Microcomputer Newsletter

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News and Announcements

● Free IBM Software Upgrades

The Microcomputer HelpLine has copies of two IBM OS/2 upgrade notices: Extended Edition and LAN Server. Both upgrades are free to those who get their requests to IBM *before June 30, 1990.* IBM's *Upgrade Order Forms* contain full instructions.

OS/2 Extended Edition 1.2

To get the OS/2 Extended Edition upgrade you must send the signed form to IBM accompanied by

- ❑ OS/2 Standard Extended Edition version 1.0 Proof of License and Replacement Card or
- ❑ OS/2 Standard Extended Edition version 1.1 Proof of License.

OS/2 LAN Server 1.2

To get the OS/2 LAN Server upgrade you must send the signed form to IBM accompanied by

- ❑ OS/2 LAN Server version 1.0 Proof of License. ◆

● New IBM PS/2 65 SX and 80 386

IBM recently announced several new products, including the PS/2 Models 65 SX and 80 386 described below. Since both machines use the MicroChannel expansion card bus, you cannot use expansion cards that require a "classic" PC/XT/AT bus in these machines.

For complete information on these and other IBM products available through the Microcomputer Discount Program, see the

NEWS AND ANNOUNCEMENTS CONTINUED ON..... PAGE 98

POPmail for PC/MS-DOS

POPmail is an electronic mail system developed at the Microcomputer and Workstation Networks Center. We announced POPmail for the Apple Macintosh in the August, 1989 issue of this newsletter. We are now happy to announce the first official release of POPmail for IBM and compatible microcomputers that run the DOS operating system.

We invite University departments that are considering electronic mail (E-mail) systems for their microcomputers (both IBM PCs and Macintoshes) and Unix workstations to talk to us about incorporating POPmail into their plans. Many academic departments at the University and around the world are already using our POPmail for the Macintosh. Since POPmail's electronic mail delivery system can be used by IBM PCs, PC compatibles, Macintoshes, and most workstations, POPmail can play an important role in building a unified mail system for a department with several different types of computers.

Design

To be widely effective, an E-mail system must embody three qualities: wide connectivity, ease of use, and reasonable cost. We designed POPmail to meet these goals. Wide connectivity is crucial because most people don't want to use three or four different E-mail packages to communicate with colleagues who use different computers.

You can use POPmail to send and receive E-mail to and from the academic computer centers on campus (ACS, St. Paul Computer Center, Health Sciences Computer Services) as well as departmental minicomputers and workstations. Moreover, you can use POPmail to send and receive E-mail to and from machines on the Internet (CICNET, NSFNET, and MRNET) and on BITNET. POPmail is easy to use, and it is in the public domain (it's free).

On the IBM we achieved POPmail's design goals by writing the program in Turbo Pascal (so we could hide the ugly realities of the traditional Unix mail system from the POPmail user). Because Unix machines have excellent connectivity to other systems, they are a good choice for a mail server. However, most non-technical users are not happy using Unix. By developing a custom application with an intuitive user interface to the Unix mail system, we can give POPmail users the best of both worlds: wide connectivity and ease-of-use.

POPmail's name is derived from Post Office Protocol. POP is a protocol that defines how a computer can retrieve mail from another computer that acts as a shared post office or mail-server. POPmail uses the POP2 protocols to communicate between POPmail and a Unix mail server; this setup lets us present an easy-to-use interface to the E-mail user.

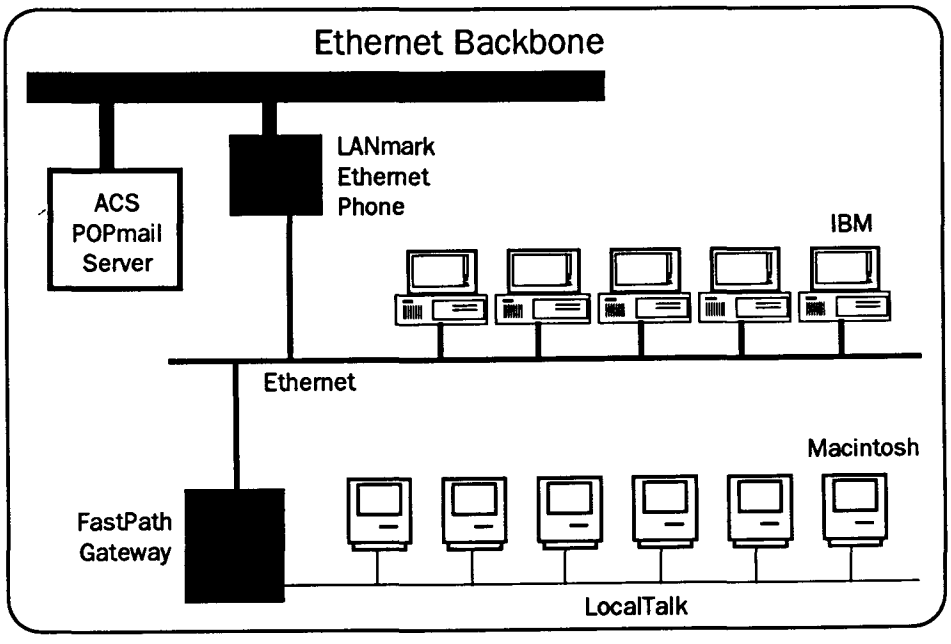
In addition to connectivity, there is another reason to use POP and a Unix machine as a post office. Microcomputers aren't usually left on all the time, and reliable E-mail systems require a post office machine to hold mail that arrives when someone's personal computer is turned off. The mail server is available 24 hours a day to receive and store incoming mail and the user can call on it when convenient.

Selecting a Host Mail Server

POPmail requires a host computer to act as a shared mail server. Several host options are available to you. The easiest option is to sign up for mail-server-only service with ACS (Academic Computing Services). For $20 per year, ACS will provide you with unlimited access to the ACS mainframe mail-server. (For further information about this service, call ACS Accounts at 625-1511.)

If you have access to a Unix-based computer in your department or work group, you may want to use that machine as your host mail server. Examples of small Unix hosts include SUN workstations, NeXT computers, or Macintosh IIs running A/UX (Apple's version of the Unix operating system). Machines of this size should be adequate for servicing around 150 POPmail users.

Figure 1: Sample POPmail Setup



In any case, to use POPmail, one machine must be designated as a post office (POP server). Incoming mail is held in your mailbox on the post office server until you use POPmail on your microcomputer to call for the mail. This process is similar to having your paper mail held for you in a P.O. box at the U.S. Post Office. Like the paper mail user, those who use POPmail don't need to know how the post office business works; they just need to know how to collect their mail.

Figure 1 is a diagram of a worksite that uses the ACS mainframe computer as the mail server; the server is connected to the campus-wide backbone network. The worksite is running POPmail on both IBMs and Macintoshs. The IBM microcomputers are connected to the campus backbone network by Ethernet cable and a LANmark Ethernet telephone. (You can rent a LANmark Ethernet phone from the University Telecommunications department. For further information, call Judith Grittner in the Telecommunications Department at 626-7426.)

Using POPmail

You install POPmail on your microcomputer following the steps described in the manual that accompanies the POPmail software. When you use it for the first time, you need to set up POPmail parameters. POPmail uses these configuration parameters in order to identify you and your computer on the network. When you run POPmail for the first time, POPmail will display the *Options* dialog box shown in Figure 2, allowing you to enter the required parameters, such as password. (You will not need to enter this information during subsequent sessions because POPmail remembers the parameters you enter.)

