

Computer and Information Services Newsletter

Information Services

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Minuet 1.0, Beyond E-mail

Software for IBM-Compatibles



We've just released software that combines your favorite networking tools into one easy-to-use package, and we've named it Minuet. Minuet, which stands for Minnesota INternet User's Essential Tools, integrates several TCP/IP network tools, including electronic mail, Gopher, NetNews, Telnet, FTP, and Address book. Figure 1 shows the options available in Minuet's *Window* menu.

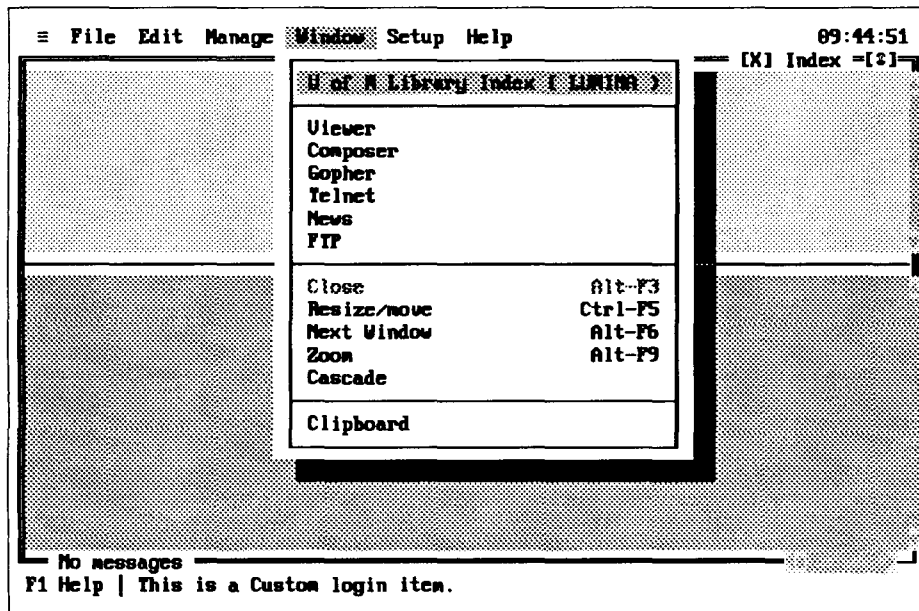
Why Use Minuet?

An *integrated* package lets you perform several tasks at once. For example, you could begin composing a message to your Chemistry professor and leave it on your screen (to finish later); FTP to the IBM ACIS server and begin downloading a Periodic Table; use the Address Book to look up a colleague's E-mail address; and start a look-up with Gopher — all at the same time.

Minuet can be used on nearly all IBM-compatible machines, including ancient PCs with monochrome display adapters. It needs 512K RAM, and it requires DOS 3.0 or above. You may use Minuet from either the DOS or DOS plus Windows operating system. (Minuet is not a Windows application but can run under Windows and has a similar look and feel.)

➔ continued on next page

Figure 1: Minuet's Window Menu



This feature is particularly useful for SLIP users. SLIP (Serial Line Internet Protocol) allows you to connect to the University's network from home and other remote sites where a wired network connection is not available. SLIP makes it possible to run TCP/IP networking software such as POPmail, NCSA Telnet, and stand-alone Gopher from an IBM or compatible microcomputer that is equipped with a high speed modem, just as if it were directly connected to the campus network.

For example, if you're using a laptop computer, you could compose and reply to an unlimited number of messages while you're sitting on a plane, and then wait until you can establish a network connection to

send the messages. All the messages can be sent at once, too, so the phone line doesn't need to be tied up.

Setup

If you're typical and are using BOOTP or SLIP to connect, setting up Minuet is a breeze. Everything is preconfigured for you; you only need to enter your userid and password from the *Setup* menu. Other network packages require a lot of fuss and bother, requiring you to edit various files and enter data.

E-mail

Minuet grew out of the original POPmail/PC program, released in May 1990. It's upwardly compatible with previous versions of POPmail, so you won't lose anything by making the switch (your old E-mail messages will still be there).

POPmail within Minuet is still the same Windows-like interface that offers pull-down menus, dialog boxes, and scroll bars (refer to the Minuet *Quick Reference Guide*, available at all Microcomputer HelpLines, for step-by-step instructions).

You still use the *Composer* window (Figure 2) to send your messages, and the *Viewer* window to view your 'fetched' messages. However, we've improved the package so that you can edit an unlimited number of Composer messages at one time. This means that you could compose several messages and just keep them on your computer until you're ready to send them.

And Enclosures, Too

As with the original POPmail, the new package supports file enclosures so that you can enclose any PC file with your message, such as PC spreadsheets and word processing documents. There is a Macintosh version of POPmail that also supports enclosures, so Mac and PC users can easily exchange documents. To make it easier to exchange enclosures with people who aren't using POPmail, we've expanded the file enclosure formats to three types: ASCII (plain) text, UU (often used on UNIX systems), or BinHex (often used on Macintosh systems, including POPmail on the Mac).

Gopher

Minuet includes a general-purpose Gopher client (which implements the original Gopher protocol). Gopher is an on-line network service that's available 24 hours a day and provides campus computer users with access to a growing body of information available on the Internet.

Gopher provides you with hierarchical menus so that you can point and click to view the information available on other Gopher servers. There are Gopher servers all over the world, and there's information to interest everyone. For example, from the *Gopher* window in Minuet, you can browse the library catalog at Long Beach, peruse MIT's

student conduct code, or obtain access to a library of popular song lyrics.

Cut, Copy, Paste, and Search

Since Minuet allows you to cut, copy and paste between functions, you can search for some information using Gopher, copy it, and paste it directly into your E-mail notes.

Gopher also allows you to search on keywords, so that you can easily locate items of particular interest. Refer to the October 1993 issue of the *Computer and Information Services Newsletter* for more information on Gopher.

FTP

File Transfer Protocol, also called FTP, is a quick and reliable means of transferring files across the network.

Minuet has a built-in simple FTP client that makes it easy to take advantage of sites that allow "anonymous" FTP. For more information, read *Tap into Information with Telnet and FTP* in our April 1993 newsletter.

When you choose FTP from the Window menu, a dialog box prompts you to enter the computer name to which you want to connect. Once you're connected, the available files will be displayed in a tree-like hierarchical format. The program automatically determines the transfer mode for most files; all you need to do is to select the file you'd like to download. There's also a built-in text browser for README files, so you can view the information about a file before you download it.

Minuet has a built-in simple FTP client that makes it easy to take advantage of sites that allow "anonymous" FTP.

Telnet

Telnet software allows you to establish a high-speed terminal session to another computer on the Internet (turning your PC into a VT100 terminal). Minuet offers an easy, point-and-click Telnet interface.

