UNIVERSITY OF MINNESOTA

Computer and Information Services Newsletter

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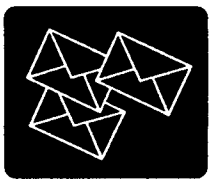
Campus-wide Electronic Mail Project



Don Riley, Acting Associate Provost

We are currently implementing a comprehensive campus-wide service which will provide all Twin Cities campus students, faculty, and staff with free access to electronic mail (E-mail) and Internet (national network) resources. This is a collaborative project involving active participation by several university units: Computer and Information Services, Administrative Information Services, Human Resources, Minnesota Book Center, Registrar's Office, Student Affairs, Student Judicial Affairs, Student Support Services, Telecommunications Services, University Attorney, and University Relations.

Although many faculty, staff, and graduate students have used E-mail programs (such as POPmail and various central systems mail) for some time, this project will provide E-mail access to all students, staff, and faculty from a centrally managed framework, along with increased services and capabilities.

Objective and Goals

The overall objective of this project is to establish a reliable leading edge E-mail system that: provides a well designed, comprehensive central framework for electronic communications; incorporates existing diverse mail systems; is based on emerging technological standards; and provides support for evolving needs for integrated fax and multimedia capabilities.

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We have three major goals for this project:

1. Enhance student, faculty, and staff communication.

2. Improve access to information resources (libraries, news services, databases) at the university and across the Internet from home or office.

3. Increase effectiveness of campus communications while reducing paper flow and costs.

Timelines

By the end of 1992 we will have established accounts for the Twin Cities campuses.

September 15
Establish accounts for all entering freshmen by September 15 and provide training during orientation.

October 15
All students will have accounts by October 15. Training classes will be offered throughout the year.

November 15
All faculty and academic staff will have accounts by November 15. Training classes will be offered throughout the year.

Fall Quarter
Throughout Fall quarter other students, staff, and faculty will be added to the system, after they complete training sessions.

Benefits to the University Community

This plan provides E-mail access, including access to news services, bulletin boards, and the Gopher information system, to all students, staff, and faculty. The general student population can access E-mail for the first time, using either their own microcomputers or the campus Public Computing Facilities. Faculty and staff can continue to access the mail hub network using the E-mail program they currently use and prefer. All will benefit from a broader range of services and capabilities and can use a directory to exchange mail with other students, faculty, and staff worldwide without needing to know specific addresses.

A continuous backup system will ensure reliable service 24 hours a day, 365 days a year.

Training and Support

After completing an E-mail orientation and training session, most new student will use POPmail from Macintoshes and IBMs. POPmail is an easy to use system designed to get new users up and running quickly.

Faculty and staff may choose whatever system they prefer. Many may wish to use the E-mail program resident on a departmental or central system which they use for their research.

Thus, although the number of campus E-mail users will expand dramatically, we anticipate that existing staff will be able to support the increasing numbers of users, since the system incorporates E-mail systems currently in use. We strongly encourage new E-mail users to attend the orientation and training sessions scheduled throughout Fall quarter. These sessions will provide an overview of available electronic resources and provide instructions on various E-mail capabilities.

How it Works

The new E-mail system transparently supports our existing mail systems without requiring users to purchase any special hardware or software. The system directly interconnects the existing mailers by serving as a generalized gateway, relay, and message translator. Mail received from any of the proprietary systems listed below is translated by the system to one of two standard formats: RFC822 (the Internet standard format for electronic mail), or X.400 (the ISO/OSI standard format). Conversely, mail sent to a proprietary system is translated from one of the two standard formats to the native format expected by the destination system. In addition, a gateway translates mail between the two standard formats. The system supports the University-developed POPmail for electronic mail access and Gopher for electronic information access across the Internet.

Note: A PROFs gateway is currently being beta-tested and will be ready soon for users to evaluate. Gateways for all other systems are fully operational.

Many Interfaces Supported

The system supports a wide array of compatible user interfaces, including network-connected workstations, X Window System terminals, conventional video terminals, and older line-mode terminals. The system has been specifically designed to interwork with all conventional UNIX E-mail user interfaces (sendmail, mail, Mail, mailx,

rmail, elm, MH, and xmh). The interfaces can be used interchangeably, supporting X.400 systems as well as conventional text-based mail.

Industry Standard Message Handling

The mail delivery system is based on the X.400 Message Handling Services standard which supports features such as multipart, multimedia mail. This allows users to construct and send mail messages with multiple parts including text, fax, teletex, videotex, voice, and general binary. The X.400 standard is also required for connectivity with ISO/OSI-based electronic mail networks such as those offered by commercial carriers (e.g. AT&T, MCI, and European PTTs), as well as for providing integrated support for the system's X.500 directory service. The X.400 gateway translates multipart/multimedia messages to the new Internet MIME format.

Extensive Directory Service

Use of a comprehensive directory system based on the X.500 Directory Services standard is essential to ensure compatibility with other sites worldwide. The directory service resolves mail aliases, expands distribution lists, looks up general information (including electronic addresses) of recipients worldwide, and facilitates the management of electronic mail configurations. One of the more interesting aspects of the X.500 interface is its ability to look up and display digitized photographs.

Leading Edge Technology

Incorporating leading edge technology is a requirement for remaining viable well into the future. This system provides integrated support for fax and multimedia capabilities, so that users can send and receive faxes from all hosts in a network, including UNIX, IBM, DEC, and LAN-based personal computers. The fax capabilities provide Group III Facsimile gateway service, allowing users to send mail messages containing plain text, PostScript, and various digital image formats. It converts these to fax format, automatically dials the phone number of the destination fax machine, generates a cover sheet, and transmits the generated image. The system also supports access controls and deferred delivery, to restrict access to long distance phone numbers or automatically hold outbound faxes until evening when rates are cheaper; these restrictions can be applied to individuals as well as whole organizations.

The Hardware

The system is based upon hardware and software purchased from Control Data Systems. The hardware configuration consists of two Control Data 4000-series MIPS UNIX-based computers and a Control Data Disk Array Subsystem with Parity Protection constant backup protection. An important feature of the system is the "hot start" backup configuration of the processors, under which either processor can take over the duties of the other should one fail. This should result in highly reliable, fault-tolerant service for the University. The software is Control Data's Mailhub which is based on emerging industry standards for electronic message handling and directory services.

Easy, Centrally Managed Framework

The system features a well designed and centrally administered framework, rather than a patchwork approach, with state-of-the-art directory maintenance, security, and validation capabilities. The message handling, fax, and sendmail applications obtain their configuration, routing, and mapping information from the X.500 directory, permitting an entire network of hosts to be configured and managed from a central location. The entire network can be managed from a single host on which X.500 directory services have been installed.

With the design flexibility necessary to easily accommodate expansion and the integration of multiple networks, this system protects the University's current investments while supporting emerging technological standards. For example, the capability to support direct FDDI connections is already available.

Summary

We are committed to providing improved services to meet the ever-evolving needs of our diverse campus. This E-mail service should result in greatly improved communications and access to the information resources of the university. The use of this commercially-available leading edge mail system reduces the staff time needed for creating, testing, and maintaining a new highly customized local system. Managing the system will be greatly simplified and enhanced through use of the flexible centralized mail hub.

We are excited about the possibilities and capabilities of this new system and look forward to providing our users with more support and better service.

Meeting Maker

Meeting Maker is a Macintosh desk accessory that allows you to maintain a personal calendar, plan and schedule meetings, and reserve meeting resources, such as projectors or meeting rooms. This is a review of version 1.5. Since scheduling meetings and office resources can affect your co-workers, Meeting Maker is usually used over a network. Meeting Maker users on a network can plan and schedule meetings interactively with colleagues, whether they're in a different room or a different building.

The Meeting Maker menu contains the commands you need to schedule meetings and resources and to manage your calendar. As shown in Figure 1, you can create meeting proposals and activities, print your calendar, and assign preferences. You can even color code meetings and activities on your calendar.