Initially, the *Username* line will be highlighted. To enter or edit your Username, press your keyboard's Enter key, and a smaller edit box will appear. Type your Username in this box. When you are finished, press the Enter key again to return to the Options dialog box. To enter or edit *Full name*, *Password*, or any of the other parameters in the Options dialog box, use your keyboard's ↑ ↓ keys to highlight the parameter. Then enter the information using the same procedure you used to enter your Username. When you have finished entering the parameters, press the F10 key.

As a first-time user of POPmail, you will be presented with an Outgoing Message window like that shown in Figure 3. To compose a message follow the steps described in the *Sending Mail to Other Users* section below.

Using Menu Items

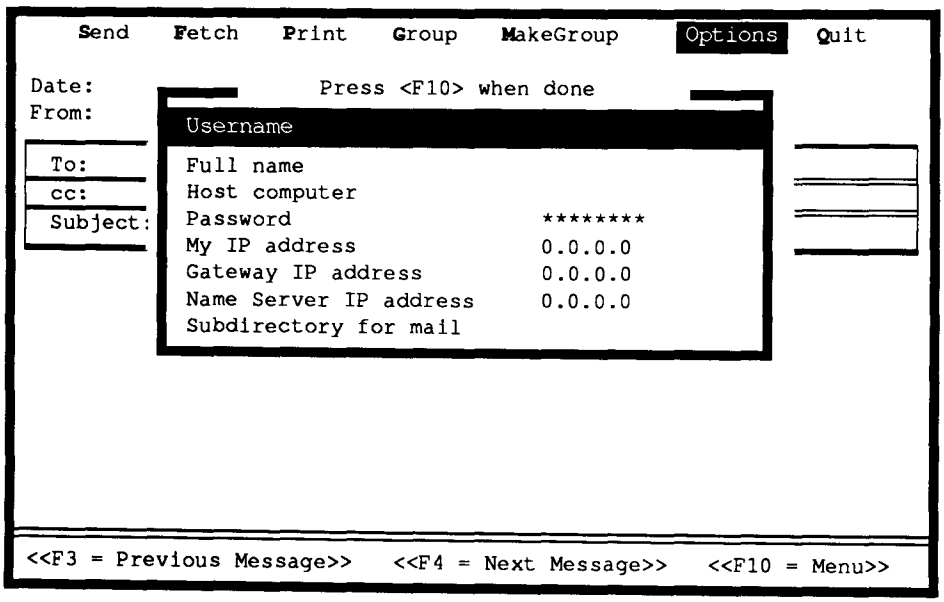
To select a menu item, activate the menu bar by pressing the F10 key. POPmail will present you with the menu bar shown at the top of the screen in Figure 2. Your position in the menu will appear highlighted, indicating that this menu item is currently selected. To select (or "highlight") a different menu item, use your keyboard's ← → keys to move to the left or right along the menu bar. Once you highlight the menu item you desire, press the Enter key to invoke actions associated with that menu item. (Alternatively, you can invoke menu items by holding down the Alt key while typing the first letter of the menu item.)

Sending Mail to Other Users

Using POPmail to send an electronic mail message is easy. Just follow these steps:

1. Select the *Compose* option from the menu bar.
2. Specify the recipient(s) of the message.
3. Specify recipients(s) of carbon copies.
4. Specify the subject of the message.
5. Type the message itself.
6. Send the message.

Figure 2: First Time Users



Invoke Compose

When reading incoming mail, you will be positioned in a window like that shown in Figure 6. To write a message, invoke the Compose menu by pressing the F10 key. Use the arrow key to highlight Compose then push the Enter key. Now your screen will display an Outgoing Message Window (shown in Figure 3), and the cursor will automatically be positioned in the *To* field.

Specify Recipient

To send a letter to someone through the United States mail, you must know their name and full address. Likewise, to send an electronic

message to someone, you need to know their electronic name and address. This is commonly called their E-mail address.

You place the recipient's E-mail address into the POPmail field labeled *To.* (Initially, the cursor is positioned in the To field. In order to move from one field to the next, press the [Tab] key.) Figure 3 shows a sample message.

In this example, the message is being sent simultaneously to two people. One recipient is someone whose E-Mail address is:

kathy@boombox.micro.umn.edu

(This address is read: kathy at boombox dot micro dot umn dot edu. The address denotes a person whose E-mail user-name is *kathy.* Kathy gets mail at a computer called *boombox.micro.umn.edu* on the Internet.)

To send the same message to more than one person, enter additional E-mail addresses separated from each other by one or more spaces (a comma is optional). The message in Figure 3 is also being sent to:

ellen@UMNMOR.BITNET

(a recipient named *ellen* who gets her mail at a computer called *UMNMOR* on *BITNET*). You can send the same message simultaneously to as many recipients as you wish.

Sending Carbon Copies

With POPmail you can send a message directly to some people and carbon copies to others. After specifying the primary recipients of your message in the To field, press the [Tab] key once to access the *CC* field where you can enter E-mail addresses of the people who are to receive "carbon copies" of the message. To send carbon copies to more than one person, enter additional E-mail addresses separated by one or more spaces (a comma is optional). Those who receive messages see E-mail addresses of both the direct and the carbon copy recipients of the message. If you don't want to send carbon copies of your message, leave the CC field blank.

Specify Subject

You must fill in the *Subject* field. To move to this field, use the [Tab] key. Once your cursor is in the field, type a succinct one-line description of your message. Be courteous and wise; use this field to describe the contents of your message briefly but clearly. The subject of our sample message is "Committee on Committee's next meeting."

Type the Message

The biggest field (just below the Subject field) is the *Message* field. This is where you will enter the body of your message. To move the cursor to this field, use the [Tab] key. Once your cursor is in the message field, type your message. Editing text here is easy. Use your keyboard's [←] [→] [↑] [↓] keys to move around in the text, and use the [Backspace] and [Del] keys to delete text. (You can also use the WordStar control key sequences for cursor movement.) POPmail uses a simple version of a word processor and has some limitations. For example, you cannot make text bold or underlined. However, the text you type will automatically word-wrap as you type, so you do not need to press the [Enter] key at the end of each line.

Send Mail

When you are done typing your message, press the [F10] key to return to the main menu, and the *Send* menu item will appear highlighted. To send your message, press the [Enter] key and the message will be sent to the recipients you specified in the *To* and *CC* fields. When the message has been sent to the mail server, you will see a confirmation dialog box on your screen.

Sending Mail to a Group

Sending a POPmail message to a committee is as easy as sending mail to one person. With POPmail you can keep group lists. A group is simply a list of recipients (E-mail addresses) that have been given a one-word alias (identifier). For example, you could create a group called Marx composed of these three E-mail addresses:

harpo@squeezebox.circus.umn.edu
groucho@cigarbox.opera.umn.edu
chico@bandbox.hollywood.umn.edu

Figure 3: Outgoing Message

```
  Send    Fetch    Print    Group    MakeGroup    Options    Quit
Date:  Wed, 28 Mar 90  17:09 CST                Outgoing Mail
From:  Jean E. Chen     <jean@mailbox.micro.umn.edu>

| To:      | kathy@boombox.micro.umn.edu,  ellen@UMNMOR.BITNET |
| cc:      |                                                   |
| Subject: | Committee on Committee's next meeting.            |

The Committee on Committees will meet on January 23rd at the usual
place.  We'll start promptly at 2 PM.  Hope you can make it.

If you have any new items for the agenda, please send them to me via
e-mail as soon as possible.

- Jean.

<<F3 = Previous Message>>   <<F4 = Next Message>>   <<F10 = Menu>>
```

To create a group alias name, invoke the *MakeGroup* menu item from the menu bar. An edit box will appear to allow you to enter the desired alias name and the recipients you want to include in the group. When you define a Group, you must type the group name first. In our example, shown in Figure 4, *committee1* and *committee2* are group names. The group names are followed by the E-mail address of the members of the group. Within a group, everything is separated by one or more spaces (commas are optional). When you are finished entering the addresses for one group, press the Enter key *twice* before entering information to define another group. (Groups must be separated by a blank line.)