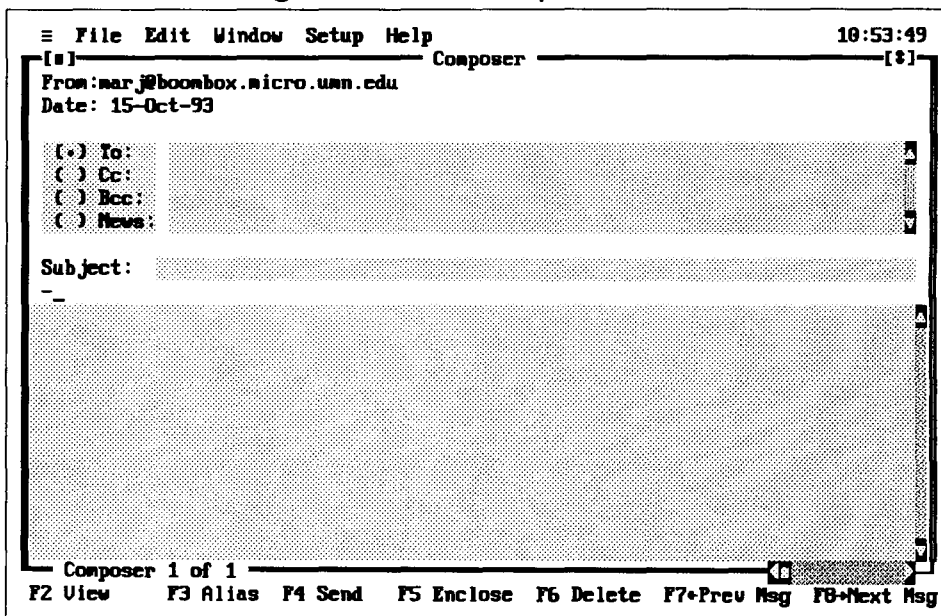
NetNews

Minuet offers a NetNews client that makes accessing news groups just as easy as using electronic mail. News groups are like electronic bulletin boards that function like the cork bulletin boards of old — someone posts a message and others read and, perhaps, respond to that message.

When you select *News* from the Window menu in Minuet, you'll be linked to USENET, a large semi-structured collection of news groups featuring messages written by folks from around the world. These messages, or articles,

POPmail within Minuet is still the same Windows-like interface that offers pull-down menus, dialog boxes, and scroll bars.

Figure 2: Minuet's Composer Window



are organized by subject into news groups whose contents cover a broad spectrum of interests. Categories include science (all fields), computers (manufacturers, operating systems, programming languages, and more), recreation, society, and local interest. Since there are more than 6,000 news groups currently available, there's probably a group for you.

Like most people, you probably don't have the time to read every article in every group. NetNews lets you search by keyword for related groups, and will give you a list of groups to choose from. You can browse these groups, decide which ones you'd like to read regularly, and then "subscribe" to as many as you wish. Our NetNews client keeps track of those articles that you have already read, so you can spend a few minutes every day or two to get caught up on the latest news.

Watch for More Details

We'll cover Minuet's NetNews client and news groups in more detail in our December newsletter.

LUMINA

LUMINA, the University's on-line libraries catalog, is accessible via Telnet. In the past, you had to wade through several screens before actually getting into LUMINA. We have completely automated this process through Minuet. You simply select *LUMINA* from the Window menu, as shown in Figure 1, and let the program do the rest! You can browse all the stacks and databases on the Twin Cities campus with just a few keystrokes.

Additional Services

Other services available within Minuet include:

- an Address Book, for looking up U of M addresses
- a Global Address Book, for looking up addresses elsewhere

- Finger, for looking at the status of an account on a given machine
- Calculator and Base Calculator
- Calendar, for keeping track of the month
- ASCII table, for looking up ASCII codes for characters
- IP Finder, for looking up an IP address of any Internet name
- Ping, for finding out whether another computer is up and running
- Webster, for defining, spelling, and cross-referencing words.

Obtaining Minuet

There are many ways to obtain Minuet software. You may bring a formatted disk to any Microcomputer HelpLine and use the IBM Information Server machines to copy the software from the

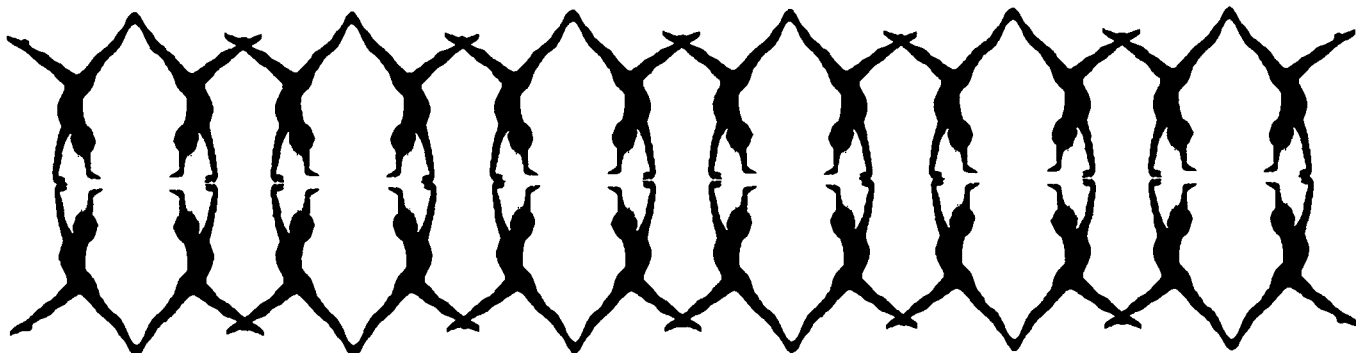
P:

public drive.

If you're on a Novell network on campus, look for the server name *micro_info*. If you see this server, you can log on as username *guest* and access all of the available software on the P: drive.

You can also access the IBM Information Server by using ftp software, with some limitations. You can connect to a machine named *bingo2.micro.umn.edu*. Log in as user *anonymous* and switch to drive P: with the *cd p:* command.

Or you can use anonymous ftp to *boombox.micro.umn.edu* and look in the appropriately named */pub* directory.



LUMINA

*Electronic Gateway to the University Libraries
Nancy Herther, University Libraries*

Overview



LUMINA is the acronym for the University Libraries' on-line public access catalog to its collections – and increasingly also the gateway to databases and other information mounted by the Libraries for the use of our campus community – and the world. If you haven't used it, don't miss out on this important research tool.

Many on campus may not remember the not-so-good old days before LUMINA began. The Libraries were then print-based and all processing and cataloging was done locally – either in Wilson Library or one of the other major libraries on campus. If you wanted to know if the Libraries owned some book, you had to physically go to the different libraries and check their card catalogs. Not even the staff knew without going from library-to-library.

The card catalog has always been a natural for conversion to machine-readable formats, and in the early 1980s the Libraries was able to secure a five-year loan from the University and major funding from the Bush Foundation in order to make that transition. The card catalog for the Libraries were closed in 1984 and in September 1987 the on-line catalog was launched. A contest was held to find a name for the system and LUMINA – which stands for the Libraries of the University of Minnesota Integrated Network Access – was chosen.

LUMINA Supports the Libraries' Goal

LUMINA supports the Libraries' goal to provide the best and most efficient way of finding materials within the library system. People worldwide have access to LUMINA through the Internet, local access through public dial-up, and terminals are available across campus. LUMINA is "the foundation of the other information services that we supply" explains Charlene Mason, who helped spearhead the LUMINA project and continues to manage it for the Libraries. AIS provides technical support and production for the database.

Not only can you search LUMINA for books, magazines, conferences, journals, etc. owned by the Libraries, but you can also use LUMINA as a gateway to electronic bibliogra-

phies and databases for searching the contents of journals and magazines to create your own reading lists or help with your research. We will have more on that in future issues of the newsletter.

This Fall the Libraries celebrated the addition of the five millionth volume to the Libraries collections. Each month about 8000 new records are added to the database. Today LUMINA allows you to see what materials are currently on order, whether or not some particular book is checked out or on reserve – as well as searching for information on CD-ROMs and other non-print materials that we own.