Logging in

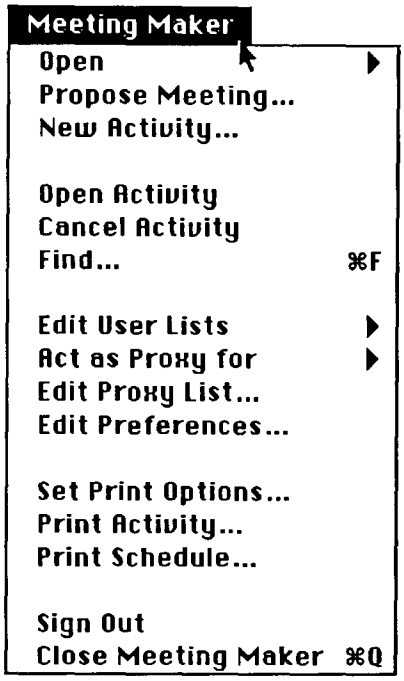
Once you enter your username and password in Meeting Maker's sign-in dialog box, your calendar appears. You can close the calendar window but remain logged onto the Meeting Maker server. As long as you're logged onto the server, you will receive notifications about upcoming meetings. If you want to leave Meeting Maker altogether, use the *Sign Out* command. When you're signed out, you don't get notifications about upcoming meetings.

Scheduling a Meeting

You can schedule meetings with other Meeting Maker users. To schedule a meeting you select *Propose Meeting* from the *Meeting Maker* menu. You use the *Meeting Proposal* window, shown in Figure 2, to give the meeting a title and location, select the guests, schedule a date and time, and outline your agenda. Once the proposal is ready, click on the *Send Proposal* button.

When your guests receive the meeting proposal, they can review it, add comments, and send it back to you. As responses from your guests arrive, you will be able to access the Meeting Proposal window again to modify the proposal.

Figure 1: Meeting Maker Menu



Customize

Below we'll discuss some options for customizing your meeting proposal.

Automatically Select a Time

Meeting Maker can peruse other Meeting Maker calendars and automatically select the earliest time that fits your schedule and your guests' schedules.

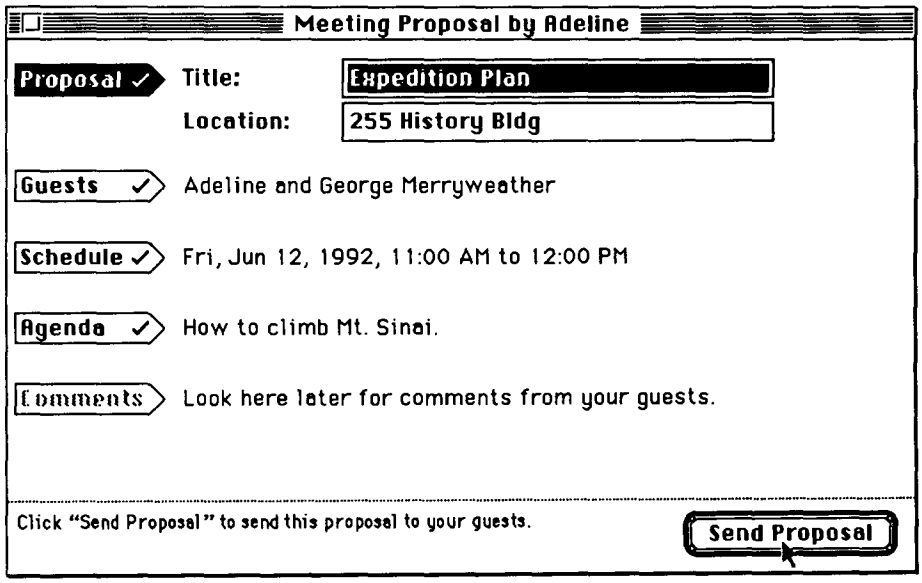
Required Attendance

Guests attendance can be designated as required or optional. Without at least one required guest, the meeting cannot take place.

Recurring Meetings

Meeting Maker offers several options for scheduling a meeting that occurs more than once. The options in the *Frequency* menu shown in Figure 3

Figure 2: Scheduling a Meeting

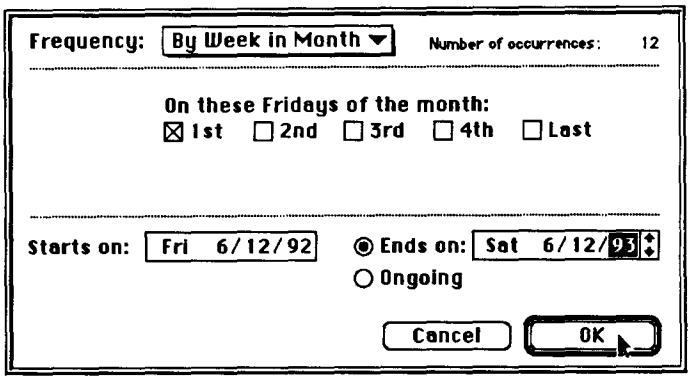


include choices for meetings that are ongoing or have a fixed ending date.

Creating Groups
If you have guests that meet regularly, you can create a list of guests called a group. Then, to invite the guests, use the group name instead of individual names.

Agenda
Agendas can be up to 16 pages long. You can type the agenda into Meeting Maker or copy and paste text from another file into the agenda window. To include a document in your meeting proposal, click on the *Attach* button.

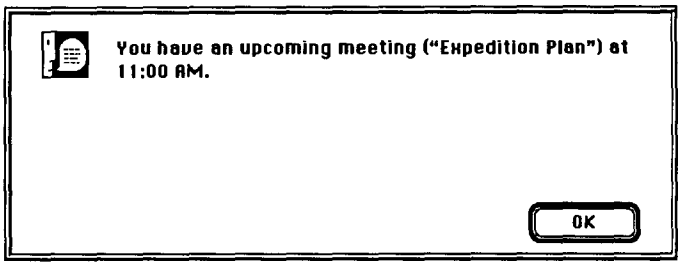
Figure 3: Recurring Meetings



Meeting Notifications

When you receive information about a meeting, such as a cancellation, Meeting Maker will notify you that a message has arrived. You can choose how you are notified. Meeting Maker can beep, flash an icon in the menu bar, or alert you with a dialog box. Messages that require a response, such as a meeting proposal, will appear in a Message Window, as shown in Figure 4.

Figure 4: A Message Window



The Message Window

The Message Window allows you to relay messages back and forth. You can work with four kinds of messages: Active Messages, Your Proposals, Your Refusals, and Carbon Copies.

Active Messages are either meeting proposals or updated information about scheduled meetings; a symbol to the left of the message indicates the type of message it is. *Your Proposals* contain a list of meetings you proposed that are still pending; symbols also indicate the status of your proposal. Figure 5 shows various symbols. The ✓ symbol means all required guests have accepted your invitation; all the symbols are discussed in the Meeting Maker manual. These symbols will appear on your calendar as well.

To view a message, double click on it. To ensure that you don't miss a messages, you will be prompted to read any unread messages the next time you start Meeting Maker.

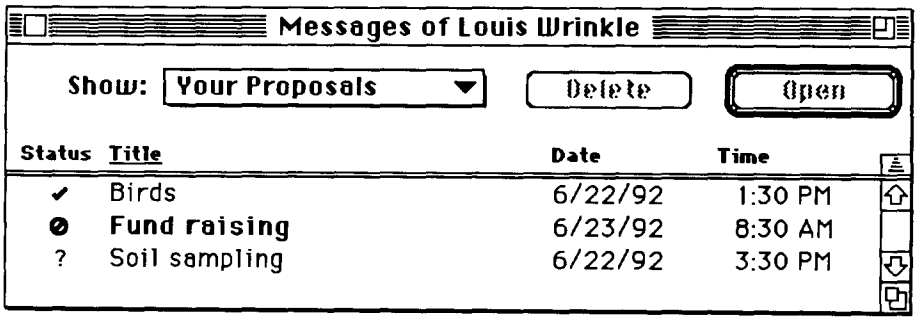
Changing a Meeting

You can change a proposed meeting any time before the meeting occurs. If you change the date and time, Meeting Maker removes the meeting from everyone's schedule and notifies each guest. Guests must respond with a reconfirmation. You can also change other aspects of your proposal, such as the guest list or agenda, and Meeting Maker will notify each guest.