Using a Predefined Group

To send mail to a group you have already created, select the *Group* menu item from the menu bar. A dialog box will appear, displaying a list of all your group alias names, as shown in Figure 5. Select the group name by using your keyboard's ↑ ↓ keys until the desired group name becomes highlighted. Then press the Enter key. POPmail's *To* field will be filled in automatically with the full E-mail address of each member of the group; the group alias name itself does not appear in the *To* field.

Fetching Incoming Mail

Your incoming mail is held for you at the post-office server until you fetch it. When you fetch incoming mail, each message is moved from the mail server into your POPmail database. Incoming messages remain in your POPmail database until you explicitly discard them.

To retrieve your new messages, invoke *Fetch* from the menu. POPmail will present you with a dialog box to inform you whether or not you have mail. Then POPmail will display the first new message in an Incoming Message Window.

An important difference between the incoming message window (shown in Figure 6) and the outgoing message window (see Figure 3) is that the incoming message window includes a Reply feature. The reply feature allows you to respond to an incoming message quickly, since POPmail automatically takes the *Subject* and *To* field information from the original message and fills it into an outgoing message window for your reply. When you are finished typing your reply, invoke Send from the menu.

Figure 4: Making Groups

```
Edit Groups -- Press <F10> when done

committee1:  ellen@UMNMOR.BITNET   kathy@boombox.micro.umn.edu

committee2:  carlson@applelink.apple.com   yen@vx.acs.umn.edu
             ann@UMINN1.BITNET

nick         inei%cs.glasgow.ac.uk@NSFNET-RELAY.AC.UK
```

Figure 5: Use a Group Name

Printing, And More

If you are connected to a printer, you can print the message by invoking *Print* from the menu bar. To delete the message shown on your screen, select *Discard* from the menu bar. If you don't delete the message, it will

Figure 6: Incoming Message

```
Reply   Fetch   Print   Compose   Discard   Options   Quit

Date:  Wed, 28 Mar 90  17:09 CST
From:  Jean E. Chen     <jean@mailbox.micro.umn.edu>

To:       kathy@boombox.micro.umn.edu,  ellen@UMNMOR.BITNET
cc:
Subject:  Committee on Committee's next meeting.

The Committee on Committees will meet on January 23rd at the usual
place.  We'll start promptly at 2 PM.

Hope you can make it.  If you have any new items for the agenda,
please send them to me via e-mail as soon as possible.

- Jean.

<<F3 = Previous Message>>  <<F4 = Next Message>>  <<F10 = Menu>>
```

remain in the database. To look at the next message in the database, press the [F4] key.

Paging through the Database

Messages are stored in the database in the order they were received. Each new message is stacked on top of its predecessor, just like file cards on a stack. To move backwards in the database to view the previous message, press the [F3] key. To move to the next message in the stack, press the [F4] key.

Hardware and Other Requirements

POPmail runs under PC/MS-DOS version 2.0 or greater and requires 640K of RAM and a hardware connection to the campus backbone network. In addition, you need a network interface card installed in your microcomputer. POPmail uses Clarkson College's packet drivers. These drivers support nine network adapter cards, including the IBM TokenRing and 3COM-3C501, -3C503, -3C505, and -3C523 Ethernet cards. These are the same packet drivers used by *Telnet* and *tn3270*, so you may already have these drivers installed on your machine.

Since there are many details to be considered in establishing a connection to the campus backbone network, we strongly advise that you contact the Microcomputer HelpLine before you plan your network or purchase any hardware.

Conclusion

POPmail is designed to provide networked microcomputer users with an easy to use E-mail system with wide connectivity. While other Post Office Protocol software for the PC already exists, POPmail/PC's user interface mirrors the Macintosh POPmail user interface. This consistency helps simplify training for departments that have both Macintoshes and IBM-compatibles.

If you want to discuss POPmail (or other E-mail systems), call or visit the Microcomputer HelpLine. When you visit the HelpLine, our consultants can demonstrate POPmail for you. If your department decides to run POPmail, we can help you set things up.

☛ *NEWS CONTINUED FROM.....PAGE 93*

IBM and Zenith Microcomputers handout that is available in the Microcomputer HelpLine in 125 Shepherd Labs and in bins outside the HelpLine.

SCSI Adapter

Both the Model 65 SX and the Model 80 386 come with a built-in SCSI (Small Computer System Interface) adapter that lets you attach up to seven internal/external SCSI devices at once. You can add on three more SCSI adapters; in all you can attach up to 28 SCSI devices.

Features	65 SX	80 386
Floor standing	yes	yes
Microprocessor	80386SX	80386
Speed	16MHz	20MHz*
Wait States	0-2	1
Optional math co-processor	yes	yes
MicroChannel expansion card bus	yes	yes
Available expansion slots	seven 16-bit	four 16-bit three 32-bit
101 key keyboard with 6' cable	yes	yes
Power supply	auto-sense/switch	225-watt
1 year warranty	yes	yes
Memory		
Standard memory (RAM)	2MB (100 ns)	2MB (80 ns)
Maximum RAM on system board	8MB	4MB
Maximum memory (RAM)	16MB	16MB
Storage		
Standard 3.5-inch floppy disk	1.44MB	1.44MB
Maximum floppy disks	2	2
Maximum SCSI adapters	4	4
Standard hard drive	60MB 23 ms 120MB 23 ms	120MB 23 ms 320MB 12.5 ms
Integrated functions		
- VGA display port	yes	yes
- serial port	yes	yes
- parallel port	yes	yes
- mouse port	yes	yes
- keyboard port	yes	yes
- clock/calendar	yes	yes
- diskette controller	yes	yes
- SCSI adapter	yes	yes

*applies to Models 8580-121 and 8580-321 only

Part	IBM PS/2s	Book Center Price*
	IBM Microcomputers come with PC-DOS 4.0	
65 SX	80386 SX: 16MHz, 2MB RAM	
8565-061	60MB hard disk	$ 3310
8565-121	120MB hard disk	3735
80 386	20MHz, 2MB RAM @ 80 ns	
8580-121	120MB hard disk	$ 4645
8580-321	320MB hard disk	6100

*Note: Configurations do not include a monitor. ◆

Connections

E-Mail: Internet ↔ Compuserve

Many of our readers use electronic mail on the University's Internet to correspond with colleagues on campus and around the world. There are other electronic networking systems that also allow users to communicate via E-mail. Some of these services include Compuserve, Genie, and MCI-Mail. Links are being established that allow users on one network to communicate with users on another network, such as BITNET. Recently it became possible to exchange E-mail between the Internet and Compuserve. You may have colleagues in industry who have Compuserve accounts. In addition, many hardware and software vendors (such as Borland, Novell, and Microsoft) have Compuserve Accounts for product support.

From Internet to Compuserve

To send mail (without charge) from the Internet to Compuserve, an Internet user needs to know the Compuserve User ID of the person to whom you wish to send a message. Compuserve User ID's are of the form

```
nnnnn,nnnn
```

where n is a digit from 0 to 9. For example, a Compuserve User ID might be 12345,6789. To send a message to a Compuserve User, change the comma in the Compuserve User ID to a period and then append

```
@compuserve.com
```

For example, to send a message to User ID 12345,6789 you would address your message to

```
12345.6789@compuserve.com
```

From Compuserve to Internet

A Compuserve user can send mail to an Internet user by prefacing the Internet address with

```
>Internet:
```

For example, to send a message from Compuserve to

```
frank@boombox.micro.umn.edu
```

a Compuserve subscriber would address the message to

```
>Internet:frank@boombox.micro.umn.edu
```

◆

Wanted: Test Sites for Mail Server

The Microcomputer and Workstation Networks Center has developed a mail server called *MailStop*. MailStop acts as a POP server and works with POPmail for the Macintosh and IBM-compatibles. If you are familiar with POPmail, you know that you can use POPmail to send Internet and BITNET mail on campus and around the world.