Training and Information

The Libraries sponsor special training sessions to help people learn to use all the features and databases available through LUMINA. If you want more information on these classes or if you would like to have a packet of information and search tips on LUMINA sent to your office, just call 624-0303, and we will be happy to send you more information or give you a few search tips by phone.

For more information feel free to contact: Nancy Herther, Integrated Information Center, University Libraries, 7 Walter Library, East Bank, 624-2020 or by E-mail at

nherther@iic.umn.edu

This Fall the Libraries celebrated the addition of the five millionth volume to the Libraries collections. Each month about 8000 new records are added to the database.

LUMINA Quick Tips

- t= Want to know if the Libraries have gotten today's copy of the Star Tribune? Since LUMINA is also used as our ordering and check-in system, you can type in t=star tribune to see that, yes, we did get today's paper and it is already processed through our technical services department and on its way to the Periodicals department.
- c.l= I found one really good book on quality control, how can I easily check the system for related books without going to the Libraries? Easy! The general Library of Congress number for books on this subject is TS156. Just type into LUMINA CL=TS156 and you will get a listing of books in order by shelf location – just like wandering the stacks of the Libraries from your desk! Neat, quick and easy!
- k= Want to get more results from your search? Try using the "Keyword" k= search. This looks for the term anywhere in the searchable fields. For example, searching by title: t=tqm will search for this term only in the titles of the materials; searching by k=tqm will search through the title, author and subject headings for this term, resulting in more records for you to search.
- Does the Libraries have any rap music discs? You can check for yourself – just use the special format command, typing in k=rap and m.fmt. Be careful to include all the periods. You can also check for computer files (such as CD-ROMs), maps or A/V in this same way. This and other special functions are explained in the help menus on LUMINA. Give it a try!
- & more What if the material isn't on the shelf? You could check LUMINA to see if the copy has been checked out or perhaps if a second copy is available.

Ask at any reference desk in any of the Libraries for help or call 624-0303.

Accessing LUMINA from Gopher and Minuet



Computers users can access LUMINA several ways, and their options and LUMINA's "look" have changed somewhat in the last couple of years. This article concentrates on accessing LUMINA from Gopher and Minuet (reviewed elsewhere in this newsletter).

AIS and LUMINA

Administrative Information Services (AIS) enables faculty, staff, and students to use information and technology resources in ways that improve the quality and productivity of University services. The resources that AIS manages includes University budget and payroll/personnel information (Financial Reporting Database) and information on students enrolled in day school (Registration Reporting Database). AIS also maintains Pubinfo, an electronic Public Access Information Service and your gateway to LUMINA.

The current Pubinfo offerings are shown in Figure 1. Access to Pubinfo is free and is available to anyone with a modem and the appropriate software. In the lower right-hand corner of Figure 1 you'll notice the notation

Gtway: TN3270

You can access Pubinfo and LUMINA with software that emulates an IBM TN3270 terminal or a VT100 terminal. Pubinfo's "Introduction to LUMINA" menu is shown in Figure 5.

XQ: Exit Quickly

As shown in Figure 1, to return to the "main" Pubinfo menu, you type

XQ

The XQ command works for most of Pubinfo's selections.

The Libraries Section of Gopher

The University's Gopher setup, unsurprisingly, puts LUMINA in the *Libraries* section, as shown in Figure 2. You'll find LUMINA (Libraries of the University of Minnesota Integrated Network Access) in the section called *Library Catalogs via Telnet*.

More on Telnet

To access the catalogs listed in this section you must have the network software called Telnet installed on your machine.

The Central Systems (maroon.tc and gold.tc) already have it installed.

Our Microcomputer Help-Lines distribute Telnet for no charge to IBM-compatible and Macintosh users, who need their own copy of Telnet if they use SLIP. Many micro-computer users also need Telnet if they are "hardwired" with an Ethernet connection.

With Telnet you can establish a terminal session with a computer, such as the one running LUMINA, that is connected to the Internet. (For more information on Telnet, you can read *Tap into Information with Telnet and FTP* in our April 1993 newsletter.)

Internet Address

On the Internet LUMINA has been known as

lumina.lib.umn.edu

You can also reach LUMINA through this address

pubinfo.ais.umn.edu

Figure 1: LUMINA is part of AIS's Public Access Information Service

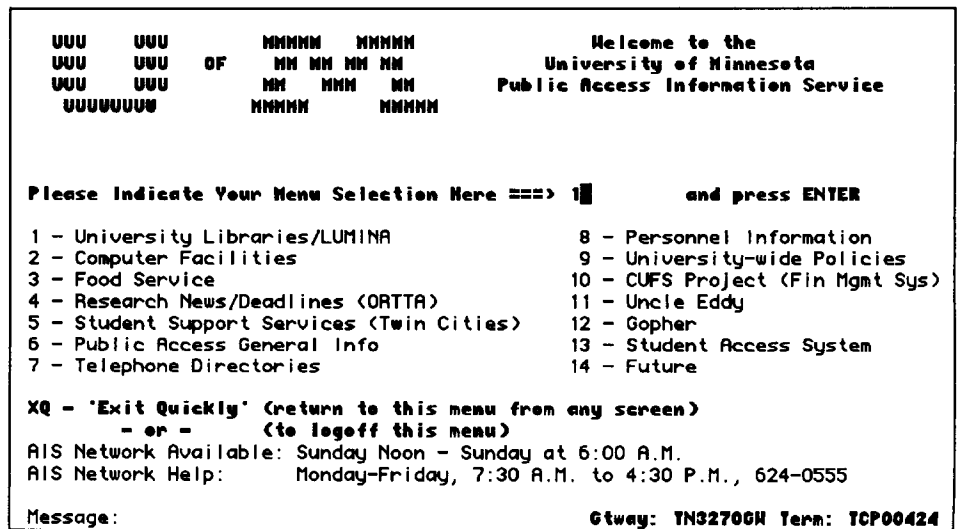
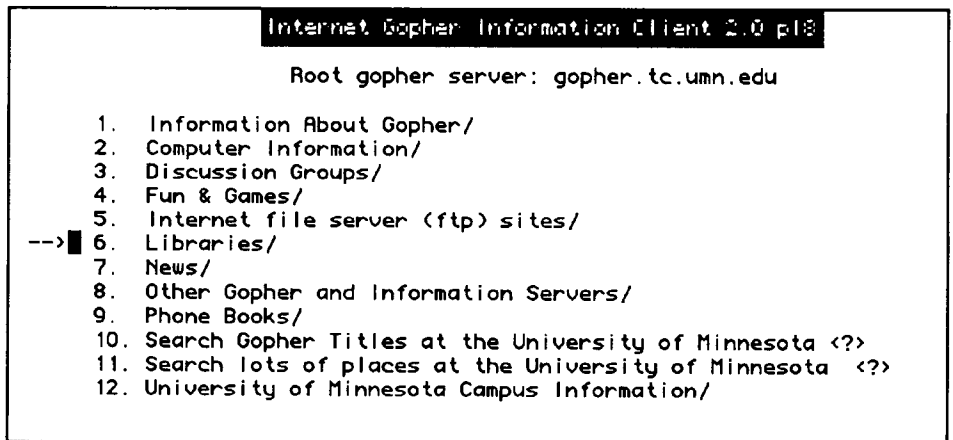


Figure 2: Select Libraries from Gopher

The "view" from the University's maroon.tc.umn.edu (and gold) systems.