Accessing Calendars

You can access calendars in two ways. The first option is to log in with the username and password of the person whose calendar you want to see or change. The second option is to access their calendar by acting as a proxy. This option is preferable since keeping your username and password confidential is good practice.

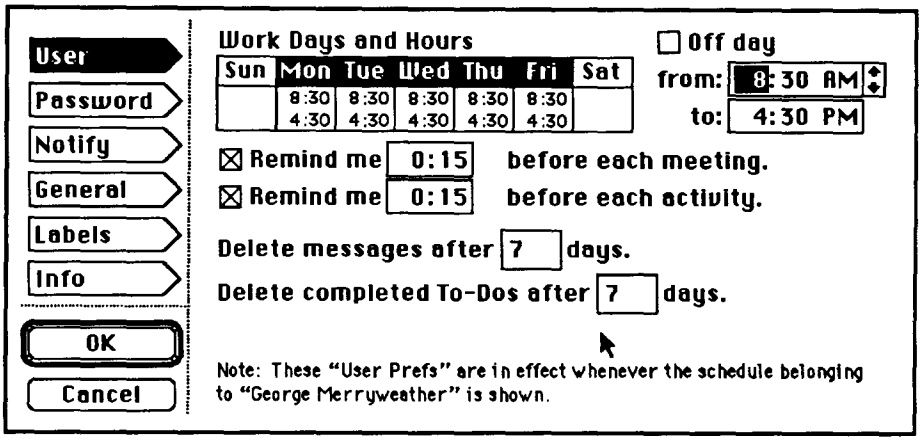
Figure 5: Active Message and Status Symbols



Proxies

A proxy is a person or persons you designate to access your calendar. Proxies can have full access or read-only privileges. Full access enables proxies to make changes to your calendar. Read-only privileges mean a proxy can only look at your calendar. Proxies do not have to know your password. To designate a proxy, select *Edit Proxy List* from the *Meeting Maker* menu.

Figure 6: Some Preferences Options



Scheduling Resources

A resource can be anything that aids a meeting, such as an overhead projector or a room location. Since meeting resources are usually in demand, all Meeting Maker users should be given proxy status so they can see what is available. To avoid uncontrolled scheduling, the Meeting Maker administrator generally gives only one or a few proxies full access to schedule resources.

Scheduling Activities

An activity is anything other than a meeting, such as a doctor's appointment or time you want to spend working on a project. You schedule an activity by dragging a box on your calendar or by selecting *New Activity* from the *Meeting Maker* menu.

You can define an activity as "flexible" so you will be available for meetings that are proposed. This way you can schedule a block of time to work on a project but still be available if an important meeting arises. You can prevent users from seeing the title of an activity on your calendar if you want to keep it confidential.

Printing

When you print your calendar you can include information such as a guest list and comments. You can even print your calendar on special forms that fit into various personal planners, such as Day-Timer or the Franklin Day Planner. Order forms are included in the Meeting Maker package.

Preferences

Meeting Maker allows you to customize your calendar. You can color code activities and meetings, set how many days show on your calendar, change the font, specify how you receive notifications, or specify information about yourself that you want other Meeting Maker users to see. For example, you may want to specify a person who will take your place at meetings or include your phone number. Some preference options are shown in Figure 6.

Multiuser Packages

Meeting Maker comes in 5- or 10-user packs. If you buy the 5-pack, you can create accounts for 5 users and 5 resources. If you buy the 10-pack, you can create 10 user and 10 resource accounts. If you want to let more people use Meeting Maker, you must buy increments of the 5- or 10-pack. Resource accounts cannot be used as extra user accounts since they cannot propose meetings.

Each pack contains individual software and manuals for users and the administrator. The manuals contain easy-to-follow step-by-step instructions and a complete glossary of Meeting Maker terms. Since Meeting Maker uses symbols (icons) to represent various aspects of the scheduling process, a useful Icon Guide is included.

How to Order

The list price for the 5-pack is $495; the 10-pack is $895. ON Technologies, Meeting Maker's distributor, offers a 50% educational discount. For ordering information or technical support, call 1-800-548-8871. Orders can be mailed to:

ON Technologies, 155 2nd Street, Cambridge, MA 02141, Attention Jeff Wiley, University Representative

Hardware and Software Requirements

Meeting Maker software comes in two parts: Meeting Maker server software and the Meeting Maker program. (Those who want more information about networks and the Meeting Maker server software should read *Meeting Maker Across a Network* below.)

The Meeting Maker server software manages the flow of information between Meeting Maker users. You can run the server software on most Macintoshes that have a connection to an AppleTalk network. However, the faster the Macintosh, the faster the server software can respond to Meeting Maker users. Servers need to be at least a Mac Plus running System 6.04 or above. Servers also need at least 5 megabytes of free hard disk space and 2MB of RAM. Under System 7 you need at least 2.5MB of RAM. The server software will use about 250K of RAM, plus 2K of RAM per user account.

The Meeting Maker program is a desk accessory that uses 20K of RAM and less than 400K of disk storage space. To run Meeting Maker, individuals need at least a Mac Plus. Those running System 6.04 need at least 1MB of RAM. System 7 requires at least 2MB of RAM (we recommend 4MB).

Wish List

We've listed some options we would like to see in Meeting Maker upgrades.

- ❑ Display newly proposed meetings on your calendar. Currently nothing appears on your calendar until a meeting is confirmed.
- ❑ Provide an option for printing a yearly calendar. Currently you can print only daily, weekly, and monthly calendars.

Conclusion

Meeting Maker is a useful scheduling tool, and we give it a high rating. The software is easy to install, easy to use, and fully compatible with System 7. Hardware requirements are minimal. When we tested Meeting Maker, no system bombs, freezes, or anomalies occurred. The manuals are well documented and easy to understand. In addition, ON Technology offers free technical support that is easily accessible.

Meeting Maker Across a Network

A network is a collection of computers and peripherals connected via cables and other network hardware. People on the network can communicate with one another and share resources, such as printers and file servers. Meeting Maker is another resource that can be shared by Macintosh users over a local or a wide area network, such as between Minneapolis and Duluth.

The Meeting Maker Server

The Meeting Maker server is a computer that holds the Meeting Maker calendars and manages the flow of information between users. All Meeting Maker interactions occurs at this central location. The server can be a computer that is used only for Meeting Maker, or it can be a non-dedicated computer used by anyone on the network. Dedicated servers can handle up to 200 users. Non-dedicated servers can handle 100-150 users, depending on the type of Mac, memory and other applications on the server. A dedicated server will be much faster than a non-dedicated one. You can have an unlimited number of Meeting Maker servers on a network, keeping in mind that high network traffic may slow down performance. Meeting Maker can run simultaneously on Macintoshes used for other files serving purposes, such as by AppleShare.

The Administrator

The Meeting Maker administrator is responsible for installing and configuring the server software. This includes creating accounts and passwords for users and meeting resources, adding University holidays to Meeting Maker calendars, backing up the server data, and performing general maintenance. The *Meeting Maker Monitor* utility allows the administrator to track users and resources on the network and to monitor the performance of the server, such as whether it is running, stopped, importing or exporting data, or whether an error has occurred.

News and Announcements

▼ IBM Printers: Portable and Inkjet

IBM recently introduced two light-weight printers. Some of the printers' distinguishing features are listed in Table 1. Both print on plain paper, transparencies, and envelopes at 360 x 360 dots per inch. Each printer is discussed in more detail below, and demonstration models are in the Shepherd Labs Microcomputer HelpLine.