To run POPmail you need a POP server to hold incoming mail until POPmail users fetch their mail. The POP server is typically a Unix machine. Because Unix is a complex system, most departments are reluctant to run their own Unix systems just to have a POPmail server. One alternative is to pay to use one of the ACS mainframes as a POP server. MailStop is another alternative.

MailStop is a program that runs in the background on a Macintosh connected to the network. Since MailStop runs under the Mac's operating system, you do not need to know anything about Unix to configure and run MailStop. While MailStop does not require AppleShare, we expect that most departments will run MailStop on Macs that they have already dedicated to acting as AppleShare file servers.

Although we have tested MailStop extensively, we need a few departments that are willing to help in testing before we pronounce MailStop a finished product and release it to the world. To participate in MailStop testing, you need to have a Macintosh to run MailStop (this can be a Mac that is already running AppleShare), a Mac or PC to run POPmail, and a campus interwork connection. If you are willing to help us test MailStop, send E-mail to

```
popmail@boombox.micro.umn.edu
```

with a departmental contact name and phone number or call the Microcomputer Center's office at 625-1300 to leave a message. ◆

Site License Forum

Sandra Welch, Forum Coordinator, 625-9091

In order to provide a forum for all University microcomputer users and make it easier to take advantage of licenses and discounts that the University offers, the Microcomputer Newsletter provides a forum for people who: 1) want access to licensed or discount packages that the University presently holds; 2) want to find participants for a license or discount package they already hold; 3) have a potential license or discount and want to survey the University community for interested participants.

AT&T System V Users

AT&T has changed their method of operation for the Master AT&T Unix Site License. Beginning with the upgrade to Release 4.0, those who need their system source code upgraded to 4.0, must pay for each source code upgrade. This new method also means that if any related Unix-based software requires you to have a site license for Unix System V, Release 4.0, you must purchase the source code for the 4.0 upgrade. If you require the 4.0 source upgrade, please contact Sandra Welch at 625-9091 for more information.

Address Finder


Address Finder

Recently, Academic Computing Services (ACS) began offering an on-line campus directory. The on-line directory is a computerized version of the campus phone book. Currently the directory server only contains the student part of the campus directory. ACS offers terminal-based access to the directory server; you can connect to the ACS VAX (`vx.acs.umn.edu`) or Encore (`ux.acs.umn.edu`) and log in to the account named *lookup*. Using lookup you can type in queries and see the directory server's response. (See the April 1990 issue of the *ACS Newsletter* for details.)

The Microcomputer Center has developed a HyperCard stack called *Address Finder* to allow Macintosh users to access the directory servers at other universities as well as the directory server at ACS. With Address Finder, Mac users connected to the campus network can query a directory server, save the server's response in the Address Finder stack for future reference, and copy and paste the response into other Macintosh applications. Since Electronic-mail (E-mail) addresses are included in the directory server's database, it is possible to look up some people's E-mail address (as well as phone numbers and postal addresses) over the network. The Microcomputer Center is in the process of developing a similar package for networked IBM-compatible users.

CSO Servers and Clients

The directory server software ACS is running was written by Steven Dorner at the University of Illinois Champaign-Urbana. While ACS calls this software *Lookup*, Steve Dorner calls his software the CSO Nameserver, and we use that name too. The CSO Nameserver software enables universities to provide on-line directory service. Steve Dorner made the software freely available; it is cheap and easy to run. Currently, the CSO software is the de facto standard for electronic directories.

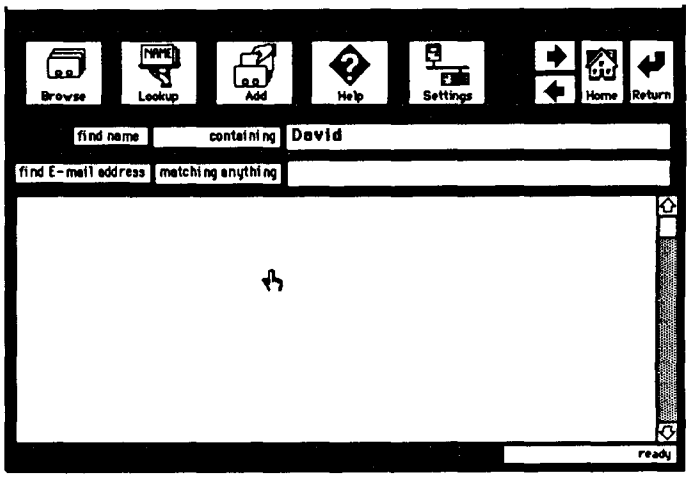
Since most schools are connected to the Internet you can use Address Finder to query servers at other institutions. For example, you can use Address Finder to locate Steve Dorner's E-mail address in Illinois. If you know that the CSO server for the University of Illinois is located at `garcon.cso.uiuc.edu`, you can use Address Finder to look up all entries for "Dorner." Likewise, if you have a colleague at Universite Laval in Quebec, you can query their server at `gel.ulaval.ca`.

Some readers may wonder why they need to know the network address of servers at other institutions... wouldn't it be better if this was handled automatically? As usual, the perceptive readers are right; it *would* be better to handle this automatically and everyone thinks this is a good idea. The problem is that the software to do this is not widely available yet. Once software that supports the X.400 and X.500 mail and directory standards becomes widely available, hierarchical searches of servers at other institutions will be possible.

Using Address Finder

To use Address Finder, you need a Macintosh with a campus network connection, HyperCard 1.2.2 or later, and the MacTCP network driver software. Address Finder works well on a 1MB Mac Plus, but Mac users running in color or using other software may need more memory. (Both Address Finder and MacTCP are available, without charge, from the Microcomputer Center.)

Figure 1: an Address Finder Query



After you have copied the MacTCP and Address Finder software onto your Mac and configured the MacTCP network drivers, you need to tell Address Finder the network address and port number of the server you wish to query. ACS's CSO Nameserver runs on:

`ux.acs.umn.edu` at port 105

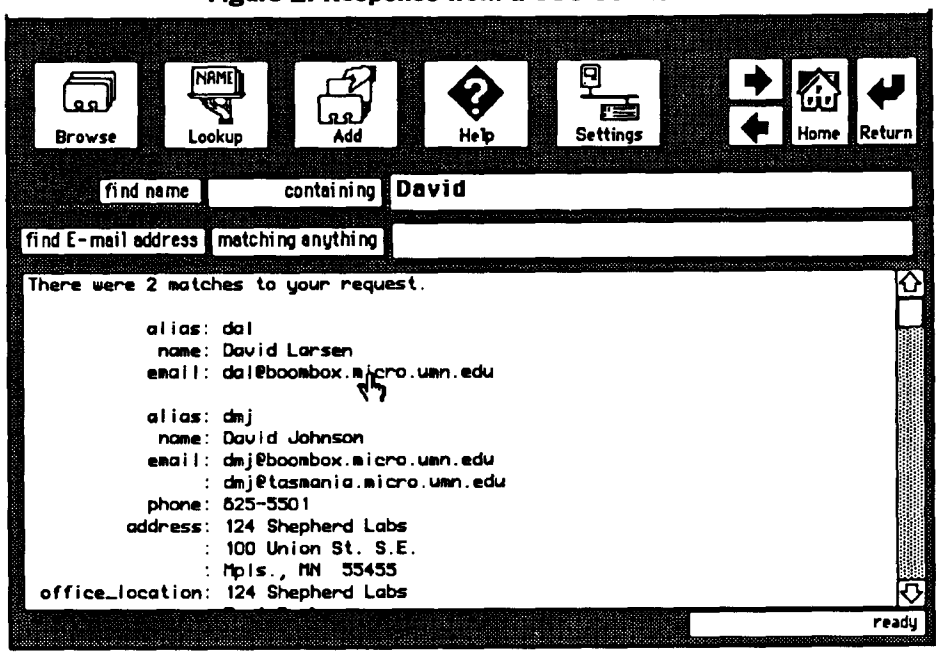
We are in the process of compiling a list of CSO servers at other institutions; two that you may be interested in are Universite Laval at `gel.ulaval.ca` at port 105 and Purdue at `zoo.ecn.purdue.edu` at port 780. Once you have set the CSO server and port entries in Address Finder's settings card, you can query the server as shown in Figure 1.