Terminal IDs

When you select LUMINA from within Gopher, you will be asked to type in some information:

Please enter your terminal id; '?' for MENU;

To see a list of the terminal types (ids) that LUMINA can talk to, type a ?. Or if you are typical, you can type

56

(a VT100 terminal "id"). For most computer setups, option 56 will display (echo) what you type onto your computer screen.

The Libraries Section of "Pubinfo"

When the Pubinfo system that allows you to access LUMINA knows what kind of terminal it's talking to, it can display the options shown in Figure 1. When you select Pubinfo menu item 1, *University Libraries/LUMINA*, you are presented with the choices shown in Figure 3.

Restricted Access to Other Databases

If you select *Other Databases* from the Libraries menu (shown in Figure 3), you will be presented with the notice shown in Figure 4.

E-mail ID and Userid

Your E-mail ID is also called your "userid." It is the short, unique portion of your assigned E-mail address that precedes the @ character. Here are two examples

e-ze1234
jobob333

Figure 3: U of M Libraries Selection from Pubinfo

```

UNIVERSITY OF MINNESOTA LIBRARIES
***** L U M I N A *****

The information resource for University of Minnesota-Twin Cities Libraries

Please Indicate Your Menu Selection Here ==> 6 and press ENTER

1 - LUMINA           - University of Minnesota Libraries Catalog
2 - LUMINew         - Items added to LUMINA in the past 3 months
3 - Libraries Info  - Library Hours, Events, Exchange Rates, etc.
4 - Campus Info    - Access to Gopher, other U. Minn info. systems
5 - MEDLINE        - Index to Biomedical Journal Literature
6 - Other Databases - FIRSTSEARCH, BRS/Onsite, Current Contents, EUREKA etc
7 - Local Libraries - Catalogs of other State and Regional Libraries
8 - Other Libraries - Catalogs of "Big Ten" University Libraries

Enter XQ to "Exit Quickly" from this or any subsequent screen.

Message:                                     Gate: TN3270GH Term: TCP00424

```

Figure 4: Access to Other Databases is Restricted

```

-----
Access to FIRSTSEARCH, BRS/OnSite, LEGI-SLATE and other systems is
restricted to currently enrolled full-time day school students, and
to staff and faculty of the University of Minnesota-Twin Cities Campus.

Please enter the information below, or "XQ" to exit this menu.

U of M Campus e-mail ID ==> █
User Password ==> █

NOTE:
You must use the new campus-wide e-mail IDs and passwords (assigned Fall
Quarter, 1992) to search these databases. You can determine your ID by
selecting item 7 ("Telephone Directories") from the main "U of M" menu.
Simply search for your name and use the portion of the "e-mail" address
which precedes the "@" character. If you would like more information
please contact the E-mail Help Line at 626-7676.

Message:                                     Gateway: TN3270GH Terminal: TCP00424
Date: 10/18/93                               Time: 13:41:22
PF1/13: Help                                ENTER: Proceed                                PF12/24: Cancel

```

Figure 5: The Introduction to LUMINA Menu

```

LUMINA--U of Minnesota
Introduction

LUMINA is the online database of materials owned by or ordered for the
University of Minnesota/TC Campus Libraries UL and the Law Library LL. It
also includes the holdings of the Center for Research Libraries, Chicago ZC.

To search by:           Command:           Examples:

Author                  a=                a=wright r
Title                  t=                t=lives of the saints
Subject                 s=                s=computers
Medical Subject        sm=               sm=coronary vessels
Keyword                 k=                k=rain or snow
Call Number             For explanation, press <enter>

For an explanation of a command, enter exp and the command; e.g. exp=t
For Library news, enter news To return to the main menu, enter xq
-----
STArT over             Enter search command           <F8> FORWARD page
                        NEWS

NEXT COMMAND: █

```



PF Keys and F Keys

Although you can usually type

XQ

to exit a menu, some Pubinfo menus require different keystrokes to exit the menu, such as **F3**. Some menus also offer additional options that are available if you use PF or F keys. (Generally you can substitute F keys for PF keys and vice versa.) At the bottom of Figure 4 you can see that on-line Help is available if you use the F1 or F13 key.

Macintosh Keystrokes

If you accessed Pubinfo or LUMINA using Telnet, even if your keyboard has F keys, you will not be able to use those keys.

Use the **Esc** Key

You can, however, use the **Esc** key and the appropriate number key. Using Figure 4 as an example, to access Help you would hold down the **Esc** key and continue to hold it down while you pressed the number 1 key, that is you would use this sequence

Esc 1

Minuet Keystrokes

If you select LUMINA from Minuet's *Window* menu, you are immediately positioned at LUMINA's introduction menu, shown in Figure 5. This one-step option has one drawback. Currently, you cannot use F keys. This should not be a problem for most LUMINA users, however, because few LUMINA menus use the F keys. The F key option is more common in other Pubinfo menus.

Minuet users who use other Pubinfo menus that require F keys can follow the same

"Use the **Esc** Key"

instructions we've provided above for Macintosh users.

Expanded Backup Service

For Microcomputers, Workstations, and Servers

We'll Back You Up



Has your hard disk ever crashed? Have you spent days restoring lost data? Backing up your files and hard disk is probably the single most important task for computer users, and the one most often neglected. We can help. It's automatic, and it's easy.

Computer and Information Services' Central Systems has for many years provided automated backup and restore services on its central servers. In addition to backing up files residing on the central systems, we have incorporated a central file server using optical disk technology for low-cost storage.

Our AppleShare service uses this technology to provide low-cost file sharing for the Macintosh environment.

Mac, IBMs, UNIX

We are evaluating and installing some additional products which will expand automated backup and restore capabilities for desktop systems. These products backup Macintoshes, IBM-PCs, and UNIX Workstations.

Call 6-1661

For more information on how our automated backup service can help you, please contact Pete Bartz by phone at 626-1661 or by E-mail at pab@maroon.tc.umn.edu.

**Has your hard disk ever crashed?
Have you spent days restoring lost data?
Backing up is probably the single most
important task for computer users,
and the one most often neglected.**

Database Helps IT Track Students, Classes

What Software Services Can Do For You
 Steven Brehe and Blake Downes



UNITE, a program in the Institute of Technology (IT), is now using a customized Macintosh database, created by Computer and Information Services' (CIS) Software Services group, to track student progress.

UNITE offers televised IT courses on-site at business places in the Twin Cities and elsewhere, helping working students learn and work toward degrees while it helps businesses upgrade their employees' technical skills. But UNITE was shuffling too much paper. Staff found that tracking students, student progress, and registration manually took too long.

To automate this process, they obtained FileMaker Pro for the Macintosh and hired Software Services to create a custom database for them.

Software Services created an easy-to-use database that helps UNITE staff do everything they previously did — but faster. The staff now select a process by clicking on the correct button. (See Figure 1 for a sample screen.) The database sorts through student records in seconds and displays the requested information, including classes, class dates, sites, and more.

From this display, staff can search for a specific student, class, or other item, or compute statistics about some facet of UNITE's activities.

In designing the database, we used FileMaker Pro's capacity for color-coding data, buttons, and other elements that appear on the Macintosh screen. Assigning distinct colors to information about students, registration, and course data, make it easy for staff to locate the needed data or button on any screen.