■ Portable 5183

IBM's new 2.5 pound Portable is designed to be a companion for laptop and notebook computers. Since this printer is very portable (it's about the size and weight of a folded newspaper), if you want to see it you must ask a consultant to show it to you. The 5183 is a thermal transfer printer that melts special ink onto plain paper. When printing on transparencies, you can use stock designed for copiers or laser printers.

Power and Connections

The printer comes with a special cable that is smaller and more flexible than a normal parallel cable; it's 35 inches long. The cable end that plugs into the Portable 5183 printer is a custom "mini-parallel" connector. However, the end that plugs into the computer is the standard Centronix parallel connector.

When you use the battery, the number of pages you can print per battery charge depends on what you're printing. If your pages are average business letters, you'll get approximately 20-25 pages. If you print pages with lots of text or graphics, you may get 12-15 pages.

To use AC power, you use the AC power adapter/battery charger that comes packaged with the printer. If the battery is installed in the 5183 but not fully charged, the charge light will come on. It takes about six hours to recharge the battery. Although battery life varies, most should be rechargeable 400-600 times.

Fonts and Packaging

The 5183 comes with Roman, Courier, and Courier Italic Fonts, plus print enhancements such as bold, outline, reverse, quad-high, and quad-wide.

The Portable 5183 comes with a NiCad battery, an AC adapter/battery charger, a mini-parallel printer cable, one letter quality and one high yield ribbon, and a printed copy of the *Users Reference Guide*. You also get a 3.5-inch diskette with an on-line *Users Reference Guide* and a 5183 printer driver for Microsoft Windows.

Ribbon Cartridges

You can use two types of ribbons in the 5183:

- the letter-quality ribbon that you use once (1380610 with a black hub)
- the high yield that you can reuse (1380615 with a white hub)

At press time we did not have discount prices for these ribbons. However, we expect the price to be under $7.

Generally you can print about 35,000 characters with the letter-quality ribbon and 100,000 characters with the high-yield ribbon. (The measurement for these characters is a fixed-width 10 characters per inch font, such as Courier.)

The 5183 also includes a dial that you can use to adjust the print darkness.

Compatibility

You can expect software that works with the IBM Proprinter 24P, IBM PS/1 Printer, IBM Proprinter X24E, Epson LQ-850, and Epson LQ-1500 to work with the Portable 5183. However, if your software does not have a printer driver specifically for the Portable 5183, it may not support all of the Portable's features. Windows users will find a software printer driver specifically for the 5183 packaged with the printer.

■ IBM 4070 IJ Printers

The 4070 IJ is a plain paper inkjet printer. When printing on transparencies, use stock designed for inkjet printers (not stock designed for copiers or laser printers). To use the 4070 IJ as a portable printer, you can purchase an optional NiCad rechargeable battery.

Fonts and Packaging

The 4070 IJ comes with Roman, Courier, Sans Serif, Prestige, Script, Orator, Orator-S, and draft fonts, plus print enhancements such as bold, outline, reverse, double-high, and double-wide.

The 4070 IJ comes with a print cartridge, an AC power Adapter, and a *User's Reference Guide*. It also comes with a 3.5-inch diskette with a 4070 IJ printer driver for Microsoft Windows and Microsoft Works. You must purchase a cable to connect the printer to your computer.

At press time we did not have discount prices for replacement ink cartridges, but we expect the price to be under $31.

Warranty

Although each printer comes with a one year warranty, warranty work is not handled in the usual manner. Instead of taking the printer to Engineering Services, you call the Lexmark Technical Support Center. They'll give you shipping instructions for your printer. Lexmark pays the freight and provides free, second business day replacement for one year.

Table 1: New IBM Portable Printers

Features	**Portable 5183**	**4070 IJ**
Part No.	5183-010	4070-001
Dots per inch	360 x 360	360 x 360
Price	**$337**	**$354♦**
Speed		
○ letter quality: 10 cpi	53 cps	83 cps
○ fast	–	110 cps
Size (inches)	11.7x3.5x2	12.2x8.75x2.1
Weight (pounds)	2.5 with battery	7 with sheet feeder
Parallel Interface	mini	standard
Memory	4K buffer	37K buffer
Emulation		
○ Epson	LQ series	LQ-510♠
○ Proprinter	X24	X24E, XL24♠
○ Canon BJ	-	-10e, -130e♠
Paper handling		
○ single sheets	auto loading	yes
○ sheet feeder	-	50

♦ A second configuration, 4070-022, comes without a sheet feeder. Its price is $319 and it weighs 4 lbs.

♠ To change emulation modes on the 4070 IJ, you may need to change DIP switches; instructions are in the printer manual.

▼ New IBM Notebook Computer: N45 SL

In late July IBM announced its fastest notebook computer, Model N45 SL which has a 386SL microprocessor. It has a 64K cache and a built-in full-size 82/83-key keyboard. At press time the Microcomputer HelpLine in Shepherd Labs did not have a demonstration model of the N45 SL.

IBM's memory modules for the N45 SL support 2 (standard), 4, 6, and 8MB configurations. There are no internal slots for attaching items other than Model N45 SL specific options.

The N45 SL is shipped in a single carton that includes the computer, an AC adapter, a rechargeable battery, a power cord, and documentation, such as a printed *Guide to Operations*. It does not come with a DOS manual or IBM DOS software.

Security conscious people can use the metal loop on the case of the system to secure the N45 SL with a cable and padlock.

Monitor

The N45 SL has a 10-inch LCD (liquid crystal display) with cold fluorescent sidelighting. It supports 640 x 480 VGA (Video Graphics Array) resolution and is capable of displaying up to 32 shades of gray.

Battery Life: 3-8 Hours

The N45 SL uses the power management capabilities of Intel's 386SL processor. Even if this notebook is used continuously, it can provide you with three hours of battery life. When the system is used in a more typical manner, it can provide up to eight hours of use.

Software: IBM DOS $95

None of the portable computers listed in Table 2 come with any software, including an operating system. You must purchase IBM DOS separately. The Book Center sells it for $95.

Comparisons

In our June newsletter we announced three other IBM portables: N51 SX, N51 SLC, and the color C57 SX. The prices of these machines have dropped since that announcement. To help you compare various portable options, Table 2 lists prices and selected features for IBM's newest portable computers.

Table 2: Newer IBM Portable Computers

Model	N45 SL	N51 SX	N51 SLC	CL57 SX
	2614-045	8551-033	8551-025	8554-045
Price	**$1744***	**$1293**	**$1698**	**$4001**
System				
○ CPU	80386 SL	80386 SX	80386 SLC	80386 SX
○ Speed, MHz	25	16	16	20
○ Optional Coprocessor	80387-25	N	N	80387-20
Memory				
○ Installed, MB	2	2	2	2
○ Maximum, MB	8	10	10	16
○ Slots	3	1	1	2
Drives				
○ Floppy Drive, 3.5-inch, 1.44MB	Y	Y	Y	Y
○ Hard Drive, Size (MB)	80*	40	80	80
○ Hard Drive, Access Time (ms)	19	19	17	17
Physical				
○ Depth and Width	8.3 x 12.4	8.3 x 11.7	8.3 x 11.7	10.9 x 12.8
○ Height	1.8	2.1	2.1	2.8
○ Weight (pounds)	6.9 (with battery pack)	6.2	6.2	11 (with battery pack)
○ Monitor (inches)	10	9.5	9.5	10.4
Other				
○ Battery Life (hours)	up to 8	1.5 to 2	1.5 to 2	1
○ AC adapter	Y	Y	Y	Y
Ports				
○ Serial	Y	Y	Y	Y
○ Parallel	Y	Y	Y	Y
○ VGA	Y	Y	Y	Y
○ Pointing Device/Numeric Keypad	Y	Y	optional	optional
○ External Expansion (for communications cartridge)	–	Y	Y	Y

* A second configuration of N45 SL with a 120MB hard, 17 ms access time, is also available for $1896, part number 2614-067.

