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1. Introduction

This manual is about POPmail for IBM and compatible microcomputers that run the MS-DOS operating system.   In this document, for the sake of simplicity, we will often refer to these computers as IBM's or PC's.   POPmail is an electronic mail (E-mail) system, written by microcomputer support staff at the University of Minnesota. With the POPmail program, you can send and receive E-mail messages locally or to and from large systems on campus and around the world.   In addition to POPmail for the IBM, we also support an Apple Macintosh version, although all references to POPmail in this manual will pertain only to the IBM version unless otherwise specified.

POPmail uses the standard IBM character set to emulate a graphical user interface (GUI). For this reason, POPmail runs on a wide range of IBM PCs and compatibles, including the earliest PCs which contained a monochrome display adapter (with no graphics support).   In other words, POPmail does not require that you install a special graphics display adapter in your computer.

With a GUI, you interact with the program by responding to graphical symbols on the computer screen, rather than by issuing single line commands (as with the MS-DOS operating system).   Because of its intuitive user interface, POPmail is largely self-explanatory and very easy-to-use.   If you are familiar with the GUI in Microsoft Windows or the Apple Macintosh operating system, you will be able to run POPmail without much help from this manual.

We allow free distribution of POPmail to all interested parties provided that our copyright notices are not altered or removed and you do not charge others for distribution of our software.

1.1   Help!

If you run into difficulties when installing or using POPmail, you should first contact your local network administrator.   If you have questions, bug reports, suggestions, or general comments about POPmail you can send E-mail to us at

> popmail@boombox.micro.umn.edu

or if you prefer paper mail

> POPmail Project
> University of Minnesota
> Room 125 Shepherd Labs
> Minneapolis, MN 55455
> U.S.A.

In all of your correspondence pertaining to POPmail, please

- Indicate your POPmail version number.

- Indicate your operating system and version number (e.g., DOS 3.2).
- If possible, send us a diagnostic record of your POPmail session. (See the "Trace Facility" section of this manual for further details.)

Additional help information is available in the "POPmail Questions & Answers" section at the end of this manual.

1.2   Background and Philosophy

To be widely effective, an E-mail system must embody these three qualities wide connectivity, ease of use, and reasonable cost.   We designed POPmail with these three goals in mind.

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 center mainframes on campus as well as between departmental workstations.   Moreover, you can use POPmail to exchange E-mail with other computers on the worldwide internet (CICNET, NSFNET, and MRNET) and on BITNET.   Many mainframe computers and workstations have mail programs with wide connectivity, but often, these E-mail programs are difficult to learn and use.   For this reason, we developed POPmail to provide wide connectivity in a user-friendly environment.   In addition, POPmail is free (in the public domain).

POPmail's name is derived from Post Office Protocol (POP), the protocol that defines how a computer can retrieve mail from another computer (which acts as a shared post office or mail-server).   POPmail uses either the POP2 or POP3 protocol to communicate between POPmail and a mail server.

1.3   Selecting a Host Mail Server

POPmail requires a host computer to act as a central shared mail server.   Several host options are available to you.   If you are affiliated with the University of Minnesota, the easiest option is to sign up for mail-server-only service with the mainframe division of CIS (the University's Computer and Information Services department). For $20 per year, the mainframe division will provide those in the University community with unlimited access to the mainframe mail-server.   (For further information about this service, you can call CIS Accounts at 612-625-1511.)

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 Apple Macintosh IIs running the A/UX operating system.   Computers of this size should be adequate for servicing around 150 POPmail users. Because Unix machines have excellent connectivity to other systems, they are a good choice for a mail server.   Of course, for full connectivity, any mail server you select must be connected to the backbone network in order to communicate with the rest of the campus and the world.

Any reliable E-mail system will require a post office machine (or host mail server) to hold mail that arrives when a user's microcomputer is turned off.   The host mail server should be available 24 hours a day to receive and store all incoming mail messages until it is convenient for the user to read them.