Our programmer for this project, Blake Downes, says: "One big advantage UNITE had was that they knew exactly what they wanted. They'd been doing this manually for quite a while, so they could tell me exactly

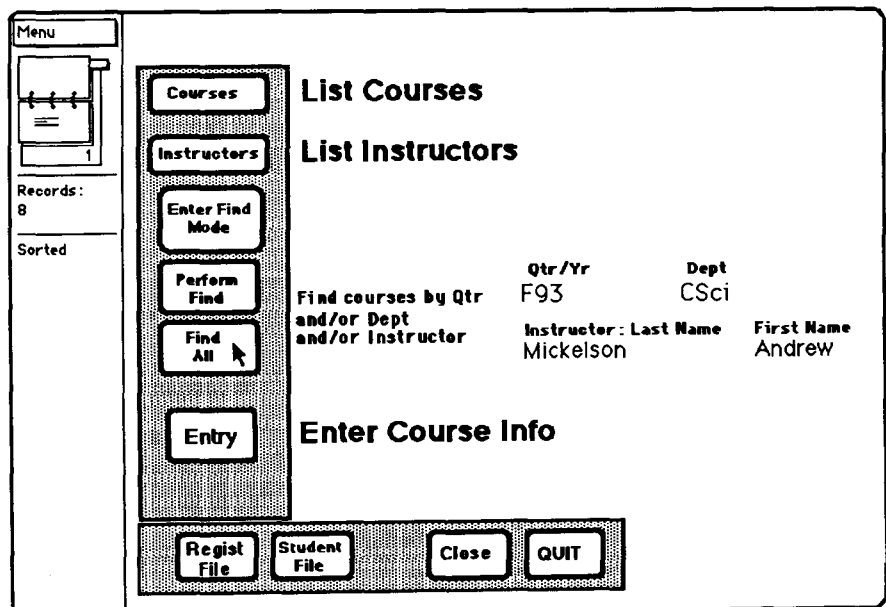
what kind of data they wanted to use and what they wanted to do with it. Getting that specific guidance from a client helped me design the database quickly."

Suzanne Brusoe, executive secretary at UNITE, says using the database has made her work much easier. "Before we got this," Brusoe says, "we were entering the same information two or more times into word processors and other software, collecting data by counting, and then computing statistics by hand. Using the FileMaker Pro program Blake created for us is a big improvement."

Call Us for Custom Programming

Software Services provides custom programming services at affordable rates for a number of microcomputer packages, including Filemaker Pro, 4th Dimension, Paradox, and Excel. For more information about these and other professional services, contact Cheryl Vollhaber, Software Services, at 625-2303 or clv@vx.cis.umn.edu.

Figure 1: Now UNITE Staff Can Click on a Button to Select a Process



Transporting SAS Data

From Micros to Central Systems and Vice Versa

PCs and Central Systems



Given the speed and convenience of today's personal computers, there is a consistent demand for converting statistical problems from mainframes (central systems) to PC systems where possible. On the other hand, sometimes statistical problems outgrow PC systems and you need to move them to central systems.

Our department has SAS on most Central Systems and SAS is available for PC/DOS, Windows, and OS/2 through a site license for University departments. First we will look at transporting data sets from the most utilized Central Systems, VX, EPX, and CMS, to SAS for personal computers and SAS for Windows. Later we will look at transporting data from a personal computer to the VX, EPX, or CMS, or between VX and EPX.

Transport to PCs

Because SAS keeps its data library for your problem in a machine-dependent binary format, you must have SAS change the library into a transportable file format.

If you start from machine VX, you need an intermediate step to delete carriage control characters that VMS inserts into the file. Next, you move the transport file to the other machine as binary, but it's no longer machine dependent, so SAS on the other machine can read it.

On the PC, the version of SAS is important. SAS on VX, EPX and CMS, SAS for Windows and SAS for OS/2 are version 6.08, while SAS for personal computers is version 6.04. You use the

```
XPORT
```

engine in version 6.08 to handle the change between data libraries and transportable files, and you use the

```
SASV5XPT
```

engine in SAS for personal computers, version 6.04. In either case, you use

```
PROC COPY
```

to do the actual transformation. If the *in* parameter is a data library and the *out* parameter is a transport file name, then PROC COPY creates a transport file from a data library. Conversely, if *in* is a transport file and *out* is a data library, then PROC COPY creates a data library from the transport file.

Now come the gory details.

Step 1: Creating a portable file on a Central System

To create a portable file on a Central System you use the XPORT engine in conjunction with PROC COPY. An example SAS file for creating this portable file on VX that we'll call `trans.dat` is shown in Figure 1.

In Figure 1 `libref` is the name of the data library you specified when you created the data set previously. The parameter `directorypathname` is the directory where your data library resides. You specify `tranfile` as the logical name of the transport file `trans.dat` that SAS will create.

The procedure for EPX is identical as above except that you replace the VMS file formats

```
' [directorypathname]' and
' [directorypathname]trans.dat' with the
Unix file formats '.' and './trans.dat' respectively.
```

For CMS, you replace `' [directorypathname]'` with the single letter `' filemode'` and you replace `' [directorypathname]trans.dat'` with `' trans dat filemode'`, where the `filemode` is the minidisk assignment for your data file or data library.

Figure 1: trans.dat, a Sample Portable File

```
libname libref ' [directorypathname]' ;
libname tranfile xport ' [directorypathname]trans.dat' ;

proc copy in=libref out=tranfile memtype=data;
run;
```

Step 1a: (VMS only)**Removing extra carriage control characters**

Transport files created on VX contain extra carriage control characters that you need to remove if you wish to transport the file anywhere besides another VMS operating system. To eliminate these carriage control characters, issue the following VMS command after the \$ prompt

```
analyze/rms_file/fdl trans.dat
```

where `trans.dat` is the transport file created in Step 1. This creates a File Definition Language (FDL) file called `trans.fdl`. Edit the `trans.fdl` file by issuing the following VMS command:

```
edit/fdl trans.fdl
```

This command invokes a menu beginning with a prompt for a keyword. Type `MODIFY`. For Existing Primary Attribute, type `RECORD`. For Record Attribute, type `CARRIAGE`. For Secondary type `NONE`. To leave this menu press *Enter* once, then type `EXIT`.

Type the VMS command shown below to create a new file `trans.new` with the correct attributes.

```
convert/fdl=trans.fdl trans.dat trans.new
```

Step 2: Transporting the file to the PC

Regardless of the method of file transfer, be sure the file `trans.dat` (or `trans.new` for VMS) is transferred in *binary* format. By default, the KERMIT transfer protocol uses binary format. If FTP (File Transfer Protocol) is used, simply type `binary` after entering FTP.

Step 3a: Reading transport files on SAS for Personal Computers v.6.04

See Figure 2. The procedure used for reading in a transport file is the mirror image of that used for creating the transport file, except that the SASV5XPT engine needs to be used because SAS for personal computers is currently

version 6.04. If SAS for personal computers is ever upgraded to version 6.06 or later, the XPORT engine should be used.

Note that you should use `trans.new` instead of `trans.dat` if the file came from VMS. Of course you can change directories for the locations of your libraries and files on the PC.

Step 3b: Reading transport files on SAS for Windows v.6.08

See Figure 3. The procedure used for reading in a transport file is the mirror image of that used for creating the transport file. The XPORT engine can be used with the Windows version.

Note that you should use `trans.new` instead of `trans.dat` if the file came from VMS. Again, you can change directories for the locations of your libraries and files on the PC.

Transport to Central Systems

The procedures listed above can be reversed to move data files from a personal computer to a Central System by switching the references to 'in=' and 'out=' in the PROC COPY statements.

The extra carriage controls *do not* need to be put back in if you move a data file from the PC to VMS.

Data sets can also be moved between VX and EPX using the same procedures. Step 1a needs to be included if you want to move data files from VX to EPX, but Step 1a does not need to be included if the original data resides on EPX.