Table 3: Options for Notebook N45 SL

Part No.	Description	Discount Price
PS/Note N45 SL Part		
92F8804	2MB memory module	$ 159
92F8806	NiCad battery	90
92F8807	AC adapter	96
92F8808	carrying case	57
92F8805	data modem, 2400 baud	159
92F8809	fax data modem: 2400 baud data, 9600 fax	219
PS/2 Parts		
07G0033	miniature mouse	$ 56

▼ Macintosh PowerBook 145

In August Apple announced a new notebook computer, the Macintosh PowerBook 145 and discontinued the PowerBooks 100 and 140 (which we announced in our November 1991 newsletter).

The PowerBook 145 incorporates all the features of the PowerBook 140, its predecessor, except the CPU. With a 25MHz microprocessor, the 145 is 30% faster than the 140, which has a 16MHz CPU. The PowerBook 145 has the same monitor as the 140, a 10-inch Backlit Supertwist liquid crystal display (LCD). It's also compatible with the accessories and parts used in the 140, such as memory cards, rechargeable battery, and data/fax modem.

Memory

The PowerBook 145 comes with 4MB of pseudostatic random access memory (RAM):

- 2MB of RAM is on the logic board
- 2MB is on a RAM expansion card that fits into the 145's one memory card slot

You can expand the RAM up to a maximum of 8MB. To do this you must replace the 2MB expansion card with a 4- or a 6MB RAM expansion card.

Although the PowerBooks 140, 145, and 170 can use System 7's virtual memory feature, using it increases hard disk use and degrades battery life. If you turn on virtual memory, Apple suggests that you run off wall current rather than the battery.

PowerBook 145 versus 170

Table 4 compares like configurations of the PowerBook 145 and 170. Each configuration has 4MB of RAM and a 40MB hard disk. The price used in Table 4 for the 145 is good only through October 15, the duration of Apple's Back-to-School Promotion. At press time the Microcomputer HelpLine in Shepherd Labs did not have a PowerBook 145. However, if you want to compare displays, we do have a PowerBook 140 and a 170. The Active Matrix LCD in the PowerBook 170 is a better display than the Supertwist LCD in the PowerBook 145.

Table 4: PowerBook 145 and 170 4/40 Configurations

PowerBook Configuration	145	170
What's Different		
◦ Price	$1695	$3365
◦ Part No.	K0135LL/A	M1057/LLA
◦ Internal Data/Fax Modem	N*	Y
◦ Coprocessor	N	68882
◦ 10" Display: Backlit LCD	Supertwist	Active Matrix
What's the Same		
◦ Microprocessor (CPU): 68030 running at 25MHz		
◦ Battery: NiCad, runs 2-3 hours, 3 hours to charge		
◦ Power: 50-60MHz, 110-220V		
◦ Size and Weight: 2.25 x 11.25 x 9.3 at 6.8 lbs (without the fax)		
◦ Hard disk: 40MB		
◦ Internal floppy disk drive: 1.44MB FDHD superdrive		
◦ Installed RAM: 4MB		
◦ Maximum RAM: 8MB		

* Internal Data/Fax Modem is sold separately for $195 (PN M0970LL/A). The price includes installation.

▼ HP LaserJet Fax

Hewlett-Packard recently introduced a product that lets you add fax functions to LaserJet Series II and III printers. This means the faxes you receive will be printed on the paper that's in your LaserJet.

The LaserJet Fax is a Group III fax that transmits at 9600–2400 bits per second at a rate of about 17 seconds per page. Its features include a document feeder that holds 5 sheets of paper, delayed dialing, and confidential transmission. Your auto redial options include slow (15 attempts at 10 minute intervals) and fast (5 attempts at 1 minute intervals).

The LaserJet Fax comes with IBM-PC compatible software that lets you set up electronic phone books, creates distribution lists, and schedule faxes.

The Microcomputer HelpLine does not have a demonstration model of the LaserJet Fax.

Figure 1 shows how to set up a LaserJet Fax. Note that to receive incoming faxes you must remove PostScript cartridges and Epson FX and IBM Proprinter emulation cartridges.

Price: $870

The Book Center's price for the LaserJet Fax, Part No. C1740A, is $870. This LaserJet accessory comes with a one year warranty.

System Requirements

Besides a LaserJet Series II or III printer, you need an IBM-compatible computer. To use the LaserJet Fax you need IBM/MS-DOS 3.3, 4.01, or 5. It also supports Windows 3.0 (HP is testing compatibility with Windows 3.1). If you're using DOS you need 3MB of free disk space. Windows users need 4MB of free space.

Print Quality

The LaserJet Fax receives and transmits faxes at 203 by 98 dots-per-inch (dpi) and 203 by 196 dpi. Machines equipped with LaserJet Faxes can transmit to each other at 300 x 300 dpi.

Memory

The fax comes with 256 kilobytes of memory, enough to hold up to 13 pages. You can upgrade to 1.25MB of memory, which is enough memory to hold up to 70 pages. More memory enables the fax to hold more incoming pages, a useful feature when the printer is busy, out of paper, or turned off.

Central System News

▼ Help Lines Have New Hours

On September 1 we changed our hours for the three Central System Help Lines shown below.

Help Line	Phone	New Mon-Fri Hours
Central Systems		
EPX, NVE, VX, VZ	626-5592	9 a.m. to 4 p.m.
LUMINA	626-2272	9 a.m. to 4 p.m.
MEDLINE	626-8366	9 a.m. to 4 p.m.

Consulting via E-Mail

Those who need consulting help when the central systems Help Lines are not open, can send E-mail to *consult* on these central system: EPX, NVE, VM1, VX, and VZ. The E-mail format and examples are shown below. This information is repeated on our newsletter's "Help" page.

Format

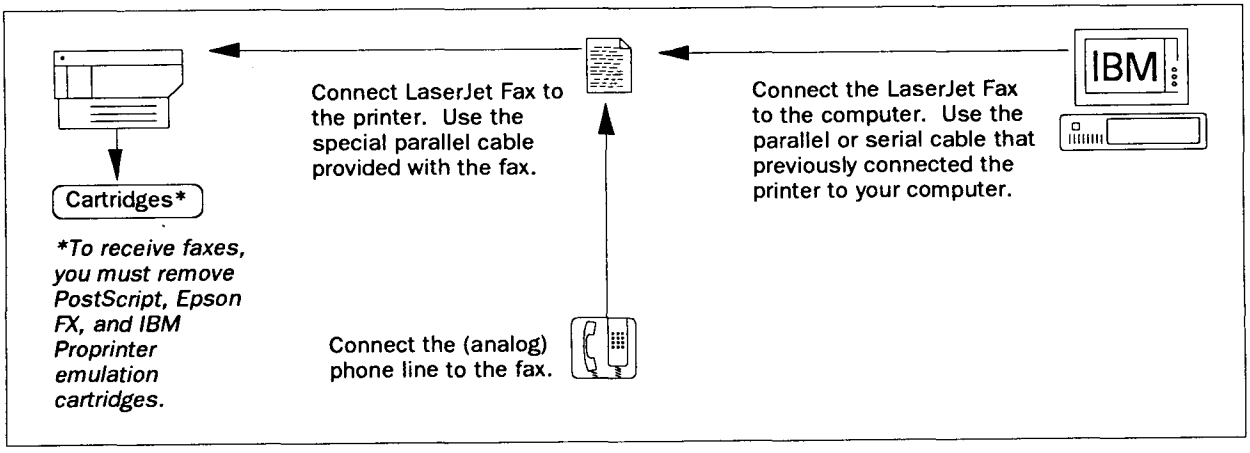
```
consult@machine.name.umn.edu
```

Examples

```
consult@epx.cis.umn.edu
consult@vm1.spcs.umn.edu
```

A consultant will usually return a response within 6 to 12 hours, depending on the question's complexity.

Figure 1: Setting Up the LaserJet Fax



▼ VMS Upgrade to 5.5_1

On September 20 our VMS cluster will be upgraded to VMS Version 5.5_1. (The current version of the system is 5.4.) Also on that date we will update compilers, layered products, and the network's communication software (Multinet's TCP/IP, Telnet, Finger, NFS, and others).