Another low-cost option you can consider for a host mail server is to use the University of Minnesota's MailStop program.   MailStop is a mail-server application that runs on Macintosh computers.   This server software is designed to service client workstations (either IBM-compatibles or Macintosh computers) that run POPmail.   MailStop is in the public domain and is included as part of our overall POPmail package.   This means that MailStop, along with POPmail, is available from us via anonymous FTP on the internet.   (See the "Configuring POPmail" section below for details.)

In any case, to use POPmail, you designate one machine as a post office (also known as a 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 a mainframe computer as the mail server; the server is connected to the campus-wide backbone network.   The worksite is running POPmail on both IBM and Macintosh microcomputers.   The IBM computers on the top of the diagram are connected to the campus backbone network by Ethernet cable and a LANmark Ethernet telephone Type LDI-410.   (Making a connection to the Ethernet backbone may entail running wires for the network and setting up a LANmark phone connection.   If you are on the University of Minnesota phone system and you do not have the wiring and phone in place, call Telecommunications Services at 612-625-6333.)

Figure 1   Sample POPmail Setup

2. The POPmail User Interface

The POPmail screen consists of two full-sized windows.   The Viewer Window is for viewing messages which have been sent to you.   The Composer Window is used to compose new messages to send to others.

In addition to POPmail's two full-sized windows, smaller windows, (dialog boxes) pop up from time to time in response to commands you issue or buttons you click.

2.1   Menu Bar

The very top line of the computer screen contains POPmail's menu bar with six menu labels. The menu bar looks like this

∫   **O**ptions   **E**dit   **G**roup   **M**emo   **W**indow   **H**elp

The menu bar is the primary mechanism you use to communicate with the POPmail program. The menus have "pull-down" labels; that is, when you select Edit in the menu bar, a list of specific editing commands are dropped down from the Edit menu label and displayed in a list. If one of the commands in a pull-down menu is followed three periods (...), a modal dialog box (explained later in this section) will be displayed when you select that command. If a command in a pull-down menu is not followed by three periods, this means that once you choose it, the indicated action will occur immediately.

You can use either a mouse or keyboard to select commands.   To use a mouse, click on the desired menu title to display the pull-down menu. (Use only the left mouse button if your mouse has more than one button).   Then click on the desired command.   Alternatively, instead of clicking, you can push the mouse button over a menu title and then continue to hold the mouse button down while you move the mouse cursor straight down from the menu title to the desired menu command, and then release the mouse button.   If you decide not to choose a command, just move the mouse cursor out of the boundaries of the pull-down menu and release the mouse button.   Then no action will be performed.

To choose menu commands using the keyboard, first pull down the menu.   You do this by pressing the F10 key to make the menu bar active.   (When the menu bar is active, one menu title is highlighted.)   If the menu title you want is not the one currently highlighted, use the arrow keys to move to the right or left along the menu bar, until the menu title you want to select appears highlighted. (Alternatively, you can just type the first letter of the menu title.) Then press the <ENTER> key.   This will cause the menu to pull-down (drop-down).   There also is a hot-key alternative method to pull-down a menu.   Hold the Alt key down while typing the letter corresponding to the first letter of the menu title you want (e.g., type Alt-G to pull-down the Group menu). The hot key to pull-down the ∫ menu (called the system menu) is Alt-Spacebar.

Once the menu you want is pulled down, use the up-down arrow keys to highlight the command you want and press <ENTER> to choose (perform) the highlighted command. (As a shortcut   press the key corresponding to the highlighted letter of the desired command in order to choose that command.)

Once you choose (perform) a menu command, POPmail will do one of two things   carry out the command directly or display a modal dialog box.

The individual items under the pull-down menus are organized as shown in the following table.   Highlighted letters (shown here as capital letters) are used to perform the various short-cuts described in the previous section and elsewhere in this manual.

Note that the highlighted letter (shown here as a capital letter) associated with each command is not always the first letter of the command.   In addition, some menu commands are considered to be so important that they can be activated with a hot key alternative.   These hot keys are also shown below.

