

The ACSS

# Newsletter

University of Minnesota  
Twin Cities  
May 1988

## VMS News

### **VAX VX to be Upgraded; VMS 5.0 Coming**

L. A. Liddiard

BITNET: LIDDIARD@UMNACVX

Digital Equipment Corporation (DEC) has given ACSS an April 23 shipping date for a VAX 8650 module upgrade and for 64 million bytes of additional memory for our VAX. ACSS expects to install this upgrade and memory on a Sunday in early May; the actual date will be given on login news. The VAX 8600 will then become a VAX 8650 having 44 percent more CPU power, equivalent to 6 VAX 11/780s. Memory will be increased from 24 to 88 million bytes, giving 2.5 times more memory. All working user programs will continue to execute correctly in the upgraded system.

ACSS needs to expand the CPU power and memory on the VX to allow continued growth in ACSS's VMS service, which has begun to be very busy during peak usage periods each month.

The SBU normal rate for the VAX will change from 8.5 cents to 12 cents (8.5 times 1.44=12.24) which will result in most users seeing a 2 percent reduction in charges. Correspondingly the delay rate will change from 5.1 cents to 7.2 cents. Users should see additional reduction in SBU charges when they use or are given larger working sets of paging memory, since page faults occurring during program execution incur SBU charges that can be avoided with larger page sets.

#### **Coming System Upgrade: VMS 5.0**

Digital Equipment has announced a 5.0 version of VMS, which we expect to install during the winter quarter break of the 1988-89

*continued on page 99*

## **In This Issue . . .**

Jill McAllister tells you how to use nicknames and distribution lists to **make All-in-1 electronic mail more convenient.**

Ron Zacharski announces **new versions of AI software.**

Our **new log-in messages** tell you the dollar amounts of computing resources you've used on your accounts. Lawrence Liddiard discusses these and other log-in messages.

Elsewhere in this issue, we have information on documentation, short courses, and an **updated Central Configuration Diagram.**

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**ENCORE UX is**

**BITNET Node**

**(See page 100.)**

# Help Page

## HELP-LINES

### Mainframe (CA,NV,UX,VX):

626-5592 8 am to 5 pm weekdays

### Artificial Intelligence:

625-8332 3 to 4 pm weekdays

### Data Base:

626-1887 10 to 11 am weekdays

### Graphics:

626-5592 8 am to 5 pm weekdays

### Liberal Arts, Text Analysis:

625-8332 3 to 4 pm weekdays

### Microcomputer:

626-4276 9 am to 4 pm, weekdays  
(Closed 12:00 to 1:30 pm,  
Monday, Tuesday, and Friday.)

### Statistics:

626-1887 1 to 3 pm weekdays

### Text Processing:

625-1391 10 am to noon, Tuesday,  
Wednesday, Thursday

## CONSULTING

### Walk-In

#### East Bank:

128C Lind Hall; 10 am to 4 pm, weekdays;

#### West Bank:

140 Blegen Hall; 11:30 am to 1:30 pm, Tuesday;  
10:00 to noon, Wednesday; and  
12:30 pm - 2:30 pm Thursday

#### Microcomputer:

125 Shepherd Lab; 9 am to 4 pm, weekdays  
(Closed from 12:00 to 1:30, Monday, Tuesday,  
and Friday.)

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## Electronic Mail Consulting

Consulting is now available via the mail facility on all ACSS systems (the CA, NV, VX, and UX). Send mail to user name CONSULT for questions after hours and for low-priority questions that are not critical to your immediate computing work. Replies will be sent to your account through the mail facility on your system.

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## Instructional Computing Consultant

Department instructors may call 626-0200 for assistance in choosing ACSS systems (CYBER/NOS, CYBER/VE, ENCORE/UNIX, VAX/VMS), software, and for answers to any other inquiries on using computers for instructional computing.

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## COMPUTING INFORMATION CENTER

128A Lind Hall, 625-7397, YZE6075@UMNACCA, YZE6075@UMNACUX, or MAD@UMNACVX

**Computing account and grant applications** available for CYBER, ENCORE, and VAX computers.

**Short course enrollment.** Short course schedules and class descriptions available.

**Assistance in ordering vendor documentation.** Vendor documentation is not always available in the University bookstores and may be ordered directly from the company.