To form a query, enter the name of the person you want to find in the text field to the right of *find name*; in Figure 1 that name is David. CSO servers can perform searches for entries that *exactly match*, *contain*, or *start with* the name you entered. To tell Address Finder which options to use when searching for a name, use the popup menu to the right of *find name*. In Figure 1, we have created a query that says: find name *containing David* and find E-mail address *matching anything*. The *matching anything* option tells Address Finder not to try matching an E-mail address.

Once you have formed the query, you can send it to the CSO server by clicking on the button marked *Lookup*. The results that are returned by the server are displayed on the card; Figure 2 is an example of one transaction.

Because the Address Finder stack has provisions for saving entries as separate cards in the stack, you don't have to query the server every time you want to find an address. Clicking on the *Add* button stores the results returned by the CSO server on separate cards, as shown in Figure 3. You can also use the *Add* button to create your own address cards so you can use Address Finder as a computerized address book.

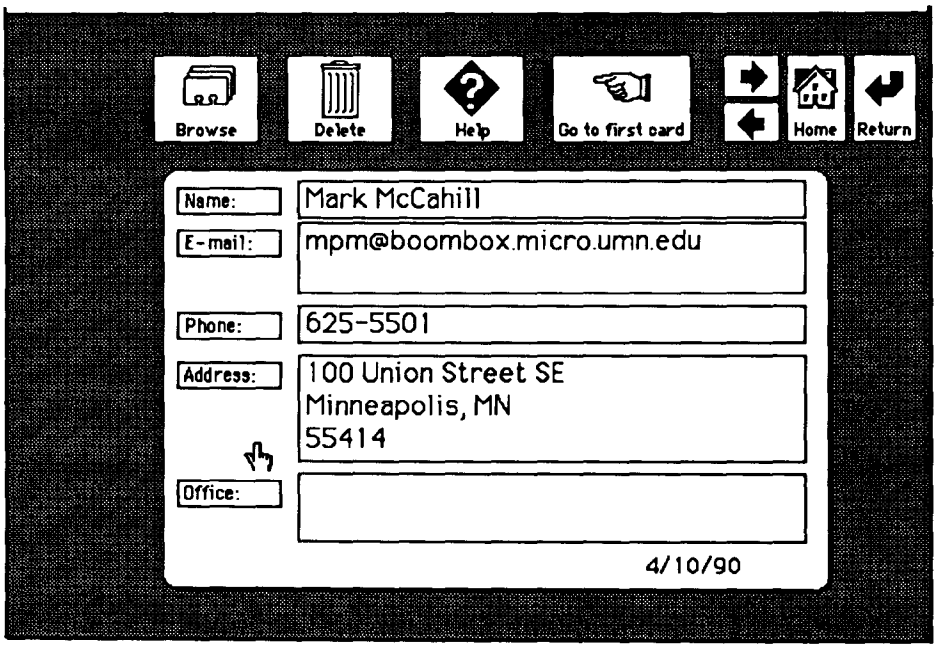
Figure 2: Response from a CSO Server



Obtaining the Software

To get a copy of the software and documentation, you can either stop by the Microcomputer HelpLine with a blank disk, or you can copy the software over the network. If you are connected to the campus AppleTalk Internet you can copy Address Finder and MacTCP from the Mac Information Server located in the *MicroCenter* zone (look in the *Communications* folder on the volume called *information*). You can also copy the software via anonymous ftp from `boombox.micro.umn.edu`. Look for the software in the `/pub/addfinder` directory. You will need *Stuffit* 1.5 and *Binhex* to reconstitute the Address Finder stack into a Macintosh-usable form. Both programs are available from the Mac Information Server (look in the *Utilities* folder on the volume called *information*).

Figure 3: Save a Response in Address Finder



The University has a site license for Apple's MacTCP network software drivers that permits us to distribute free copies to the University community. Three other public domain network applications for the Mac use the MacTCP drivers: NCSA Telnet version 2.3, POPmail, and HyperFTP. If you use these applications you may already have the MacTCP drivers in your System Folder.

Conclusion

You can use the Address Finder stack to access CSO Nameservers located on campus and elsewhere. Address Finder version 1.0 is now available from the Microcomputer and Workstation Networks Center free of charge.

If you have comments, suggestions, or bug reports, you can contact the Address Finder development team by sending E-mail to

`addfinder@boombox.micro.umn.edu`

Ma Micro Notes

● GrafPlus: Screen Dump Utility

Although PC/MS-DOS includes a graphics screen dump utility called GRAPHICS.COM, this utility supports only IBM printers and CGA video display adapters. GrafPlus v 5.11, developed by Jewell Technologies, is a graphics screen dump utility that lets you print text and graphics screen images from a VGA display adapter. You can use GrafPlus on any IBM compatible computer that has a graphics card, including CGA, EGA, VGA, or an IBM monochrome adapter, including Hercules monochrome or color graphics card and Tecmar Graphics Master card. GrafPlus also supports most laser, inkjet, and dot matrix printers; Appendix A of its manual lists over 100 supported printers.

Printing

In order to print the image on your screen, GrafPlus sends a bit-mapped image of the screen's contents to your printer. Depending on the type of printer you have, GrafPlus can print the images it creates in color or black and white. To customize your printed output, a program called EditGraf is included in the GrafPlus package. With EditGraf, you can change the size of the printed image, place the image at a specific location on the page, set the gray scale, change the printer interface, or save the printed image to a file on your disk. You can also use EditGraf to edit an existing printer driver if GrafPlus doesn't support your printer (and your printer doesn't emulate a printer that is supported). You can get help editing a printer driver from the GrafPlus technical support people.

Figure 1: Text Screen Dump

```
C:\>dir

 Volume in drive C is INSIGNIA
 Directory of  C:\

COMMAND  COM    25276   2-03-88   2:31p
DOS          <DIR>      2-08-88   7:45p
INSIGNIA     <DIR>      2-08-88   7:51p
AUTOEXEC BAT      137   3-17-88   3:53p
CONFIG   SYS       55   3-17-88   3:53p
        5 File(s)    122880 bytes free

C:\>_
```

Using GrafPlus

GrafPlus is a TSR (Terminate and Stay Resident) program. To activate a TSR you usually press two keys to ask it to perform its special function, regardless of what software you are using at the time. Some TSRs let you choose your own key combinations. GraphPlus doesn't; it only lets you use the Shift PrtSc key combination. Whenever you use these keys, GraphPlus sends the contents of your screen to your printer.