Help: 626-5592

If you have any questions about transporting SAS data, please contact our Statistics Help Line at 626-5592.

Figure 2: SAS for PCs

<pre>libname libref 'c:\sas'; libname tranfile sasv5xpt 'c:\sas\trans.dat'; proc copy in=tranfile out=libref memtype=data; run;</pre>	<pre>libname libref 'c:\sas'; libname tranfile xport 'c:\sas\trans.dat'; proc copy in=tranfile out=libref memtype=data; run;</pre>
--	---

Figure 3: SAS for Windows

Central System News

▼ Minitab Version 9.1 on VMS



We recently upgraded Minitab on VMS (VX and VZ machines) from version 7.2 to 9.1. The new version is completely upwardly compatible with the old one (except for one slight change described later). The command to use it is still one of the two listed below

```
minitab
minitab inputfile outputfile
```

(You type both commands after the \$ system prompt.)
Worksheets saved under version 7 are compatible with version 9.

The Major Changes

This article describes the major changes in Minitab. For an overview of all changes, type

```
news
```

at the Minitab

```
MTB >
```

prompt. Note that our version of Minitab 9.1 is the standard one, not the enhanced one which contains professional graphics and statistical quality control software.

Worksheet Change Protection

When you use the *STOP*, *RESTART*, or *RETRIEVE* commands, if you've changed the data in your worksheet but haven't saved it yet, Minitab will prompt you with the message shown in Figure 1.

This gives you another chance to save the changes if you type N. If you type Y or just return, the changes aren't saved.

Slight Change in JOURNAL and OUTFILE

The syntax of these commands remains the same. They specify the external file where the command journal or output outfile is to be written.

For earlier versions, if an existing file was given, Minitab created a new file with the same name but with an incremented version number. In version 9.1, *JOURNAL* and *OUTFILE* append output to existing files. You can still create new versions of a file by explicitly assigning a version number on the command line. The other output commands besides *JOURNAL* and *OUTFILE* produce new files with new version numbers as they always have.

New Statistics Procedures

FACTOR performs principal-component and maximum-likelihood factor analysis. You can select from four rotation methods: varimax, equamax, quartimax, and orthomax.

RREG is an experimental release command, subject to change in future releases. It is a procedure for robust regression based on ranks.

NEST is another experimental release command. It analyzes nested, unbalanced ANOVA designs.

New Subcommands

MANOVA is a subcommand for either the *ANOVA* or *GLM* commands. It allows these two procedures to perform multivariate analyses.

TUKEY, *FISHER*, *DUNNET*, and *MCB* are multiple comparison procedures for the *ONEWAY* command.

New Macro Language

Users can save files of Minitab commands and then run them using the *EXECUTE* command from within Minitab. The new Minitab macro commands are an extended form of this feature. They include looping structures, Boolean logic operators, and more. The macro commands cannot

Figure 1: A Minitab Prompt

```
Worksheet changes have not been saved. Stop anyway (Y/N)?
```

be used from within Minitab but instead must be written into a text file with a text editor. The file can include both macro and other Minitab commands. You then call the macro file from within Minitab by using the command

```
%filename
```

where *filename* is the name of the file where the macro is stored.

Student Data Sets

The data sets from *The Student Edition of MINITAB*, Release 8 published by Addison Wesley Publishing Company, Inc. have been placed on a disk called *STUDENT*. The data sets are in these directories:

```
[DATA], [EXPLORE], [GETSTART], [TUT1],
[TUT2], ..., [TUT14].
```

As an example, to see what files are in directory [TUT3], at the \$ prompt use the VMS command

```
DIRECTORY STUDENT:[TUT3]
```

or equivalently from within Minitab using its SYSTEM command (after the MTB > prompt)

```
system directory student:[tut3]
```

The files are *FISH.MTW*, *GRADES.MTW*, *KRUNCHY.MTW* and *PAYT3.MTW*. Here's a short example to show how to access the file *FISH.MTW* and get a summary of its contents from Minitab:

```
$ minitab
MTB > retrieve 'student:[tut3]fish'
MTB > info
```

Note that the *RETRIEVE* command uses *.MTW* by default.

Minitab Handbook Data Sets

When you run Minitab, the program defines a VMS logical name

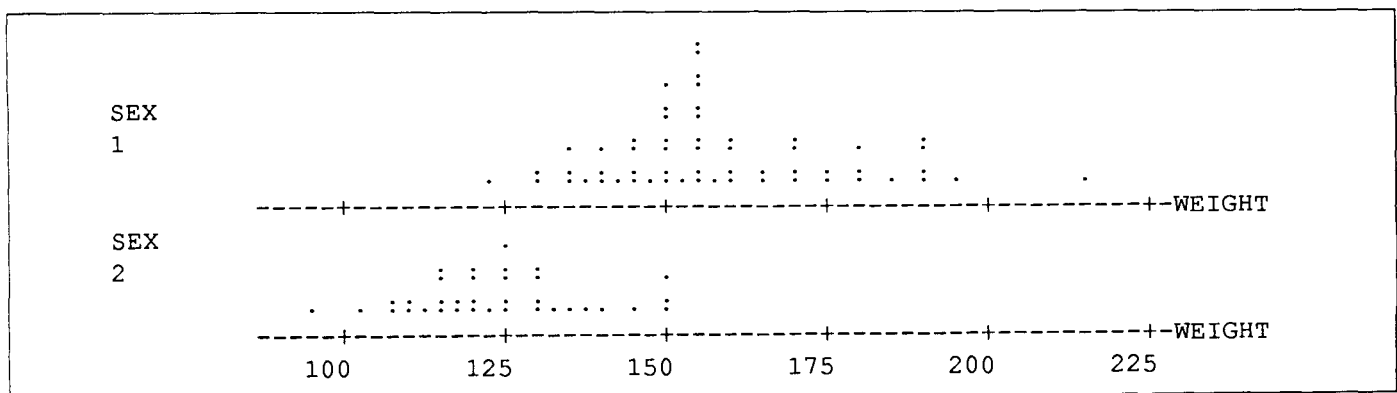
```
MTB_DIR
```

You can use this logical name to access 31 data sets from the *Minitab Handbook*. Some of these are used in examples that appear in the *Minitab Reference Manual*. This example lists the names of the data sets, retrieves the *PULSE.MTW* data set and creates a dot plot of two variables.

```
MTB > system directory mtb_dir:*.mtw
MTB > retrieve 'mtb_dir:pulse'
MTB > dotplot 'weight';
SUBC> by 'sex'.
```

The output from the *DOTPLOT* command is shown in Figure 2.

Figure 2: Minitab Output from Sample DOTPLOT Command



Help and Documentation

The VMS command

```
HELP MINITAB
```

tells you how to start an interactive Minitab session. Minitab has an internal HELP command that tells you how to get further on-line information about Minitab commands, subcommands and topics.

If you need assistance in using Minitab, contact our Central System Help Line at 626-5592 or send E-mail to

```
consult@vx.cis.umn.edu
```

The main documentation for Minitab is the *MINITAB Reference Manual, 1992*. Also available are the *MINITAB Quick Reference, 1992*, a command and syntax summary on a card, and the *MINITAB Mini-Manual, 1992*. Related documentation includes the *Companion Text Book List, 1992*, which is a bibliography of textbooks and supplements that include Minitab information, and the *MINITAB Handbook, Second Edition, 1985* (Wadsworth Publishing, 800-343-2204).