**Complete documentation collection.** Reference copies of vendor and all other documentation for ACSS software.

**Free ACSS documentation.** General information, and mainframe and microcomputer information available.

**Computing Newsletters.** Subscribe to the ACSS *Newsletter* and the ACSS *Microcomputer Newsletter*. Newsletters from other computing centers are also available for reference.

continued from page 97

academic year. This new system will allow the 8650 to use Local Area VAXcluster software to provide more VMS CPU cycles at a lower cost.

## Configuration Diagram

The upgraded VAX 8650 is shown in the updated ACSS Central Configuration Diagram, on page 105 of this issue. Note the new emphasis placed on ACSS's completed TCP/IP interconnection among its mainframes and to the campus internet. The diagram also provides the BITNET and University internet names for the central systems.

# Tools for Instructional Administrators on VX

*Marisa Riviere*

BITNET: MARISA@UMNACVX

DECNET: ACSSVX::MARISA

ACSS had developed a package of tools for the administration of instructional users on the VX system. The tools allow departmental and class administrators to:

- modify passwords.
- allocate file space.
- monitor file space.
- restrict CPU and connect time.
- monitor used CPU and connect time.
- display information on utilized CPU and connect time for each student at login time.
- monitor process on-line.
- terminate process.
- observe file contents.
- handle end-of-the-quarter file clean-up.
- create and control the login environment.
- modify large numbers of user names with a few instructions.

These administrative tools were described in more detail in previous issues of this Newsletter and are described on the on-line document **Instructional.Admin** on ACSS\$Writeup. (The **Instructional.Admin** writeup has been reviewed and updated during the past month.)

We invite your suggestions for further additions to the administrative tools; we will be happy to work with instructional administrators who may need help to become familiar with this package.

## ENCORE UX Is BITNET Node

*Marshall Midden*

BITNET: M4@UMNACUX

The ENCORE UX, the ACSS UNIX system, is now part of the BITNET electronic mail network, as node UMNACUX. The UX is a *mail-only* node — that is, you can send only electronic mail from the UX node; you cannot send text files or commands over BITNET from the UX.

More information about using the UX node will appear in future issues of this *Newsletter*.

## Using Nicknames and Distribution Lists in ALL-IN-1

*Jill McAllister*

BITNET: JLM@UMNACVX

This article will show you how to use nicknames and distribution lists to enhance your use of the electronic messaging functions in ALL-IN-1.

### Nicknames

Nickname Management lets you create a name for a person which is then automatically linked to that person's ALL-IN-1 name. For instance, someone may have an ALL-IN-1 name, like ABC1234, which is hard to remember. You can then create an ALL-IN-1 nickname, such as her real first name, Susan, and then simply send mail to SUSAN instead of to ABC1234.

You can get into the Nickname Management subsystem from the Main Menu, from the Directories menu (DIR), or from the Electronic Messaging subsystem (EM). The Nickname Management subsystem is used to create, modify, or delete a nickname, or to see a list of the nicknames you currently have defined. Enter **NI** to access this subsystem.

As with the subsystems discussed in previous articles, when you want to work with a certain item, in this case a nickname, it must be "current." To make a nickname current, you need to Select it using the **SEL** option from the Nickname Management menu. After entering **SEL**, you will be prompted for the nickname you wish to work with, or you may type **Gold L** (the **PF1** key on the VT100 terminal, followed by the **L** key) at that point to see a list of all of the nicknames you have set up. Two alternate ways of seeing all of your nicknames are to type **R** for Read or **I** for Index.

To set up a nickname, type **C** for Create. ALL-IN-1 will prompt you for the nickname you want to use, and then for the mail address (or ALL-IN-1 name) that is to be assigned to that nickname. Note that this person does not see the nickname you are using when he or she receives the mail you have sent.

The Edit option (**E**) and the Delete option (**D**) will allow you to edit or delete the nickname that is current (that is, the one that appears in the upper righthand corner in your Current Item Block). If you type **D**, ALL-IN-1 will ask you to confirm that you wish to delete this nickname by prompting you to enter **Y** for Yes or **N** for No. The **E** option only allows you to change the mail address, not

*continued on page 101*

the nickname. If you want to use a new nickname for someone, use **C** (Create), and then **D** to Delete the old nickname.