VMS Version 5.5_1 includes enhancements for batch and print jobs, integration of new network functions, and an improved BACKUP tape utility. In general, changes in the new version of the operating system are upwardly compatible. For a full description about the upgrades of each product you can refer to individual on-line documents. The documents are available through *ListDoc* on the *Changes* subtopic of the *VMS System* topic.

Test Times

Test times will be available on two Sundays, September 6 and 13, from noon to 4:00 p.m. Please call the Central Systems Help Line at 626-5592 if you have any problems. Note that any password changes that you make during these test times will not affect your password during normal production hours.

Names Changed to CISVX, CISVW, CISVZ

On September 20 we will also change the ACSVX, ACSVW, and ACSVZ DECnet names to CISVX, CISVW, and CISVZ to reflect our organization's present name.

Bargains

▼ Update - Math and Statistical Source Code Available via E-mail

You can use a special E-mail system to obtain source code for mathematical and statistical routines you might use in writing your own software. This system reads E-mail sent to it and automatically responds to requests by sending an E-mail reply to the person who sent the request.

NETLIB and STATLIB

NETLIB and STATLIB are automated E-mail systems that distribute public domain source code for mathematical and statistical routines.

NETLIB contains a wide range of mathematical software, including numerical linear algebra, linear programming, nonlinear optimization, curve fitting, special functions, fast Fourier transforms, the numerical solution of ordinary and partial differential equations, and more.

As you might expect, STATLIB contains a wide range of statistical routines.

Since you get source code, you must have a compiler (such as Fortran, C, or Pascal) to use these routines. Because this is public domain software, there are no guarantees. However, much of the code is nationally recognized for its quality. We recommend that you carefully test and check each routine and look for machine constants in the codes. Machine constants for a Cray might produce incorrect results when used on an IBM PC.

NETLIB Update

Two U.S. locations run the NETLIB E-mail system. Although they don't have exactly the same software, the differences are small. We understand that the system managers periodically try to make them match.

NETLIB@RESEARCH.ATT.COM recently added

- ❑ **DDSV**: Software from Dongarra et al "Linear Algebra Computations on Vector and Parallel Computers"

NETLIB@ORNL.GOV recently added

- ❑ **HENCE**: Heterogeneous Network Computing Environment, built on top of the PVM software for parallel virtual machines
- ❑ **IEEECS/CASCADE**: Computer-Aided System and Control Analysis and Design Environment

The following have recently been added at both locations.

- ❑ **C/MESCHACH**: C language numerical linear algebra for dense and sparse matrices
- ❑ **IEEECSS**: IEEE/Control Systems Society software
- ❑ **LAPACK**: Linear algebra package (see our July 1992 newsletter for details)
- ❑ **ML**: Standard ML of New Jersey (programming language compiler)

STATLIB Update

STATLIB@LIB.STAT.CMU.EDU recently added

❑ **JQT**: Algorithms published in the Journal of Quality Technology

Accessing NETLIB and STATLIB

Since all the University's central systems can send and receive internet E-mail, anyone with an account on one of our systems can access NETLIB and STATLIB. Moreover, Macintosh and IBM-compatible users who run POPmail and workstation users connected to the campus internet can also send internet E-mail to access these systems. Figure 1 contains E-mail addresses for the NETLIB and STATLIB E-mail systems. Use these addresses to obtain index files and software.

Figure 1: E-mail Addresses

```
netlib@ornl.gov
netlib@research.att.com
statlib@lib.stat.cmu.edu
```

To use the systems, you also need to know what commands the NETLIB and STATLIB servers understand. The requests are one-line commands that can be the subject part of your mail message or the message itself. In response to commands you send, NETLIB and STATLIB will E-mail an appropriate response to you.

Commands and Descriptions

To get a current list of the NETLIB and STATLIB libraries and descriptions of the commands, send an E-mail message to the appropriate server. Use this subject line

```
send index
```

Keep Your Requests Small

When you access NETLIB or STATLIB, don't ask for an entire library, such as LAPACK. Complete libraries are much too large to send. Instead, ask for specific routines.

Central System Copies of Libraries

Some of the NETLIB and STATLIB libraries are already on the VAX VX central system. If you have an account on VX, you can find out more about these libraries by using the LISTDOC command followed by a space and NETLIB or STATLIB.

FTP Access

Both NETLIB and STATLIB allow FTP access. FTP is a file transfer protocol program available on most computers on the campus internet. Use the command *ftp* followed by a space and then the site name from Figure 1. Log in with user name *netlib* or *statlib* (both lower case). Enter your user name as the password. You may need to use the ftp binary command before transferring files. Several files have a .Z suffix indicating you need to use the UNIX uncompress command to expand the files to text mode after you have transferred them.

▼ Varsity Program for Iris Workstations

The University of Minnesota recently bought into the Iris Varsity Program offered by Silicon Graphics, Inc. (SGI) for its Iris workstations. This program offers a site license covering the basic applications and libraries required for the Iris workstations and includes deep discounts for additional software that you might need to order from SGI.

Fees and Support

For $350 per workstation you get support for the following software:

IRIX Operating System
Fortran, Pascal, C, C++ Compilers
Network File System (NFS)
ImageVision Library
Software Development Tools

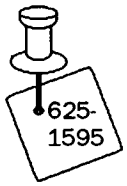
In the second and subsequent years the maintenance charge for a covered workstation will be less than $350.

To register your Iris workstation in the Varsity Program, or for more information, call our Shepherd Labs office at 625-1300.

Software on CD-ROM

We have the software available on CD-ROM. Once you have paid the registration fee you may borrow what you need.

Engineering Services



Engineering Services provides warranty service to University departments, employees, and students on most equipment sold through the discount program. They also provide service on equipment such as workstations, terminals, and peripherals. If you have trouble with your microcomputer equipment, your first call should be to the Microcomputer HelpLine at 626-4276; the consultants will help you determine if the problem is with your hardware or software. If the symptoms point to the hardware, call Engineering Services at 625-1595.

▼ Quadra 900 to 950 Upgrade

When we announced Apple's Quadra 950 in our June newsletter we did not have information on upgrades. Now we do. The Quadra 950 is similar to the Quadra 900 but is faster, 33MHz versus 25MHz. Quadra 900 owners can purchase the M1421LL/A Quadra 950 Logic Board Upgrade for $1410 through December 28. After December 28, 1992 the price becomes $2225. These prices include installation.

▼ Dull/Off Color Mac Monitors

We've a memory (ROM) upgrade that may correct the "dull or off color" problem noticed by some people who've attached a Macintosh 16-inch or 21-inch monitor to a 4•8 or 8•24 card. This upgrade costs about $50 and is *not* covered by the Apple warranty.

Tips, Tricks, Tutorials

PageMaker Users' Group

A PageMaker Users Group was organized with assistance and encouragement from the Minnesota Communicators Forum. Meeting space and demonstration equipment is provided by Computer and Information Services.

If you want to get together to share some PageMaker tips and techniques, attend a meeting. Meeting dates have been set for the rest of 1992: September 24, October 22, November 25, and December 17. Each meeting will be held in 1 Nicholson Hall, from noon to 1 pm. When you attend, bring your lunch and a sample of something you do in PageMaker.

For more information, you can call Pat Aukema at 6-1621 or Norma Storms at 6-1983.

Book Center Notes

The offers listed here are made to University departments, employees, and students, and are subject to the eligibility rules of the Microcomputer Discount Program. If you have questions about availability, phone the Computer Desk in Williamson Hall at 625-3854. During the school year the Computer Desk is open Monday–Friday from 8:30 am to 5:30 pm.

Those with access to electronic mail and the University's internet can get product and price change bulletins for the products sold through the Computer Desk. To be added to the mailing list, E-mail a request to:

`request@boombox.micro.umn.edu`

Once you are on the mailing list, you will receive notification via E-mail as soon as we have new prices or products.

▼ Handouts, Sales Tax, Credit Cards

Individuals must add 7% sales tax to all prices listed here or in our handouts. University departments do not have to pay sales tax. You can charge your purchases on your MasterCard and Visa accounts.