You can launch GrafPlus automatically when you start your computer by inserting a GrafPlus command line in your AUTOEXEC.BAT file. (The GrafPlus manual can step you through this procedure.) To be sure GrafPlus claims its chunk of RAM (random access memory), you must start it *before* you start any other applications.

The first time you use GrafPlus you will be presented with a sequence of menus asking for information about your computer configuration. You will also be asked to choose from several options, such as color or black-and-white printing or reverse printing (print the screen image on a black background as shown in Figure 1); using extended clipping (omit menu bars, palettes, etc. from the printed image); and printing in portrait or landscape mode. Once you've assigned these options, you can save them and return to the DOS prompt.

Now whenever you want a screen dump, simply use the Shift PrtSc key combination. GrafPlus will momentarily freeze your screen while it scans the screen image and sends the image to your printer. When the printer has received the scanned image, your computer will beep and return to active mode. You can pick up your printed output between 10 seconds and 2 minutes later, depending on the complexity of the image.

Memory Considerations

Since GrafPlus uses 15-25K of your computer's RAM, you may want to disable GrafPlus to increase the RAM that is available for other applications. You can do this without rebooting your computer by using RMGRAF, a utility that is included in the GrafPlus package. (When you disable GrafPlus, it no longer owns the Shift PrtSc key combnation.) To launch RMGRAF, however, you must exit from your current program *first.*

Conclusion

We tested GraphPlus on a PS/2 Model 70 and two printers: the Hewlett-Packard DeskJet Plus and the HP LaserJet IIP. With GrafPlus we were able to print Windows screens, Lotus screens, Paint screens and simple DOS text screens (such as Figure 1) in a variety of configurations. After some experimenting with settings in EditGraf, such as size and location on the page, we generated satisfactory output for all our tests.

GrafPlus is available for your inspection in the Microcomputer HelpLine and can be purchased as a *special order* through the Electronics Desk; its current list price is $49.95 plus $4 shipping. GrafPlus is manufactured by Jewell Technologies, Inc., 4740 44th Ave. SW, Suite 203, Seattle, Washington 98116. ◆

● MacWrite II: Changing Defaults

Many MacWrite II users want to change the default (initial) settings. MacWrite II's default settings are the formats, such as font and style, that are automatically chosen every time you open a new document. To change MacWrite II's default settings you must create a special Stationery document named *MacWrite II Options*. This document will contain the formatting options you want and *must* be named MacWrite II Options. MacWrite II calls this document *automatic stationery*.

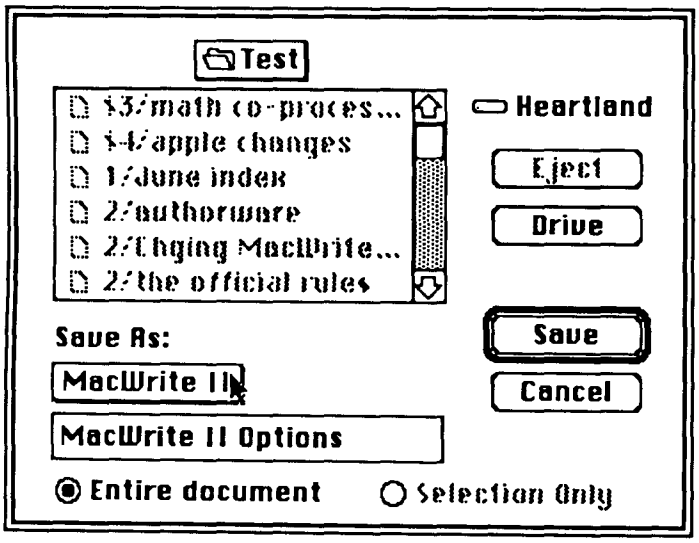
Creating "Stationery"

Follow the steps below if you always want the same settings to appear in your new MacWrite II documents.

1. Go to the *File* menu and open a *new* document. Select the font and other settings (size, style, margins, etc.) that you want to have as your new defaults.

2. Choose *Save As* from the *File* menu. As shown in Figure 1, click on the MacWrite II button. When you click on this button, a pop-up menu with your saving options will appear. From this menu select *MacWrite II Stationery*. Name the document *MacWrite II Options* as shown in Figure 1. Although the title of the document you have open will not change, a special stationery document will be saved to your disk.

Figure 1: Save As MacWrite II Stationery



3. Your final step is to drag the document named *MacWrite II Options* into your *System Folder* so MacWrite II can automatically find it whenever you start up MacWrite II.

Overriding the Stationery Document

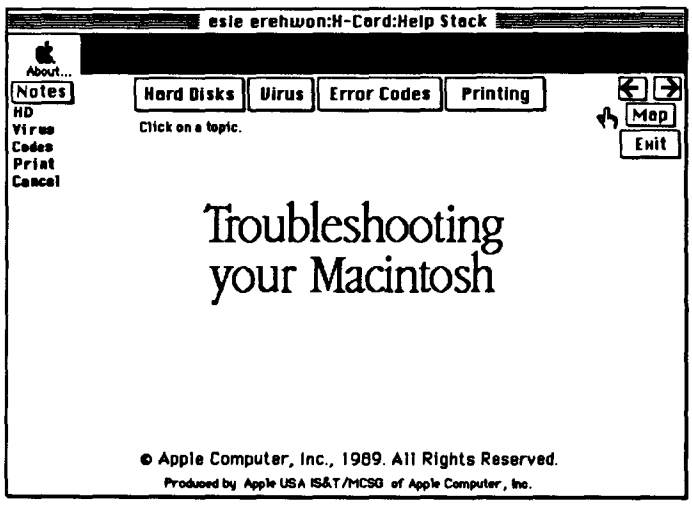
Whenever you want to open a new document with the standard MacWrite II defaults (rather than with your special settings), press the Option button when you select *New* from the *File* menu. To get rid of your automatic stationery, remove it from the System Folder or give it a different name. ◆

● Apple Help Stack

Apple recently released a free HyperCard stack called *Help*. This stack has basic troubleshooting information that can help you solve common problems, and it is easy to use. Like all HyperCard stacks, you just need to know how to click on buttons to move around in the stack. HyperCard runs on Macs with at least 1MB of memory. The Help stack is designed to run from a hard disk.

When you start up the Help stack you see the card shown in Figure 1. This card has several buttons; for example, if you want to get information on viruses, click on the button called *Virus*. To get an overview of all the topics covered in the Help stack, click on the button called *Map*. To close the Help stack, click on the *Exit* button. The ambitious can even use the *Notes* button and an *Add Text* button to add their own hard-earned information.

Figure 1: Opening Help Card



The Help Stack is available on the Mac Information Server. Look on the file server called *Mac Information* in the *MicroCenter* zone. The stack is in the folder called *Support Tools* on the *information* volume. ◆

Training Resources

The Microcomputer Center owns training packages for many popular software programs. These training packages are available to University of Minnesota departments and current employees and students. There is no fee for using these

packages, and you may check them out for 48 hours. However, before you can check them out, you must sign a *Usage Agreement* and leave your University of Minnesota ID with us. We will return your ID when you return the training materials. To use these materials you must supply your own equipment, such as computer and cassette player. To reserve or check out materials, phone 625-1300 or stop in room 132 Shepherd Labs, Monday-Friday, 8:00 am to noon and 1:00 to 4:30 pm.

Generally the PC/MS-DOS (IBM and compatible personal computers) disks are available on 5.25-inch 360K and 3.5-inch 720K disks; the Macintosh disks are 800K.

New Material

We recently added the 7th and 8th tapes in Personal Training Systems' audio training series for Microsoft Excel version 2.2 on the Macintosh. Both packages are for experienced Excel users. *System Requirements:* a Macintosh with two drives, a printer, and your own copy of Excel version 2.2.

