printer port, composite and RGB video output, graphics capability, detached keyboard, four empty IBM-PC expansion slots, and the MS-DOS operating system. Empty sockets on the memory card will hold additional memory up to 320K. You can add a second memory card for a total of 640K of memory. The Z-160 is similar and has a built-in nine-inch amber monitor.

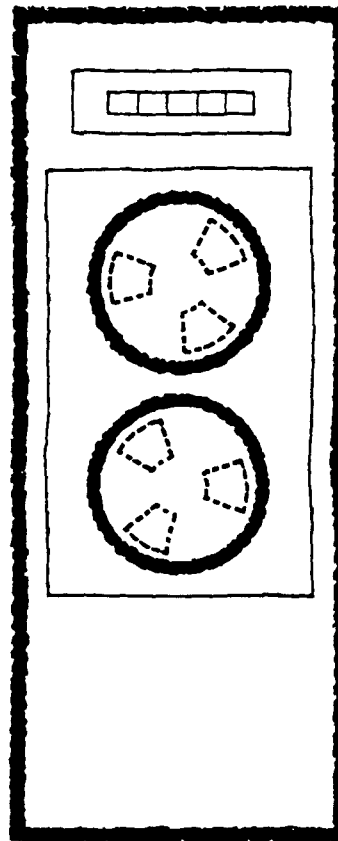
The Z-150 and Z-160 are available through the UCC Computer Store at substantial discounts for University of Minnesota faculty, staff, and students. Departments can order the machines through the purchasing department. The Z-150s are available now. The Z-160s will be available in mid-May. If you would like to see the Zenith Z-150 or you would like information about prices and software compatibility, call the Micro HELP-Line (376-4276; 10 a.m. to noon and 2 to 4 p.m., Monday through Friday), or visit the Microcomputer Research Lab (125 Shepherd Labs) during HELP-Line hours.

(Mark McCahill)

U OF M MICRO USERS GROUP

The May meeting of the University of Minnesota Microcomputer Users Group will include a talk by Dale Archibald, editor of the monthly *Computer User*, on how to choose telecommunications software. The group meets Thursday, May 10, at 3:15 p.m. in 555 Diehl Hall.

For more information about this program, call the Micro HELP-line, 376-4276.



All Systems Bulletins

MEMORIAL DAY HOURS

Our schedule for the Memorial Day holiday will be as follows:

	DOWN	UP
CRAY	Midnight, Sun. 5/27	6 p.m., Mon. 5/28
CYBER CA	1 a.m., Mon. 5/28	6 p.m., Mon. 5/28
CYBER ME	Midnight, Sun. 5/27	6 p.m., Mon. 5/28
CYBER MD	Midnight, Sun. 5/27	6 p.m., Mon. 5/28
VAX 11/780	1 a.m., Mon. 5/28	6 p.m., Mon. 5/28
Experimental Engineering I/O Station	4 p.m., Sat. 5/26	6 p.m., Mon. 5/28

Spring Quarter Short Courses

INTRODUCTORY COURSES

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

150 Intro to the CRAY-1 and COS (Kurt Richards)
May 7-10 (MTTh) 3:15-5 p.m.

ADVANCED COURSES

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

640 Beginning Pascal (Peter Oberg)
May 7-18 (MWF) 3:15-5 p.m. \$25-\$40-\$60

530 SPSS (statistics package) (Bruce Center)
May 14-18 (MWF) 2:15-4 p.m. \$20-\$30-\$55

570 TELL-A-GRAF Graphics (Brian Senn)
May 15-24 (TTh) 3:15-5 p.m. \$30-\$45-\$75

650 COMPASS (CYBER assembly language) (Tom Kovarik and John Larsen)
May 14-June 1 (MWF) 2:15-4 p.m. \$30-\$50-\$80

REGISTRATION: You can register at the UCC Computer Store, 20 Experimental Engineering (hours: 9 a.m. to 4:30 p.m., Monday through Thursday; 9 a.m. to 3 p.m., Friday). A self-service terminal for registration is located inside the store. We accept mail registrations for an additional \$1 fee per class. The deadline for registration is store closing on the last working day *before* the class begins. You may pay course fees with cash, check, University journal voucher, 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 systems.

PHONE NUMBERS

Access:	Engineering Services	376-1023, 376-8153
CYBER(CA)—10, 30 cps	Equipment Purchase/Information	376-8153
—120 cps	Experimental Engineering I/O	373-4596
MERITSS(ME)—10, 30 cps	Graphics Software	376-5592
—120 cps	HELP-line	376-5592
VAX/VMS(VA)—(autobaud)	9 a.m.-5 p.m., Monday-Friday	
Budgets	HOURS-line (recorded message)	373-4927
Computer-Aided Instruction	Information, Experimental Engineering	373-4360
Computer Hours (recorded message)	Information, Lauderdale	373-4912
Computer Store	Instructional Labs	376-2703
9 a.m.-4:30 p.m., M-Th; 9 a.m.-3 p.m., F	Instructional Services	373-7745
Consulting	Lauderdale Computer Room	373-4940
HELP-line	Lauderdale Services	373-4995
9 a.m.-5 p.m., Monday-Friday	Lauderdale Services Manager	373-7538
Business Data Products	Lauderdale Users' Room	373-4921
1-3 p.m., Monday-Friday	MECC Liaison	373-7745
Statistics Packages	Newsletter Subscription	373-4912
1-2 p.m., Monday-Friday	Permanent File Restoration	376-5605
Data Bases	Professional Services Division (PSD)	376-1764
10-11 a.m., Monday-Friday	Project Assistance	376-1764
Microcomputers	Reference Room	373-7744
10-12 a.m. and 2-4 p.m., Monday-Friday	Remote Batch (RJE) Services	376-2703
Non-Numeric Computing	Short Courses	376-8806
1-3 p.m., Monday-Friday	Shuttle Bus Service	376-3068
TELL-A-GRAF/DISSPLA	System Status (recorded message)	373-4927
1-3 p.m. Tuesday, Thursday	Tape Librarian: see Lauderdale Services	
Contract Programming	Text Processing Services	376-2943
Data Base Applications	User Accounts	373-4548
EDUNET Liaison		

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	
DieH 270, 207		X		MdbH		X	
EltH 121, 125		X		OMWL 2		X	
EltH N640	X			SocSci 167			X
Exp Eng 140		*					
FolH 14, 14a	X	X*	X	<i>St. Paul</i>			
LindH 26	X	X		BaH		X	
MechE 308		X		ClaOff 125	X	X	
Physics 69		*					
SanfH		X					
TerrH		X					
Vinch 4		X					
WaLib 204		X					

* Research cluster; access to CYBER CA and VAX/VMS
 X in interactive column indicates access to MERITSS

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Michael M. Skow, Acting Director

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