For more complete descriptions of the hardware products listed here or of those available through the discount program, pick up one of our handouts. Paper handouts are available at all Microcomputer HelpLines. Electronic versions are available from the Computer Consultant (gopher). At press time the names and dates of our printed handouts are: *IBM PS/2 Computers* 7-24-92, *ZEOS MS-DOS Compatibles* 7-8-92, *Printers for IBM-Compatible Computers* 7-1-92, *Apple Macintosh Computers* 5-28-92, *Macintosh Printers and Peripherals* 8-10-92, *NeXT* 6-2-92, and *Networks* 2-5-92. Some specialized handouts are also available from the Microcomputer HelpLines.

▼ Recent Price and Product Changes

■ IBM Video Displays

The IBM price list contains some additional video displays, such as the 8516 touch screen monitor and the 8515-021. Sample prices are shown below.

8515 Surpasses Swedish Guidelines

IBM announced an enhancement to their 8515 14-inch color display that resulted in a new product number but no price increase. The 8515-001 was replaced by the 8515-021. The enhancement is a reduction in display emissions that surpass the VLMF (Very Low Magnetic Frequency) and ELMF (Extremely Low Magnetic Frequency) guidelines set forth in the Swedish MPR 1990:08.

The 8515 comes with a tilt/swivel stand and remains capable of VGA and XGA graphics standards. XGA will allow resolutions up to 1,024 X 768 with 256 colors simultaneously.

Part	Price	Size	Resolution	Dot Pitch
8515-021	$549	14"	1024x768	.28
8516-001	$939	14"	1024x768	.28

■ Apple LaserWriter Prices

The prices of the LaserWriters IIf and IIg dropped by $200. Their new prices are: $2240 for the IIf and $2915 for the IIg.

■ LaserJets and PostScript Cartridge

Some configurations of the HP LaserJet III, IIIP, and IIID come with AppleTalk and a PostScript cartridge. These configurations now come with HP's PostScript Cartridge Plus. This cartridge supports PostScript Level 2 and automatic switching between PCL5 (Printer Control Language 5) and PostScript. (The IIP does not come with the new PostScript Cartridge Plus.) None of the LaserJet printers' prices have changed recently.

■ Apple Monitor Prices

Two of the Apple monitor prices listed in our August 1992 newsletter's *Book Center Notes* section were $5 off. The corrected prices are listed below.

Apple Part	Description	Corrected Price
M0298LL/A	Monochrome: 12-inch	$195
M0297LL/A	Color: 12-inch RGB	$390

■ Asante Ethernet Cards for Macs

The price of Asante Ethernet cards that come with math coprocessors dropped from $275 to $240. Asante makes these multi-purpose cards specifically for the Mac LC, LC II, and the Mac IIsi.

▼ Envisio Display and Memory Option for Mac PowerBooks

The Book Center recently began carrying Envisio's display adapter for the Macintosh PowerBooks 140/145 and 170. This adapter also comes with 2MB or 4MB of RAM (random access memory) installed on it. The adapter fits into the 140 and 170's memory expansion slot. Envisio's proprietary method, called RamView, extracts video signals from the PowerBook's memory expansion slot.

Discount Price

At the computer desk the adapter with 2MB of RAM is $886. The one with 4MB of RAM is $1050.

Software

The software that comes with this product is compatible with System 7 and the System 7 tune-up kits. (Currently that software is version 1.2.9. Those who have older versions can get a free upgrade by calling Envisio at 612/339-1008.)

About RAM Expansion

If you've already expanded your PowerBook's memory by adding Apple's 2MB memory expansion kit, you can add that memory to the memory on Envisio's adapter. Due to the tight quarters inside the PowerBooks, it is unlikely that third party memory cards that are thicker than Apple's 2MB card will work.

Please note: the maximum RAM you can install in the 140 and 170 is 8MB. Apple's 4MB 140 and 170 configurations have Apple's 2MB RAM expansion card installed in them (the other 2MB is on the main logic board); this memory is compatible with the Envisio adapter.

The Display Adapter

The display adapter lets you connect an external monitor to the 140 and 170 using the standard Apple 15-pin connector. (Apple monitors come with a 15-pin connector

on the cable.) You can plug any Apple monitor into the Envisio adapter. What you see on your monitor always depends in some way on which video adapter it is plugged into. For the Apple monitor/Envisio adapter combination, the resolution is the same but the colors or shades of gray you see vary. The exact numbers are shown in Table 1.

Table 1: Envisio Display Adapter

Monitor/Size	Resolution	Colors/Shades of Gray
Monochrome		
12"	640 x 480	256
15" (portrait)	640 x 870	16
21" (2-page)	1152 x 870	black & white
Color		
12" (RGB)	512 x 384	256
13" (Hi Res)	640 x 480	256
16"	832 x 624	16
21"	1152 x 870	black & white

The display adapter comes with software that you use to tell it what monitor you're connecting. The software's menu contains the monitors shown in Table 1. You can turn on a ***Presentation*** mode that lets you view the same image on the built-in screen and the external display. Your options are discussed in more detail in the software section of the manual that comes with the display.

Apple offers complimentary telephone technical support for A/UX 3.0 for one full year. This support is available to new customers as well as those who upgrade from A/UX 2.X. The telephone service offers installation, configuration, system administration, and trouble shooting support.

System Requirements

Version 3 potentially runs on any Mac II, the Quadras, and the SE/30. To run it you need at least 8MB of RAM and an 80MB hard disk – a 160MB disk is recommended.

You may also need an Ethernet connection, such as Apple's Ethernet NB card. To install A/UX 3.0 from the A/UX 3.0 CD-ROM you need an Apple CD SC, AppleCD SC Plus drive, or the equivalent.

Ordering Information

A/UX 3.0 is available on a CD-ROM (Order No. M0598LL/B) for $495. For more information see our special A/UX handout which also includes Mac II and Quadra configurations that already have A/UX installed on them.

Upgrades

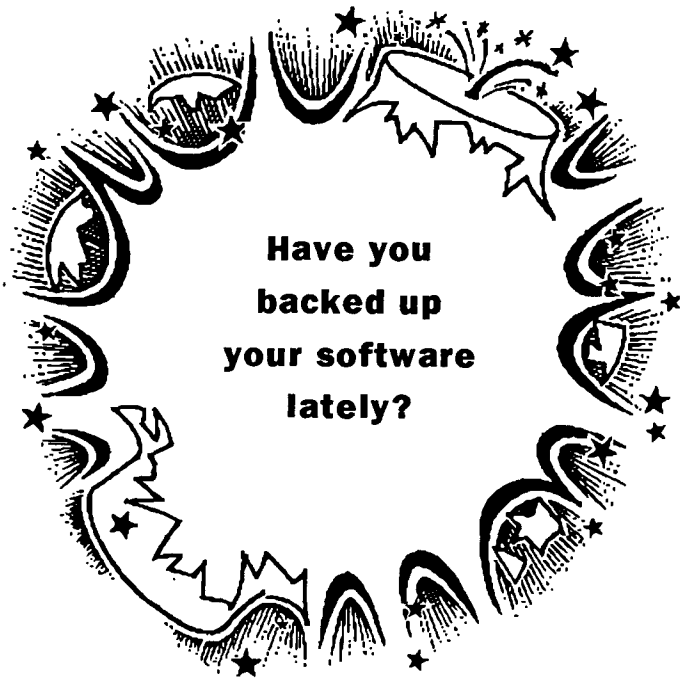
A/UX 3.0 Update Product (Order No. M0599LL/B) on CD-ROM is $179. This update includes the basic manual set and updates any version prior to 2.0.1.

▼ A/UX 3.0 for the Macintosh

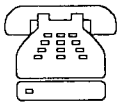
Apple released version 3.0 of A/UX, their version of UNIX for the Mac that combines features from System V and BSD 4.3. Version 3 also supports System 7, MacTCP 1.1, and communications standards such as AT&T V.4 UUCP and CSL/IP (SL/IP with data compression).