Excel: XL7 - Advanced Macros.
Training Objectives: Learn to build macro-driven applications by using input statements, trapping errors and designing counting loops, creating input forms and subroutines, and mastering many other macro skills.

Here are the contents of XL7's seven lessons. *Lesson 1 - Macro-driven Applications:* Allow inexperienced users to take advantage of the power of Excel. *Lesson 2 - Assisting the User:* Create a Help Screen; Turn Off Gridlines; Assign the Name Top to the First Cell. *Lesson 3 - Creating Auto Macros:* Auto_Open Macros; Auto_Close Macros; Combine Typed-in and Recorded Macro Commands; Use lower-case letters when typing in commands. *Lesson 4 - Presenting Information:* Use an Alert Box; Display One Button; Display Two Buttons; Use an IF Test; Follow an Input Command with an IF Text. *Lesson 5 - Building Efficient Macros:* Use a GOTO Command; Call a Macro by Name; Test Numbers for Reasonableness. *Lesson 6 - Checking for Errors:* Correct Unreasonable Numbers. *Lesson 7 - Debugging Macros:* Avoid Entering Unacceptable Commands; Avoid Entering Unacceptable Names; Locate Errors in Logic; Include the Activate Command.

Excel: XL8 - Macros for 2.2.
Training Objectives: Master the new macro features in 2.2 by learning to use function macros, create custom dialog boxes, use the dialog editor, and customize menus.

Here are the contents of XL8's eight lessons. *Lesson 1- Overview:* Excel 2.2's Macro Instructions Allow...; Open Macrosheet Automatically. *Lesson 2 - Adding Commands:* Add Command to Pull-Down Menu; Rename Command When Selected; Make Checkmark Appear; Remove Custom Command; Automatically Remove Custom Command. *Lesson 3 - Adding a Menu:* Same Shortcut for Two Commands; Add Custom Pull-Down Menus; Create Auto_Close Macro. *Lesson 4 - Creating Menu Bars:* Three Instructions to Create Menu Bar; Show.Bar Instruction. *Lesson 5 - Viewing Dialog Boxes:* Two Areas Must Exist. *Lesson 6 - Using the Editor:* Enter Hourly Rate Dialog Box; Look at Dialog Box; Sort Records Dialog Box; Before Dialog Box Can Be Displayed; Make Dialog Box Appear; Selections Made in Dialog Box. *Lesson 7 - Making Selections:* Edit Boxes Can Appear Empty; Edit Boxes Contain Responses; After Displaying Dialog Box. *Lesson 8 - Function Macros* - Create Function Macros.

Book Center Notes

These offers are made to University departments, employees, and students; the regular Microcomputer Discount Program rules of eligibility apply. If you have questions about availability, phone the Electronics Desk at 625-3854.

● IBM Model 50Z Price Drop

IBM recently reduced the price of the PS/2 Model 50Z, a desktop computer with an 80286 microprocessor running at 10MHz with zero wait states for memory access. The 50Z has a socket for an optional 80287/10 math coprocessor, has three 16-bit MicroChannel expansion slots, one 25-pin serial port, one parallel port, one mouse port, a detachable 12-function key keyboard, a 94-watt international power supply, PC-DOS 4.0, and a one-year warranty.

Memory

The 50Z comes with 1MB of RAM on the system board. To expand memory to 2MB, you replace the 1MB chip with a 2MB chip. If you add two memory expansion boards, you can expand the 50Z's memory to a maximum of 16MB. IBM's memory boards have sockets for up to four memory module kits. You can add either 512K or 2MB memory module kits to the same board.

Monitors

Please note: although the 50Z comes with a built-in VGA display adapter, it does not come with a monitor.

Storage

The 50Z comes standard with two drives: one 3.5-inch 1.44MB floppy disk drive and a hard drive. One configuration includes a 30MB hard disk drive that has an average access time of 30 ms (milliseconds). The other configuration has a 60MB hard disk drive with an average access

time of 27 ms. The prices for both configurations are shown in the table below. ◆

Part		Book Center Price
PS/2 Model 50Z		
8550-031	30MB hard disk (previously $2070)	$1855
8550-061	60MB hard disk (previously $2310)	$2220

● Macintosh Price Changes

The Book Center has new prices for some Macintosh products.

➥ Apple CD-ROM Player

Apple recently lowered the price of their CD-ROM player, a device that enables a Mac with a SCSI port to access information stored on CD-ROMs (compact disk, read only memory). The Book Center's new price is $630 (previously the discount price was $835).

A CD ROM acts like a read-only hard disk that can hold thousands of pages of text, pictures, and sounds. All the volumes on the MicroCenter's server called *Mac Information CD-ROMs* are CD-ROMs. The Microcomputer HelpLine has a CD-ROM player available for your inspection.

To use the player, you must also buy a SCSI cable. You can connect up to seven SCSI devices to a Mac; which cable you need to buy depends on what you have already plugged into your SCSI port. The Microcomputer HelpLine can help you determine what cables to buy.

➥ 20MB Hard Disks

Rodime's 20MB external hard disk is now $400 (down from $425). Apple's 20MB external hard disk is now $450 (down from $575). Both hard disks come with a SCSI system cable and SCSI terminator (you cannot use this terminator with the new Mac IIfx).

➥ Mac Plus

The Mac Plus that comes bundled with Apple's 20MB hard disk is now $1395 (down from $1545). ◆

● LaserJet Series II Price Drop

The price of the Hewlett-Packard LaserJet Series II printer dropped recently to $1250 (down from $1560). The full product description is in the *Printers and other Peripherals* handout that is available in the Microcomputer HelpLine and in bins outside 125 Shepherd Labs. ◆

● New Math Co-Processor Prices

The Book Center sells Intel numeric (math) co-processor chips. These math co-processors can work along with a Microcomputer's CPU to increase the speed and precision of arithmetic, logarithmic, and trigonometric functions. Generally co-processors are purchased separately and must be installed into a special socket on the microcomputer's main system board.

Which math co-processor you need depends on your machine's CPU and speed. The table below tells you which co-processor works with which machines. For complete machine descriptions see the *IBM and Zenith Microcomputers* handout.

Since all software cannot take advantage of the computational abilities of a co-processor, make sure that your software can use a co-processor before you buy one. ◆

CPU	Clock Speed	Math Co-proc.	Micro.	Book Center Price Old	New
80C88	4.77/8	8087-2	SupersPort	$140	$150
80C286	6/12	287A12	SupersPort 286 SupersPort 286e	$325	$305
80286	8	80287-8	Z-286 LP/8	$220	$240
	10	80287-10	PS/2 30/286 PS/2 60 PS/2 50Z	255	280
	12	80287-10	Z-248/12 Z-286 LP/12	255	280
80386 SX	8/16	80387SX	SupersPort SX	$365	$415
	16	80387SX	PS/2 55 SX Z-386 SX PS/2 65 SX	365	415
80386	16	387DX-16	PS/2 70 E61 Z-386/16	$375	$435
	10/20	387DX-20	TurbosPort 386e	460	510
	20	387DX-20	PS/2 7P0 386 PS/2 70 121	460	510
	25	387DX-25	PS/2 70 A21 Z-386/25	580	635
	33	387DX-33	Z-386/33	630	735

● IT Tech Fair Specials

The IT Tech Fair is an event held during IT Week; it is a joint venture between the Plumb Bob Honorary Society and the University Bookstores. Watch the *Minnesota Daily* for more information about the IT Tech Fair. The specials mentioned below are available for a limited time.

These specials end May 15th.