Menu Title	Commands	Hot-key
∫	About... ---------- Calculator calenDar ascii Table Video mode Ip finder	

	Finger	
Options		
	pReferences...	
	Configure...	Alt-C
	----------	
	pRinter setup...	
	Print	Alt-P

	Trace	Alt-F10
	----------	
	eXit	Alt-X
Edit		
	Undo	
	----------	
	cuT	Shift-Del
	Copy	Ctrl-Ins
	Paste	Shift-Ins

	Find...	Ctrl-QF
	Replace...	Ctrl-QA
	search Again	Ctrl-L
	----------	
	cLear composer	
Group		
	Make group...	
	Select group...	F5
Memo		
	Change Dir...	

	Open	
	New	
	Save	F2
	Save As...	
Window		
	cLose	Alt-F3
	Resize/move	Ctrl-F5
	Next window	F6
	Zoom	
	Tile	
	cAscade	

	Viewer	F7
	Composer	F8
	Show clipboard	
Help		
	Contents	
	Index	Shift-F1
	Previous topic	Alt-F1
	Help on help	

2.2   Status Bar

POPmail's status bar is located across the bottom line of the screen.   The status bar looks like this

F1 Help   Alt-X Exit   Alt-F Fetch   F3 Prev Msg   F4 Next Msg   F7 View   F8 Compose

The status bar contains "hot spots."   Hot spots are located wherever words occur in the status bar.   For example, "F3 Prev Msg" constitutes one hot spot.   Hot spots are separated from each other by more than one space.   When you click on a hot spot with a mouse, the indicated function will be carried out.   For example, when you click on the words "F4 Next Msg", POPmail displays the next message stored in your mail database, and when you click on the words "F8 Compose", POPmail opens the Composer window, allowing you to compose an outgoing mail message.

To activate a hot spot without using a mouse, you type a hot-key.   For example, if you press the F8 function key, POPmail will display the Composer window; and, if you type Alt-X, you will exit from the POPmail program.

2.3   Dialog boxes

Once you execute a menu command, POPmail will do one of two things   either carry out the command immediately or display a dialog box.   If a menu command is followed by three periods, (e.g., Save As...), the command opens a modal dialog box.   A modal dialog box is essentially a question-and-answer session which requires you to select choices and fill in the blanks before POPmail will proceed.   Note that while a modal dialog box is displayed, the menus and status bar hot spots are inactive.

In order to set options in a dialog box, you use five on-screen gadgets.   These five gadgets or "controls" are   radio buttons, check boxes, software buttons, list boxes, and input boxes. Figure 2 shows a dialog box illustrating the five controls

Figure 2 Modal Dialog Box

2.3.1   Software Buttons

With a mouse, you choose a software button by moving the cursor pointer over the button and then clicking the mouse button.   The modal dialog box shown in Figure 2 has two software buttons oK and Cancel.   If you choose oK, the choices you select in the dialog box are instituted.   If you choose Cancel, nothing happens and the dialog box goes away without instituting any of your changes.

If you don't have a mouse, use the keyboard command equivalents to choose and activate a button.   Press the <TAB> key consecutively to advance forward through the dialog box until the button you want to select becomes highlighted and then press the <ENTER> key to

choose that software button.   (Press Shift-<TAB> to move backwards in a dialog box.)
When you have finished making your choices in a dialog box, type Alt-K (to activate the oK
button).   To cancel, type the ESC key.

2.3.2   Input Boxes

Input boxes let you enter text.   For example, in one of POPmail's dialog boxes, POPmail
requires that you enter your full name in an input box. If you type in more text than will fit
within the input box, the text will scroll automatically.

2.3.3   Check Boxes

Some dialog boxes also have check boxes.   An X inside a square indicates that that option is
set ON.   An empty box indicates it's OFF.   You set a check box to the ON- or OFF-state by
clicking on the square or by clicking on the text immediately to the right of the square.   (If
you don't have a mouse, press the <TAB> key one or more times until the check box is
highlighted and then press the Spacebar.   Alternatively, you can turn a check box ON or OFF
(toggling) by holding the Alt key down while typing the highlighted letter (if one is
provided).   Any number of check boxes can be checked ON at any one time.