## Distribution Lists

Distribution List Management lets you create a list of names, typically a group of people to whom you regularly send mail, and then give this list a name. This lets you address mail to that name, which causes ALL-IN-1 to send that message to each person on the list.

You can enter the Distribution List Management subsystem from the Main Menu, from the Directories menu, or from Electronic Messaging. It is accessed by typing **DL**.

To create a distribution list, type **C** from the DL menu. You will be prompted to type the name of your distribution list. The name you use must end with a colon (: ) or it must begin with a commercial at (@). This tells ALL-IN-1 that this name refers to a distribution list.

Next type in the name (ALL-IN-1 name or nickname you have defined) of each person to be on the list. You may even type the name of another distribution list. You may also put comments in your list. These are lines that will be ignored by ALL-IN-1 when it sends out your messages. To make a line a comment instead of an address, simply precede that line with an exclamation point (!). Remember whether you used the colon (: ) or the at sign (@) in the name of the distribution list, because you must send mail to a distribution list using the same format with which it was defined.

To edit (**E**) or delete (**D**) a list, you must first make it current by using the **SEL** (for Select) option. If you use **D**, you will be asked to confirm that choice.

To see the contents of the current distribution list, use the **R** (for Read) option from the **DL** menu. To see a list of all of your distribution lists, use the **I** (for Index) option.

The final option for distribution lists is the **CO** (for Copy) option. This lets you include all the names from your current list into another distribution list. This can save you some typing.

If you would like to be validated to use ALL-IN-1 or would like to add the ability to use DECTalk to your validations (see the article in the February 1988 issue of the *ACSS Newsletter*), please call Jill McAllister at 626-1878. Also call if you have any questions or are experiencing any problems with ALL-IN-1.

## TWG TCP/IP Software Site License

*Roger L. Gulbranson*

The University has arranged a site license with The Wollongong Group (TWG) for their Internet TCP/IP software. The agreement with TWG is called a Volume License and Support Agreement (VLSA). Users can license this software and get annual maintenance at reduced prices. ACSS will be providing the on-campus support for VAX VMS systems. We would also like to support micro VAX II and VAX station 2000 systems, provided that there is sufficient interest. Please contact Paul Fakler for additional details (phone: 626-1654, mail: PWF@VX.ACSS.UMN.EDU or PWF@UMNACVX).

## Updates to Two Public Domain AI Powerhouses

Ron Zacharski

BITNET: RAZ@UMNACVX

ADA PD Prolog 1.95 for IBM-PC compatibles and XLisp 2.0 for both Macintosh and IBM-PC compatibles are now available at no cost from the ACSS Special Projects group. The prior versions we distributed were ADA PD Prolog 1.5 and XLisp 1.7; the upgrades provide some important enhancements.

### XLisp

XLisp is a lexically-scoped version of Lisp which is close to the Common Lisp standard and includes extensions to support object oriented programming. XLisp 1.7 would not work on a Macintosh running Finder 5.6 or newer and this has been fixed in version 2.0.

The most significant change for both the PC and Macintosh implementations is that it is now possible to save XLisp's workspace between sessions. The `&KEY` lambda list keyword is now supported as are the initialization forms for `&OPTIONAL`, `&KEY` and `&AUX` parameters. In this new version, as in most Lisps except Scheme which has only one namespace, symbols have two value cells, one for normal values and one for function values. `SETQ` sets the normal value and `DEFUN` sets the functional value. There is a host of new functions including 20 additional string handling functions.

### PD Prolog

PD Prolog is an implementation of the Edinburgh syntax of Prolog for IBM-PC compatibles. It was designed to closely conform to Edinburgh standard, to allow the user to use any of the commonly available Prolog books as a companion manual. PD Prolog 1.95 adds a program editor and a number of demonstration programs to an already fine Prolog implementation. Simon Blackwell's PIE Truth Maintenance System is included in this release. PIE provides mechanisms for forward and backward chaining, consistency checking and dependency based truth maintenance and includes an editor and compiler.

You can obtain a copy of XLisp 2.0 for the Macintosh from the Mac Information Server where it is located in the *AI Folder* inside the *Developers Folder*. (For information about the server, see the December 1987 issue of the *Microcomputer Newsletter*.) You can also obtain a copy of either Macintosh XLisp, IBM-PC XLisp, or IBM-PC PD Prolog from the Special Projects Group.