For more information on the products listed here see the following Microcomputer Center handouts: ***Printers and other peripherals, IBM and Zenith Microcomputers,*** and *Apple Macintosh Computers, Printers, and Peripherals.*

➥ HP LaserJet IIP Special

There are three reasons to buy the HP LaserJet IIP during the IT Tech Fair: (1) immediate delivery; (2) an additional $25 off the normal discount price; and (3) if you buy a microcomputer when you buy the IIP, you also get a free parallel printer cable to connect the IIP to your PC.

HP Laser Printer	Normal Discount	Tech Fair Special
LaserJet IIP	$ 870	$ 845

➥ Zenith May Send You to Europe

During the IT Tech Fair you can get information on how you can enter Zenith's contest to win a trip to Europe.

➥ Zenith Z-286 LP/12 Special

If you buy the Z-286 LP/12 20MB or 40MB hard disk configuration that comes with Zenith's color FTM (flat tension mask) monitor, you can save money in one of two ways. Use the special card that comes in your mouse box to apply against an order for a Raleigh 18 speed all-terrain mountain bike. Or, turn the special card into the Book Center and receive a $200 rebate or discount from the Book Center. (You must give the Book Center the special card in order to get the discount or the rebate.)

Zenith Z-286 LP/12	Normal Discount	Tech Fair Special*
ZMF-212-20 with -1492** monitor	$ 1950	$ 1750
ZMF-212-40 with -1492** monitor	$ 2240	$ 2040

* special includes Word and Excel from Microsoft.
** the Zenith ZCM-1490-Z monitor has been replaced by the -1492; the difference between the two monitors is cosmetic.

➥ Zenith's *Race to the Finish*

Those who buy the Z-286 LP/12 special described above will also be eligible to win a Raleigh 18 speed all-terrain mountain bike. The drawing will be held during IT Week and will take place at the tent that will be set up on Northrop mall. Nationwide, Zenith will give away 50 bikes, 500 fanny packs, and 1000 water bottles.

➥ Z-386 SX

If you buy the Z-386 SX 40MB or 80MB hard disk configuration that comes with Zenith's color FTM (flat tension mask) monitor, you can also save $200 (but you do not get a chance to win a bike from Zenith.)

Zenith Z-386	Normal Discount	Tech Fair Special*
ZMF-316-X4 with -1492** monitor	$ 2625	$ 2425
ZMF-316-X8 with -1492** monitor	$ 3015	$ 2815

* special includes Word and Excel from Microsoft.
** the Zenith ZCM-1490-Z monitor has been replaced by the -1492; the difference between the two monitors is cosmetic.

➥ Delivery on Zeniths

Generally these Zenith specials will not be available for immediate delivery. However, the machines will be available within a few weeks.

➥ Apple Specials

The dates you can take advantage of the two Apple specials described below are April 30 to May 15. We will deliver 40 machines a day on a cash-and-carry basis *while supplies last.*

➥ Macintosh SE

While supplies last, if you buy a Mac SE with Apple's built-in hard disk during the IT Tech Fair, you can save $245 or $280. The SEs sold at the Book Center include virus protection software, MacDraw II, HyperCard, MacWrite II, and Apple's standard keyboard. To substitute Microsoft Word for MacWrite II, add $50 to the price. To substitute Claris CAD for MacDraw II, add $35 to the price. To substitute Apple's enhanced keyboard for the standard keyboard, add $60 to the price.

Macintosh SE	Normal Discount	Tech Fair Special
1MB RAM, 20MB hard disk	$ 1895	$ 1650
2MB RAM, 40MB hard disk	$ 2275	$ 1995

➥ HP DeskWriter Special

While supplies last, the Book Center expects to have the original DeskWriter and the DeskWriter with an AppleTalk interface available for immediate delivery. In addition, if you buy a Macintosh when you purchase either DeskWriter, you get $25 off the DeskWriter's price.

HP Printer	Normal Discount	*Price if You Buy a Mac Tech Fair Special*
DeskWriter	$ 685	$ 660
DeskWriter +AppleTalk	$ 725	$ 700

➥ Apple ImageWriter

While supplies last, if you buy a Mac during the Tech Fair special you can also buy an ImageWriter and save $170.

Dot-Matrix Printer	*Price if You Buy a Mac Normal Discount	Tech Fair Special*
ImageWriter	$ 445	$ 275

➥ IBM PS/2 Specials

During this special the software that comes with the PS/2 bundles is ***already installed*** on the machine's hard disk. The *IBM Tech Fair* table below lists the five PS/2 machines available during the special promotion. The *What's the Same?* section shows you that some of these machines' features are standard whether or not you choose the Normal or Special discount. The *What's Different?* section lists the features found in the Tech Fair special. The *Distinguishing Features* section lays out the differences between the five PS/2 machines and the additional differences between the Normal and Special discounts.

The *Discount Prices* section lets you compare the Book Center's normal discount with IBM's special bundle.

Currently the Book Center does not carry all the items bundled with IBM's Special. Here are the Book Center's normal prices for those items they do carry.

Product	Normal Discount
IBM 8513 color monitor	$ 455
IBM mouse	60
2MB memory module for 8570-E61	575
Microsoft Word for Windows	125
Microsoft Word	82
Microsoft Excel	106
Windows Software	45

➥ Proprinter Specials

During the IT Tech Fair IBM is also offering three Proprinters at reduced prices: Proprinter III for $349; Proprinter X24E for $499; and Proprinter XL24E for $679. All three printers come with a parallel printer cable. ◆

IBM Tech Fair Bundles

What's the Same?

These features are standard for all the machines listed in this table: ✓one 3.5-inch 1.44MB floppy drive; ✓one hard disk; ✓a serial port; ✓a parallel port; ✓a mouse port; ✓a built-in VGA display adapter; ✓and the PC-DOS 4.0 operating system.

What's Different?

The products shown in the ★ list below come only with IBM's Tech Fair Bundle. If you buy a PS/2 machine at the Book Center's normal discount price, you do not get these products.

Tech Fair Bundle: ★ IBM's Model 8513 12-inch color VGA monitor; ★ Microsoft Word for Windows, and ★ three hDC Windows programs - Express, Manager, and Color; ★ and an IBM mouse. All the bundles except the Model 30 286 also come with ★ Microsoft Excel.

	80286 Microprocessor				80386 Microprocessor					
Distinguishing Features	**Model 30 286 8530-E21**		**Model 50Z 8550-031**		**Model 55SX 8555-031**		**Model 55SX 8555-061**		**Model 70 8570-E61**	
• Processor Speed	10 MHz		10 MHz		16 MHz		16 MHz		16 MHz	
• Hard Disk	20MB		30MB		30MB		60MB		60MB	
• MicroChannel	no		yes		yes		yes		yes	
	Normal	**Special**	**Normal**	**Special**	**Normal**	**Special**	**Normal**	**Special**	**Normal**	**Special**
• Memory (RAM)	1MB	1MB	1MB	1MB	2MB	2MB	2MB	2MB	2MB	4MB
• Software	none*	Windows Word**	none*	Windows Word**	none*	Windows Word**	none*	Windows Word**	none*	Windows Word**
• Software	-	-	-	MS Excel	-	MS Excel	-	MS Excel		MS Excel
Discount Prices	$1570	$2325	$1855	$2830	$2460	$3385	$2705	$3635	$3600	$4950

* Normal discount includes PC-DOS 4.0. ** Word for Windows (not Microsoft Word).

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(1) If you want back issues of volumes 3 to the present issue, Kinkos will make them for you for a nominal fee. The master copies are downstairs at the Kinkos shop at 306 15th Avenue SE. This shop is open Sunday–Saturday. (2) The Information server, accessable to Macintoshes directly connect to the University's internet, has the six most recent issues of the newsletter.

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