If several check boxes are grouped together, pressing the <TAB> moves to the next group
and once the group is selected, you can use the up-down arrow keys to highlight the check
box you want within the group, and then press the Spacebar to turn the individual check box
ON or OFF.   On monochrome monitors, POPMail indicates the highlighted check box or
group of check boxes by placing a chevron symbol (») next to it.   When you press <TAB>,
the »   symbol moves to the next check box or group of check boxes.

2.3.4   Radio Buttons

Radio buttons work just like check boxes, except that one and only one radio button in a
group is ON at any one time.   Since only one radio button in a group can be ON at a time,
any other button in the group which was previously turned on is turned OFF automatically
when you select another.

2.3.5   List Box

A list box lets you scroll through a list of choices.   You activate a list box by clicking in it or
by pressing the <TAB> until it's highlighted.   Once a list box is active, you can use the
mouse to manipulate the scroll bar (or if you don't have a mouse, press the up-down arrow
keys to move within the list).

(**Note**   Inside a dialog box, any item with a highlighted letter indicates that that particular
gadget can be accessed by holding the ALT key down while typing that highlighted letter.)

2.4   Editing Text

POPmail contains basic word-processing features.   Anywhere in POPmail, the <DEL> key deletes text forward from the current cursor position, and the <backspace> key deletes text to the left of the cursor position.   Except within a modal dialog box, you can use the mouse to drag over (select) text to be cut or copied. Without a mouse, you select text by holding the Shift key down and using the arrow keys to expand the amount of text selected, starting with the current cursor position.   Once the text is selected (highlighted) you can cut the selected text, by selecting Cut from the Edit menu.   Likewise, to copy selected text, select Copy from the Edit menu.   Once selected text has been cut or copied, it is stored temporarily in POPmail's clipboard.   To paste the text contained in the clipboard, position the cursor in the desired location and then select Paste from the Edit menu.

POPmail does not support underlined, bold, or italic text.

Users who are familiar with WordStar are advised that the POPmail editor also supports the WordStar Control Key sequences for cursor movement (Ctrl-E = Line Up; Ctrl-R = Page Up; Ctrl-F = Next Word; Ctrl-Y = Delete Line, etc.).

3. Installation

3.1   System Requirements

In order to run POPmail, your microcomputer must be connected to a local area network (LAN).   Usually, the LAN will be connected to the campus backbone network, allowing you to send and receive mail outside your local work group.

In order for your microcomputer to operate on the LAN, you must have a network adapter card installed in your microcomputer.   In order to run POPmail, your network adapter card must be one of those supported by the Clarkson packet drivers, as explained in the following sections of this manual.   (Each Clarkson packet driver is a specialized piece of software designed to talk to a specific type of network adapter card.   For a list of network adapter cards currently supported by the Clarkson Packet Drivers, please consult our accompanying documentation entitled "Installing the Clarkson Packet Drivers".)

POPmail runs under DOS version 3.0 or greater and requires 640K of RAM.   POPmail was designed to run on a wide range of IBM PCs and compatibles, including the earliest PCs which contained only a monochrome display adapter (no graphics support).

A Microsoft-compatible mouse is helpful but optional.   You must load mouse driver software into your system before running POPmail.   Note also that if your mouse contains more than one mouse button, you will be using only the left mouse button when running POPmail.

3.2   How to Obtain POPmail

POPmail software consists of two components a Clarkson Packet driver (matched to your microcomputer's network adapter card) and the POPmail program software itself.   All the software components and their manuals are included on the POPmail diskette, or they may be obtained on the internet through anonymous FTP from

    boombox.micro.umn.edu

Look in the UNIX directory called

    /pub/POPmail

3.3   Loading the Clarkson Packet Driver

You install the appropriate Clarkson packet driver according to the installation instructions contained in our manual entitled "Installing the Clarkson Packet Drivers."   In order to run POPmail, the appropriate Clarkson packet driver must be loaded into RAM (random-access memory) each time you boot-up your computer.   To do this, you first run the appropriate packet driver by typing the packet driver name, followed by the necessary parameters, as described in the manual.