Special Projects Group  
M141 Fraser Hall (office)  
128A Lind Hall (mailing address)  
207 Church St. SE.  
625-8332

## Another Line For the Login Output: Why Usage Totals?

L. A. Liddiard

BITNET: LIDDIARD@UMNACVX

When you log on to our systems, the new message will read like this:

ACSS records show total \$xxx.xx usage from *begindate* thru *enddate* for *username*.

Most users will have the *begindate* of 01Jul87 for this year. Students using instructional accounts will have *begindates* indicating the beginning of the current quarter.

### Background

For each of its systems, ACSS has supplied commands such as **ACCSTAT** and **COST** to help users keep track of the computing resources they've used and the related costs that they've incurred. But sometimes users forget to keep track, and this sometimes meant cost overruns for the department budget officers, faculty members, or graduate students who were responsible for the computer account.

To address this problem, ACSS has provided each system with a file containing usage-to-date on the NV, UX, and VX. (ACCSTAT on the CYBER will provide somewhat different results.) This file provides an economical way of presenting, when you log in, an *estimate* of total dollar usage from the beginning of the quarter or fiscal year through the last daily update of ACSS accounting records. This estimate is given in the login message shown above.

### Caveats

- 1) Note that the total applies to accounts owned by the *same username* when summing across two or more ACSS systems.
- 2) Under certain circumstances, amounts shown may not increase consistently. This is a temporary situation that will be corrected soon after it occurs.
- 3) At times, dollar amounts might be underestimated temporarily when account records for a specific ACSS system are not available for processing.
- 4) On NOS, NOS/VE, and VMS these messages are put out by the system login or prolog file, whereas UMAX 4.2 has a command line in the user login file that you may change on your account.
- 5) Students should understand that departments are responsible for these dollar amounts for instructional accounts.

*continued on page 104*

## Changing Login Messages

Long-time users of interactive systems have noticed the changing trends in messages the systems put out at login time. In the early years of timesharing, you were warmly greeted by the computer *before* login. After login, the computer proceeded to tell you its name and operating system, the current date, and a lot of other news that somebody was sure you wanted to know.

When individuals were connected to hardcopy terminals, the printing of this information gave a permanent record that could be referred to during or after the session. At that time, 10 and 30 character per second (cps) terminals were the norm, and large amounts of login output caused users to complain.

Then came the video terminal, operating between 120 to 960 characters per second, which required quick hands to stop important but excessive login output from scrolling off the screen. In both situations, computer centers saw that it was, and is, prudent to display only essential information in the login output.

Meanwhile, people who were caught attempting to penetrate computer systems argued that the welcome message before login meant they were invited to break into systems. System administrators then decided to have the welcome message displayed only *after* a successful login.

Another security feature was to let individuals know if anyone else had used their account by providing date and time messages for the previous and current login. The long news-type messages were shortened to single header-line announcements of NEWS items not previously seen by the login user.

For the electronic mail user, a brief bell tone and some sort of "You have mail" statement helped users read their new correspondence promptly.

ACSS currently provides the welcome message before login on the NOS system. The message about previous logins is not currently available on NOS and NOS/VE systems, but we have requested that Control Data implement it in future versions of their operating systems.

Operations

## Saturday System Hours Extended

*Arvid Vangness*

Effective April 9 the Saturday hours for the CYBER 855 (CA), CYBER 830 (NV), and the VAX 8600 (VX) will be extended until 2400 (midnight).

The old production hours on Saturdays ended at 2100 (9:00 p.m.) on the CYBER (CA) and VAX (VX). The old production hours on the CYBER (NV) ended at 2200 (10 p.m.).