A/UX 3.0's new Custom Install option helps conserve disk space. It allows you to select only the portions of A/UX 3.0 that you need to store on your Mac's hard disk and enables you to store the rest on a shared system on the network. In addition, version 3 integrates advanced multimedia capabilities with QuickTime and includes Apple's X Window System products.

A/UX recognizes non-Apple drives, making partitioning disks for A/UX installation easier. Support for network hardware and peripherals, such as Apple's OneScanner and non-Apple Ethernet cards, has also been increased.



▼ Modems and More



One of the specialized handouts we maintain is called *Scanners, Plotters, Modems, and Mice.* We updated this handout in July to include new scanners and mice. We're reprinting some background information on modems below since 9600 baud modems will play an important part in many people's use of the E-Mail accounts that will be assigned to all Twin Cities campus students, faculty, and staff (see *Campus-Wide Electronic Mail Project* on page 41 of this newsletter).

Modems

Modems allow computers to exchange information across telephone lines. The modem (MOdulate/DEModulate) takes characters from your microcomputer's serial port and converts them to signals that can be transmitted over telephone lines. Then it sends these transformed characters to another modem. (Modems always talk to other modems. All of the intermediate conversion is automatic, so you need not worry about how it works.)

Modems are designated by their data transfer rate. The data transfer rate, or baud rate, is the number of bits per second (bps) that characters are transmitted from modem to modem. Since it takes about 10 bits to send one byte (character) of information, you can divide the baud rate by 10 to get the number of characters that are sent each second. For example, 9600 baud/10 bits bps equals 960 characters per second.

Although most modem manufacturers have adopted the Hayes command language, the industry standard, you should make sure that the modem you buy uses Hayes commands.

Buying for the Future

If you are interested in stable communications and future compatibility, buy a 9600 baud modem. 9600 baud is the highest speed modem commonly used at the University. (While some very fast 14,400 baud modems are available, they're currently not supported by the University's modem pool.)

An exciting recent development is that more networking software is becoming available for use via a modem. To be usable from a remote location networking packages need faster communications. High performance 9600 baud modems are the key to getting the performance necessary to use this new wave of software.

The University's Telecommunications Services department uses modems that comply with the CCITT V.42 standard. This world-wide standard provides for data compression and error correction.

Data compression is a way of removing some of the bits that are transferred without removing any of the information the bits represent. The V.42 standard provides for MNP5 and LAP-M data compression. When transferring data over phone lines, transmission "noise" can occur. Error correction is an attempt to detect and correct such transmissions errors.

Internal versus External Modems

Modems can be divided into two categories: internal and external. Both types do the same thing.

An internal modem plugs into a slot inside your computer where it uses the computer's electric power. This means manufacturers don't have to provide a case or power supply for internal modems. And you don't have to use a cable to connect the modem to your computer. As a result, internal modems tend to be a bit cheaper than external modems.

Despite this, we generally recommend that you get an external modem. External modems have activity lights that you can use to help you see if things are working as they should. When things go wrong, you don't have to reopen your computer and poke around inside it – increasing the risk that other internal parts will get messed up. Occasionally, an internal modem will be incompatible with other components inside your computer.

External modems are also easier to reuse. Just buy the proper cables and plug them into different computers. Sometimes an internal modem bought for one computer will not fit inside another.

What to Buy?

Which modem you buy depends on what you want to use it for. If you just want to access LUMINA (Libraries of the University of Minnesota Integrated Network Access), a 1200 baud modem should be adequate. However, the best choice for at-home computer communication to the University's network is a 9600 baud modem with MNP5 data compression and error correction.

Help: Computer and Information Services

Consulting Service	*Phone*	*Help Line Hours*

Computer Services Information Line 625-1555
If you do not know which computer service phone number to call, dial the Computer Services Information Line.

Central System Computers
To use these systems, you need a user name and password, which you get when you open an account.
Qualified users can apply for grants to handle some computing-related costs.

Machine ID			
☐ EPX (UNIX), NVE (NOS/VE), VX (VMS), VZ (VMS)	626-5592	Monday–Friday	9 am to 4 pm *new*
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 (Minnesota MEDLINE on NVE)	626-8366	Monday–Friday	9 am to 4 pm *new*

LUMINA

If you have trouble connecting to LUMINA call	626-2272	Monday–Friday	9 am to 4 pm *new*

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	Tuesday and Friday 1-4, Thursday 9-noon	
☐ St. Paul — 99B Coffey Hall	above	Monday and Friday 9-noon, Wednesday 1-4 pm	

Central System, Microcomputer, and Workstation Consultants: Distributed Services and Planning — B. Alberti, F. Anklesaria, R. Baird, J. Bergman, S. Brehe, S. Collins, S. DeJarlais, M. Dunham, P. Goblirsch, G. Gonzalez, C. Griesel, S. Hakomaki, S. Hickman, M. Hu, J. Jabr, J. Jannett, D. Johnson, P. Kachelmyer, M. Kelleher, D. Larsen, P. Lindner, M. McCahill, P. Oberg, K. Olson, N. Ostrom, J. Pearson, K. Pearson, C. Plaisance, E. Schleske, C. Squires, K. Teder, E. Thayer, A. Thomas, H. Tonsky, D. Torrey, S. Traxler, L. von Munkwitz-Smith

General Information

Acting Associate Provost *with Special Responsibility for Computing & Information Systems on the Twin Cities Campus*
Donald R. Riley 626-9816

Computer and Information Services

Distributed Services and Planning	Shih-Pau Yen
Engineering Services	Don Clark
Networking Services	Lawrence Liddiard
Software Services and Operations	Lee Croatt
St. Paul Services	Mel Sauve
Adaptive Technology Services, voice	626-0365
TDD	4-4037
Central System Accounts, IBM CMS	4-7788
EPX, VX, VZ, NVE (includes MEDLINE)	6-8366
Data Entry Services, Minneapolis	6-8351
St. Paul	4-7297
Equipment Repair and Warranties (Engr. Serv.)	5-1595
Faculty Resource Center	6-1090
Network Addresses (130 Lind)	5-8888
Public Computer Facilities (obtaining access)	5-1300
Software Services (includes contract programming)	5-2303
Tape Librarians (Central Systems)	
EPX, NVE, VX, VZ (Lauderdale Computer 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
AIS (Admin. Info. Services) Customer Assistance	6-0505
Supercomputer Center Help (3030 SCC)	6-0808
Telecommunications, Networking Services:	
Information	6-7800
Repair	5-0006

Access Information

SLIP: 2400/9600 ——— 626-1920

Internet addresses.
Terminal settings for dial-up access to 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 V.32 standard and MNP level 5 error correction). Telecomm supports 8-1-N serial access to the TCP/IP network at 300, 1200, 2400, and 9600 bps.

LUMINA: 300/1200/2400 625-6009
LUMINA.LIB.UMN.EDU

VM1 (IBM/CMS) at 7-1-even
1200/2400 624-4220
19.2 campus data phone 4-4220
VM1.SPCS.UMN.EDU

EPX, VX (includes INFO), VZ, NVE (includes MEDLINE)
300, 1200, 2400, 9600 ..... see *Dial-in Server*
300/1200/2400 at 7-1-even 626-1630
EPX *or* VX *or* VZ *or* NVE.CIS.UMN.EDU

EPX, NVE (includes MEDLINE)
300/1200/2400 625-1445
19.2 campus data phone 3-2400
EPX *or* NVE.HSCS.UMN.EDU

Computer Consultant (log in as gopher)
300, 1200, 2400, 9600 ..... see *Dial-in Server*
CONSULTANT.MICRO.UMN.EDU

Consulting via E-mail: *low-priority Central Systems questions*
☐ Format _____ CONSULT@MACHINE.NAME.UMN.EDU
☐ Example _____ CONSULT@EPX.CIS.UMN.EDU

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Computer and Information Services Newsletter

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Computer and Information Services

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