To order documentation, contact:

Minitab, Inc.
3081 Enterprise Drive
State College, PA 16801-3008
Phone: 800-448-3555
Fax: 814-238-4383

Old Version Available Until December

If you need the old version 7.2 of Minitab for any reason, use

```
SELECT MINITAB72
```

to access it. This old version will be removed in late December.

Acknowledgement

This article includes information from articles that appeared in the University of Texas Computation Center Newsletter and the St. Cloud State University Academic Computer Services Data Letter.

▼ IMSL Version 2.0 on VX

We recently upgraded IMSL (International Mathematics and Statistics Library) on our VAX/VMS machine VX to version 2.0. There are about 1000 routines in the library and they cover a large number of areas in mathematics and statistics.

Note: IMSL, Inc. and the graphics company Precision Visuals merged last January into a new company called Visual Numerics.

Improvements

Version 2.0 contains about 160 new routines covering a wide range of applications. Visual Numerics has made significant enhancements to both efficiency and accuracy for a number of routines particularly in the areas of Linear Systems, Eigensystem Analysis, FFT's and Random Number Generators. They've improved documentation for clarity, added examples and graphics, and fully typeset the manuals. They've also corrected errors in both code and documentation.

Compatibility

In most cases, the new release is compatible with the previous version so your current applications programs will run without changes. However, three routines that have name conflicts with routines in other packages have been renamed. They are:

- PGOPT replaces PAGE
- CPSEC replaces CTIME
- TIMDY replaces DTIME

Access and DOUBLE PRECISION

IMSL version 2.0 on the VAX VX is an all-double-precision /G_FLOATING Fortran 77 version, combining IMSL's mathematics, statistics and special functions into a single user library. You can access it with the command:

```
$ LIBS IMSL2
```

You normally only need to use the *LIBS* command once for each login. Note that you must declare all floating point variables to be used with IMSL2 routines as *DOUBLE PRECISION* or *REAL*8*, and declare all complex variables as *DOUBLE PRECISION COMPLEX* or *COMPLEX*16*.

Also, you must use the /G_FLOATING parameter on the VMS FORTRAN command; it can be abbreviated to /G.

Sample IMSL2 Problem

Figure 3 is a sample problem taken from the IMSL documentation that solves a system of three linear equations. The coefficient matrix has real general form and the right-hand-side vector b has three elements. The VMS commands to run the problem shown in Figure 3 are:

```
$ LIBS IMSL2
$ FORTRAN /G SAM
$ LINK SAM
$ RUN SAM
```

The output from this run is:

```

          X
      1      2      3
1.0          1.5      1.0
```

Printed Documentation

The full printed documentation for IMSL is three volumes in soft cover (\$75) or seven volumes in 3-ring binders (\$210). Visual Numerics gives a 40% educational discount but adds 15% of the net total for shipping. Orders must be prepaid. You can order IMSL documentation from:

Visual Numerics
Customer Services, Attn. Irma Rosenfield
P. O. Box 4605
Houston, TX 77210-4605
Telephone: 713/784-3131
Fax: 713/781-9260

Copies of the soft cover IMSL manuals are on reserve in the Computing Information Center, 1 Nicholson hall, 625-5082. Photocopies of the 17-page vendor-supplied document "IMSL Libraries Version 2.0 Highlights" are available upon request. It describes changes from version 1.0 to 2.0.

On-Line Documentation: IMSL_IDF

Corresponding to IMSL version 2.0, we updated the IMSL Interactive Documentation Facility (IDF). It's designed to help you find the IMSL routines you need and to help you

Figure 3: Sample from IMSL Documentation

```
C This is file SAM.FOR
C
C          Declare variables
C          PARAMETER      (IPATH=1, LDA=3, N=3)
C          DOUBLE PRECISION A(LDA, LDA), B(N), X(N)
C
C          Set values for A and B
C          DATA A/  33.0, -24.0,  18.0,
C          *        -24.0, -10.0, -11.0,
C          *         18.0, -11.0,   7.0/
C
C          DATA B/ 129.0, -96.0,   8.5/
C
C          Solve the equations
C          CALL DLSLRG (N, A, LDA, B, IPATH, X)
C
C          Print results
C          CALL DWRRRN ( 'X', 1, N, X, 1, 0)
C          END
```

use them. It provides a description of parameters, example programs and their outputs, and other information. It also has a built-in help facility to show you how to use IDF. You start up the IMSL Interactive Documentation Facility by typing the VMS command:

```
$ IMSL_IDF
```

There's a separate VMS help file for IMSL_IDF that has about three pages of text, including some local information that goes beyond IMSL's documentation. To go through it, type the VMS command

```
$ MOREHELP LIBRARIES IMSL_IDF
```

Old Version Available Until March

IMSL's previous version is known as IMSL10. Visual Numerics revised the numbering so that IMSL10 is really IMSL 1.0. This version can still be accessed by the VMS command:

```
$ LIBS IMSL10
```

However, we will be removing this library in March so that only version 2.0 will be available after that. You should plan on using IMSL2 as soon as possible. As noted, your programs will probably work without any changes.

Help

If you need assistance with IMSL2, please contact Michael Frisch, MJFRISCH@VX.CIS.UMN.EDU, 625-5830.



Book Center News: 625-3854



The offers listed here are made to University departments, employees, and students, and are subject to the eligibility rules of the Computer Discount Program. The Computer Desk in Williamson Hall is open Monday-Friday from 8:30 am to 5:30 pm during the Fall, Winter, and Spring quarters and for reduced hours at other times.

For more complete descriptions of the hardware products listed here or of those available through the discount program, consult our handouts. Paper handouts are available at all Microcomputer HelpLines. Electronic versions are available on Gopher. Our current handouts cover IBM, ZEOS, HP, and Macintosh computers as well as printers, modems, and other peripherals for those machines. Some specialized handouts, such as Network Connections, are also available.

▼ 24-Hours-A-Day-Service

Anyone with access to Gopher can search the Computer Desk's database to find out part numbers, prices, and product availability. Here is where to look for the Gopher "Electronic Ordering" option:

- Computer Information
- Microcomputer Prices
- Minnesota BookCenter...Electronic Ordering

You can charge your purchases on your MasterCard, Visa, and Discover accounts. You can even copy the *Order Form* you'll find on Gopher to fax or E-mail an order. To expedite this process, be sure to completely fill out the order form. Individuals must add 7% sales tax to all prices listed here, in our handouts, or on Gopher. University departments do not have to pay sales tax.

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You can get product and price change bulletins for the products sold through the Computer Desk via E-mail. Once you are on the *Bookstore prices* mailing list, you will receive notification via E-mail as soon as we have new prices or products. To be added to the mailing list, E-mail a request to:

request@boombox.micro.umn.edu

▼ Hewlett-Packard News

LaserJet Prices

If you purchase a LaserJet 4ML, 4M, or 4SiMX between October 1, 1993 and December 31, 1993 you can get a \$100 rebate. Details at Book Center.

We dropped our price on the LaserJet 4L to \$635.

Part	LaserJet	Rebate	Normal Discount Price
C2003	4L	N	\$ 635
C2015A	4ML	Y	945
C2021A	4M	Y	1722
C2011A	4SiMX	Y	3977

Personal Computers

Recently HP's personal computers were added to the computer hardware you can purchase through the University's Computer Discount Program.

For complete information you can pick up our Hewlett-Packard Personal computer handout at any Microcomputer HelpLine, get an electronic version from the *Microcomputer Prices* section of Gopher, or search the "Electronic Ordering" section of Gopher for a keyword, such as *Vectra*, to learn the prices and delivery status of equipment.