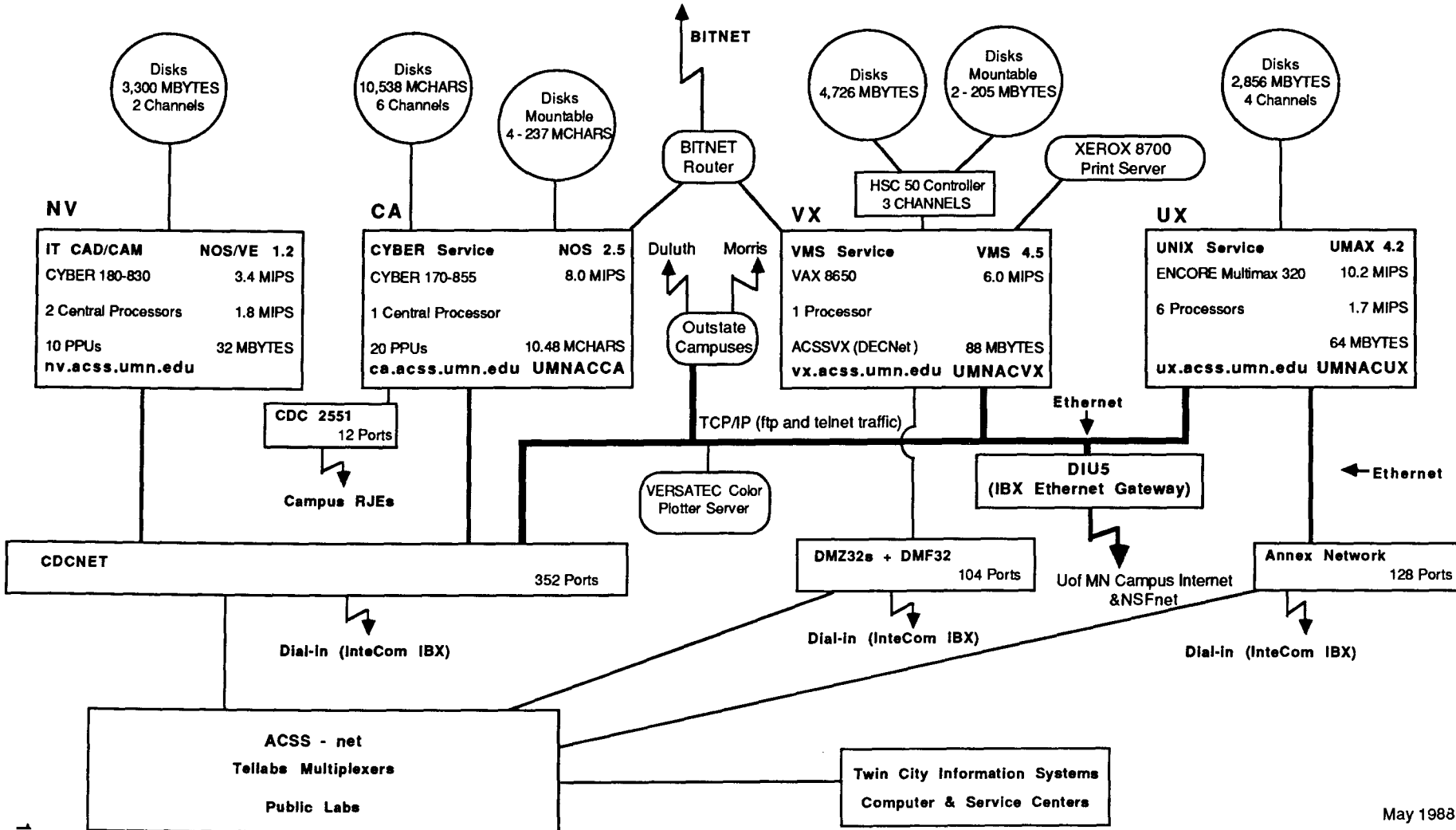
# ACSS Central Configuration

Academic Computing Services and Systems  
University of Minnesota

## KEY

### Mnemonic ID

Service	Operating System + Level
System Model Number	Total MIPS for System
Number of Processors	MIPS for Single Processor
Other	Memory in Million Units
UofM Internet Name	BITNET Name



# Spring Quarter Short Courses 1988

## MAINFRAME COURSES

Mainframe courses are free. To register, call 625-7397.  
Some classes have size limitations: Register early.

### Advanced

Electronic Mail (VAX, BITNET)	JHS	May 16-18	MW	2:15-4 pm
INGRES (Data Base Management)	PJO	May 23-27	MWF	2:15-4 pm

## MICROCOMPUTER COURSES

FEES: 1) U of MN Students, 2) U of MN Staff/Faculty, 3) Non-University persons.

### IBM and IBM-compatible Courses

Limited to 10 people.

				(1) (2) (3)
Introduction to Microsoft Word for IBM	May 25-26	WTh	1:30-4 pm	\$35,\$45,\$85
Managing Your Hard Disk	May 10-11	TW	1:30-4 pm	\$40,\$50,\$80
Section 2	May 26	Th	10:00-noon	\$25,\$35,\$60
Intermediate Lotus 1-2-3	May 10-12	TWTh	10:00 am-noon	\$40,\$50,\$80
Introduction to dBase III				
Section 2				

## SHORT COURSE INFORMATION

**Prerequisites:** Please note any prerequisites for the class you are interested in. Instructors will not be able to review any prerequisite information. If you need more information on short courses, call the Computing Information Center at 625-7397.

**Limits:** All microcomputer classes and many mainframe classes have limits to class size. Please try to register early to be sure of getting a place. If you decide to withdraw from a class, please do so as soon as possible, so that we may make the space available to others.

**Registration:** Registration is located at the ACSS Computing Information Center, 128A Lind Hall. (Hours: 8:00 a.m. to 4:30 p.m., Monday through Friday.) Fees must accompany registration. Mail registrations will be accepted. Deadline for registering is 4:00 p.m. on the last working day before the class begins. Please call and give us your name if you plan to attend a free class; also call to cancel if you decide later not to attend, so we know how many to expect. We reserve the right to cancel a course if registration is insufficient. For registration information call 625-7397.

**Fees:** Fees following microcomputer courses above are for 1) University students, 2) University staff and faculty, and 3) non-University persons. Course fees may be paid by cash or check, or *include* a signed University journal voucher with registration information. Fees must be paid at the time of registration.

*No refunds* will be made after the class has begun. A penalty—reduction of the refund—will be assessed if you withdraw from a class within three days of the beginning of the class.

**Note:** Monday, May 30 is a University holiday. No classes will be held.

Holiday Hours

## Memorial Day Hours

In observance of Memorial Day, ACSS systems — the CYBER 855 (CA), VAX 8600 (VX), ENCORE (UX), and CYBER 830 (NV) — will run in unattended mode from 6 a.m. until 6 p.m. Monday, May 30. Normal operations on all systems will resume at 6 p.m. Monday, May 30. It is unlikely that any tape requests (including accessing tape-resident files on CA) or printing will be processed during Memorial Day Hours.

Instructional Computing

## Forums on Instructional Software

Information Systems, in cooperation with Projects Assist, Minnemac, and Woksape, and other departments, is sponsoring a series of weekly presentations, *Forums on Instructional Software*, on instructional computing. All lectures are held on Thursday afternoons, from 1:30 to 3 p.m., unless otherwise noted.

- |        |   |
|--------|---|
| May 12 | James S. Noblitt, Professor, Cornell University<br>IBM Consulting Scholar<br>(This forum will begin at 2:00 p.m.) |
| May 19 | Jean Magney, Assistant Professor<br>Cell Biology and Neuroanatomy   |
| May 26 | William Hansen, Professor<br>Philosophy   |
| June 2 | Ann Duin, Assistant Professor<br>Rhetoric   |

For further information or to add your name to the forum mailing list, please call Project Assist at 626-1090.

## TeX Writeup Available on the VX

*Sharon A. Krmpotich*

BITNET: SAK@UMNACVX

VX MAIL: SAK

We have recently installed a writeup and HELP entry for the technical typesetting package, TeX, on the VAX VX. The writeup gives you a brief description of TeX, and tells you how to use it properly on the VX. It should be sufficient in helping you run TeX jobs, but you will still need to consult the TeXbook reference guide if you are unfamiliar with creating properly formatted input (manuscript) files.

To access the writeup for TeX, simply type the command:

**\$ TYPE ACSS\$WRITEUP:TEX**

Graphics

## Updated Graphic Writeups on CA and VX

*Michele Lewis*

BITNET: MAL@UMNACVX

We have updated VX and CA on-line documentation pertaining to Precision Visuals Inc.'s software. WRITEUP,DI3000 and WRITEUP,PVI have been updated on CA, and a new writeup describing the Metafile System — a method of storing and manipulating graphical information — has been installed on CA; see WRITEUP,METAFIL.