Vectras

The Vectras are desktop computers. The 25VL and 33VL configurations come with one 1.44MB 3.5-inch floppy drive, a keyboard, a mouse, MS-DOS 6.0 (preinstalled), Windows 3.1 (preinstalled), a local bus VGA, 512K DRAM video memory (expandable to 1MB), and a 100v-240v over 47-63Hz power supply. Both Vectra's also include the following I/O ports: parallel, 2 serial, mini-DIN keyboard, mouse, and VESA connector for VGA passthrough.

OmniBook 300

The OmniBook is a 2.98 pound subnotebook computer that measures 6.4 x 11.1 x 1.4 inches; it does not come with a floppy drive. The keyboard has a built-in pop-up mouse and 85 keys. The OmniBook's VGA monochrome LCD display measures 9-inches diagonally and displays 16 shades of gray at 640 x 480 dots.

Table 1: HP Personal Computers

Model	Processor	Price	Memory Standard/Max	Hard Disk (MB)	Expansion Slots
Vectra 25VL	486SX 25MHz	varies	4/32	varies	4 16-bit full-length ISA
o D3021A	"	\$ 949	"	120	"
o D3022A	"	\$ 1045	"	240	"
Vectra 33VL	486DX 33MHz	varies	4/32	varies	4 16-bit full-length ISA
o D3026A	"	\$ 1435	"	240	"
OmniBook 300	386SXLV	-	2/4	-	1 PCMCIA Type II, Ver 2.0
o D3026A	"	\$ 1536	"	40	"

The OmniBook comes with the following preinstalled software: MS-DOS 5.0, Word for Windows, Excel, LapLink Remote Access, Phone Book, Appointment Book, and HP Financial Calculator. It also comes with Windows 3.1, although this is not the full version of Windows.

OmniBook Power Supply

- 4.8VDC rechargeable battery pack with nickel-metal-hydrive cells
- battery life up to 5 hours
- AC adapter, 100-240Vac input, 12Vdc output

▼ Compatibility Alerts

Apple Express Modem

The PowerBook Express modem works with the PowerBooks 165, 165c, 180, and 180c. To use the modem with the PowerBook 165, you must use system enable version 1.0.3. The Express modem does not work with the 145b and 145.

Mac IIsi and Basic Color Monitor

The Apple Basic Color Monitor does *not* work with the IIsi's built-in video. To use this monitor with a IIsi you must use the 8.24 display card.

Acting Director for University Network Services

Don Riley, Professor

Associate Vice President and Associate Provost Academic Affairs

I am pleased to be able to announce that Dr. Larry Dunn has accepted my offer to become Acting Director, University Network Services effective September 16, 1993.

I have appreciated the efforts and commitment of Lawrence Liddiard, who has served as Acting Director for the last couple of years. I have appreciated his contributions, as well as those of all of the University Network Services staff. I look forward to Lawrence continuing activities on behalf of network planning, but also to be

more actively involved in supporting overall planning efforts in my office in academic computing and information technologies.

In the near term, we will be refining the mission and objectives of Networking Services and working with other campus groups to develop a plan for meeting the expanding and changing campus network needs.

Help: Computer and Information Services

▷ Distributed Services and Planning

Phone

Help Line Hours

Computer Services Information

625-1555

anytime

If you do not know which computer service number to call, dial the Computer Services Information Line.

Central Systems

These systems require a user name and password, which you get when you open an account.

Qualified users can apply for grants to cover some computing-related costs.

- EPX (UNIX), NVE (NOS/VE), UZ (Ultrix), VX and VZ (VMS) 626-5592 Monday-Friday 9 am to 4 pm
1 Nicholson Hall Walk-in Consulting Monday-Friday 10 am to 4 pm
- VM1 (IBM/CMS), 99B Coffey Hall Walk-in Consulting 624-6235 Monday-Friday 9 am to 4 pm
- MEDLINE (MinnesotaMEDLINE on NVE) 626-8366 Monday-Friday 9 am to 4 pm

Microcomputers and Workstations

Software, hardware, peripherals, local area networks 626-4276 Monday-Friday 9 am to 4 pm

- East Bank 152 Shepherd Labs above above
- West Bank 93 Blegen above Monday-Friday 1 pm to 4 pm
- St. Paul 99B Coffey Hall above Monday-Friday 1 pm to 4 pm

E-mail, Statistics, and LUMINA

- E-mail: call for help using your University account 626-7676 Monday-Friday 9 am to 10 pm
Walk-in help available in most campus Computer Facilities.
- Statistics: Microcomputer and Central Systems 626-5592 Monday-Friday 9 am to 4 pm
- LUMINA: call if you have trouble connecting 626-2272 Monday-Friday 9 am to 4 pm

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Associate Vice President and

Associate Provost Academic Affairs

Donald R. Riley, Professor 626-9816

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- Engineering Services Don Clark
- Networking Services Larry Dunn
- Software Services and Operations Lee Croatt
- St. Paul Services Mel Sauve
- Central System Accounts, IBM CMS 624-7788
- EPX, NVE (includes MEDLINE), UZ, VX, VZ 6-8366
- Disability and Computing Services, voice 6-0365
- TDD 6-0569
- Equipment Repair and Warranties (Engr. Serv.) 5-1595
- Faculty Resource Center (to make an appointment) ... 5-1300
- Kodak Printer Service 6-1661
- Network Addresses (130 Lind) 5-8888
- Public Computer Facilities (obtaining access) 5-1300
- Software Services (includes contract programming) ... 5-2303
- Data Entry, Minneapolis 6-8351
- Data Entry, St. Paul 4-7297
- Gopher Setup 5-2303
- Statistics 5-2303 or 4-0758
- Tape Librarians (Central Systems)
- EPX, NVE, UZ, VX, VZ (Lauderdale Comp. Facility) .. 6-1838
- VM1 (IBM/CMS in St. Paul) 4-3482
- Training, Course Registration (190 Sheplab) 5-1300


Other Departments


- Computer Desk, Williamson Hall Book Center 625-3854
(also Gopher's Microcomputer Prices/Electronic Ordering)
- AIS (Admin. Info. Services) Customer Assistance 4-0555
- Supercomputer Center Help (3030 SCC) 6-0808
- Telecommunications, Networking Services
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- Repair 5-0006



Access Information


SLIP: 2400/9600 626-1920



SLIP: ADI-100 and ITE (with MKO) 3-0291



-  Terminal settings for these systems are 8-1-N (8 data bits, 1 stop bit, no parity) unless otherwise noted. The number you dial may depend on the modem's bps or baud rate.
- ▷ Dial-in Server: 626-0300, -1200, -2400, -9600
- At 9600 Telecomm supports V.32 and MNP level 5 error correction.
- On campus ADI-100 and ITE setups use 626-2400.




 Internet addresses.



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LUMINA.LIB.UMN.EDU 





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300/1200/2400 at 7-1-even 626-1630 
EPX or UZ or VX or VZ or NVE.CIS.UMN.EDU 

EPX, NVE (includes MEDLINE)
300/1200/2400 625-1445 
up to 19.2 campus data phone 3-2400 

VM1 (IBM/CMS) at 7-1-even
1200/2400 624-4220 
9600 624-3668 
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- POPmail users can receive notices about updates and upgrades by sending E-mail to: popmail-news-request@boombox.micro.umn.edu

Computer and Information Services Newsletter

University of Minnesota
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Computer and Information Services

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