The corresponding writeups and several others have been updated on VX. See MOREHELP GRAPHICS for their descriptions and locations. In addition, a new MOREHELP entry, MOREHELP GRAPHICS METAFIL, has been installed on VX.

Documentation News

## New Manual for Magnetic Tape Users

*Paula Goblirsch*

BITNET: PMG@UMNACVX

The fourth edition of ACSS's *A Guide to Using CYBER NOS Magnetic Tapes* is now available. You can buy a copy at the Minnesota Book Center in Williamson Hall. The University bookstores can also order this manual or any of our manuals for you.

All users of magnetic tapes on the CYBER CA should be familiar with the information in this new *Guide*.

## New Version of LINDO Installed

*Michael Frisch*

CA, UX, VX: MJFRISCH

BITNET: MJFRISCH@UMNACVX

On March 25, we installed the December 23, 1987 version of the LINDO linear, integer, and quadratic programming package on the CA, VX, UX, and NV computers. It is a new package for UX and NV, and is upwardly compatible for CA and VX.

The major improvement from previous versions is the capability to handle mixed integer problems. The new LINDO commands for this are **GIN**, **IPTOL** and **BIP**. Other commands that have been added since our earlier LINDO versions are **SLB**, **PAUS**, **PAGE**, **CPRI**, **RPRI**, **SDBC**, and **RDBC**. For quick information about these commands, enter

**HELP command**

from inside LINDO. For example,

**HELP PAUS**

prints details on the **PAUS** command.

### Documentation

The reference manuals have been updated and published as the third editions. They are *User's Manual for Linear, Integer and Quadratic Programming with Lindo* and *Linear, integer and Quadratic Programming with Lindo*. These are available from Scientific Press, 507 Seaport Court, Redwood City, CA 94063, telephone: (415) 366-2577. Reserve copies are kept in the ACSS Computing Information Center, 128A Lind Hall, 625-7397.

There is abbreviated on-line documentation for LINDO on CA and NV (**writeup,lindo**), VX (**more-help applications lindo**) and UX (**man lindo**).

### Limits

The version for VX, UX, and NV allows large problems to be solved with the aid of virtual memory. The limits of this version are: 100,000 nonzero values, 5,000 rows, 15,000 columns and 14,900 integer variables. The version for CA is much smaller because it has no virtual memory, so the limits are: 3,040 nonzero values, 240 rows, 520 columns, and 400 integer variables. The limits on all machines can be changed upon request to ACSS, but the CA maximums cannot be increased by very much.

### Running LINDO

On all the computers, the command to run LINDO is just

**lindo**

*continued on page 110*

continued from page 109

but there are some other things to keep in mind. On CA, when you reply to the **PAUS** command, you must type a space before typing the carriage return; if you forget the space, the program will terminate with an end-of-file error message. On NV, all files you create to be used by LINDO must be on \$LOCAL (this is similar to the way LINDO works on CA). On UX, all files you use with LINDO must have upper case names; for example,

**take LINDATA**

The UX and VX versions are all double precision and the VX version was compiled using the / **G\_FLOATING** parameter of the **FORTTRAN** command. Thus, you should get almost exactly the same numerical results on each computer because 60 or 64 bit words are used for floating point arithmetic.

As a result of the new mixed integer capabilities in LINDO and the respect the package has gained in the research community, we plan to emphasize LINDO for LP, QP, and MIP problems and to de-emphasize the older CA packages MPOS and APEX.

If you have questions about LINDO, please contact Mike Frisch at (612) 625-5830 or use computer mail.

NOS News

## **EXPLAIN,M=COMMAND and WRITEUP,CONTROL to be Removed June 13**

*Steven Brehe*

BITNET: SKB@UMNACCA

The on-line documents EXPLAIN,M=COMMAND and WRITEUP,CONTROL will be removed from the CYBER CA on June 13.

For on-line information about NOS system commands, see **WRITEUP,COMMAND**.

# Phones/Hours/Labs

## ACSS PHONE NUMBERS

Administrative Office: 626-1600

HELP-Line 626-5592

**Access:**

CYBER (CA)	626-1620
CYBER (NV)	626-1622
ENCORE (UX)	626-1681
VAX (VX)	626-1641
RJE (2400 baud)	626-1656
RJE (4800 baud)	626-1663

**Accounts:**

CYBERs, ENCORE, VAX	625-1511
Computer Hours (recorded message)	626-1819
Computing Information Center	625-7397
Contract Services	625-2303
East Bank I/O, 128B Lind Hall	625-5082
Engineering Services	627-4357
Equipment Maintenance/Repair	627-4357
Graphics Software	626-5592
Information, Lauderdale	626-1600
Lauderdale Computer Room	626-0550
Lauderdale Services	626-1838
Magnetic Tape Librarian	626-1838
Math and Engineering Packages	625-5830
Microcomputer HelpLine	626-4276
Newsletter Subscription	625-7397
Permanent File Restoration	626-0595
Project Assist	626-1090
Public Labs (Managed by ACSS)	
170 Anderson Hall	624-6526
140 Blegen Hall	624-5278
54 Eddy Hall Annex	625-4357
14 Folwell Hall	625-4896
306B Lind Hall	625-9032
8-425 Moos T	625-1477
32 OMWL	624-6526
130 Physics	625-6820
9 Walter Library	626-1899
Lab Manager (14 Folwell Hall)	625-7850
Publications Information	626-1093
Short Course Registration	625-7397
Shuttle Bus Service	625-9525
System Status (recorded message)	626-1819
West Bank Computing Services	624-0877

For the phone numbers of consulting services see the Help Page.

## PUBLIC LABS TWIN CITIES CAMPUS

Location	Batch	Interactive	Micro
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*East Bank*

ApH 204	Closed for remodeling		
Arch 148			X
CenH		X	
ComH		X	
DieH 207, 270		X	X
EddyH Annex 54			X
EltH 121, 124	1	X	
FolH 14, 14a	1	X	X
FronH		X	
LindH 26		X	
LindH 128B	1	X	
LindH 306B			X
MasCanCtr M39		X	
MechE 308		X	
MoosT 8-425			X
Nich 109			X
Phys 130		X	X
PioH		X	
SanH		X	
TerrH		X	
VinH 4		X	
VinH 203			X
WaLib 9		X	X

*West Bank*

AndH 170	2		X
BlegH 140	1	X	
MdbH		X	
OMWL B2			X

*St. Paul*

BaH		X	
CentLib B50			X
ClaOff 125E	1	X	
ClaOff B22			X
McNH 69			X
Vet 43b			X

1 - Dot-matrix line printers allow printing from CYBER CA only.  
2 - Laser printing available from CYBER CA, ENCORE UX, and VAX VX.

For more information see WRITEUP, LABS.

## SYSTEM OPERATING HOURS

	CYBER (CA), VAX (VX)	ENCORE (UX)	CYBER (NV)	Low Rate
M-F	7 am - 4 am	7 am - 4 am	7 am - 1 am	8 pm - 4 am, 7 am - 8 am
Sat	4 am - midnight	4 am - 9 pm	7 am - midnight	all operating hours
Sun	6 pm - 4 am	6 pm - 4 am	6 pm - 1 am	all operating hours

# Contents

## VMS News

VAX VX to be Upgraded; VMS 5.0 Coming ..... 97  
Tools for Instructional Administrators on VX ..... 99

**Help Page** ..... 98

## Communications

ENCORE UX is BITNET Node ..... 100

Using Nicknames and Distribution Lists in ALL-IN-1 ..... 100

TWG TCP/IP Software Site License ..... 101

## Artificial Intelligence

Updates to Two Public Domain AI Powerhouses ..... 102

## Computing Reflections

Another Line For the Login Output: Why Usage Totals? ..... 103

## Operations

ACSS Central Configuration Diagram ..... 104

Saturday System Hours Expanded ..... 105

## Short Courses

ACSS Spring Quarter Short Courses ..... 106

## Holiday Hours

Memorial Day Hours ..... 107

## Instructional Computing

Forums on Instructional Software ..... 107

## Text Processing

TeX Writeup Available on the VX ..... 108

## Graphics

Updated Graphic Writeups on CA and VX ..... 108

## Documentation News

New Manual for Magnetic Tape Users ..... 108

## Math and Engineering Packages

New Version of LINDO Installed ..... 109

## NOS News

EXPLAIN,M=COMMAND and WRITEUP,CONTROL  
to be Removed June 13 ..... 110

Phones/Hours/Labs ..... 111

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