After you have installed the appropriate packet driver, copy the POPMAIL.EXE file into a directory.   If you want to be able to run POPmail from any directory, modify the PATH statement in your AUTOEXEC.BAT file to include the directory containing POPMAIL.EXE.   Then, you can run the POPmail program by typing   "POPMAIL" at the DOS prompt.

The following two command lines represent an example of the steps needed to load the packet driver and start POPmail (of course, the specific packet driver and parameters will depend on your configuration).   Type each line following the command prompt and end each line by pressing the <ENTER> key

    3C523 0x60 0x3 0x300
    POPMAIL

At this point you are running POPmail.   As long as you do not turn the power off to your computer, you can quit POPmail and do other things and then start POPmail again without re-loading the Clarkson packet driver.   Also if you already have the packet driver loaded for other programs like FTP, Telnet, or tn3270, you do not need to re-load the packet driver before running POPmail.

3.4   Configuring POPmail

When you use POPmail for the first time, you need to set up POPmail parameters.   POPmail needs 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 "Configure" dialog box shown in Figure 3A, allowing you to enter the required parameters. You must enter all of the parameters, according to the instructions which follow.   (Consult your

network administrator for the correct parameter information.)   Space for entering multiple name servers and gateways is provided, but only one of each is required.   You will not need to enter parameter information during subsequent POPmail sessions, because POPmail will permanently remember the parameters you have entered.   You can modify your configuration settings at any time by selecting Configure from the Options pull-down menu.

Figure 3A   First Time Users

Initially, the User Name line will be empty and highlighted.   Since it is already selected, you can simply type in your User Name.   To enter or edit Password, Host computer, or any of the other parameters in the Configure dialog box, use the <TAB> key (or Up and Down arrow keys) to advance to the appropriate parameter field.   Then enter the appropriate parameter information. (As a short-cut you can select any of the parameter names by holding down the Alt key while typing the highlighted character in that parameter name, e.g., type Alt-P to select the Password parameter name.   Remember In general, we use a capital letter to designate a highlighted letter within a dialog box.)

A brief description of each of the parameters follows

3.4.1   User Name

Initially, the User Name line will be empty and highlighted.   Since it is already selected, you can simply type in your User Name.   This User Name corresponds to the User Name (sometimes called the account name) that has been assigned to you for use on the host mail server.   Generally, the host mail server will be a Unix machine, and by convention, Unix machines use all lower-case letters, so be careful not to capitalize letters in your user name when they shouldn't be.

3.4.2   Password

The Password is the key word that the host mail server uses to validate your user name.   The person who sets up your account on the host mail server will assign you this password. Warning   Be sure to type in your password exactly as it was assigned, (again, be careful of upper- and lower-case considerations).   Note that when you enter your password in the Configure dialog box, you will not see your actual password displayed on the screen.   This is a security feature of the POPmail program, since it prevents people from viewing your password as you enter it.

3.4.3   Host Computer

This is the name or IP address of the computer you are using as a host mail server for running POPmail.   Every computer on the TCP/IP (world-wide) network has a unique numerical address called an IP address.   The IP address looks something like 128.101.63.1.   In much

the same way as the post office uses home addresses to distinguish one residence from another, the network uses IP addresses to distinguish one computer from another when delivering electronic mail.   In addition to having an IP address, each computer on the network often has a name, e.g., vx.acs.umn.edu.   Although both the IP address and name are unique for each computer, they don't have equal status.   Specifying the host mail server's IP address will always work to identify the host computer successfully, while specifying its name identifier may not always work.   You can use either the host computer name or IP address.   The advantage in using the name, although it is less reliable on the network, is that it's easier to remember a name than it is to remember a series of numbers.   If you use a name, the name will be converted to an IP address by a computer on the network called a name server.

3.4.4   Microcomputer IP address

This is the IP address of your individual microcomputer or workstation.   See your network administrator for a microcomputer IP address assignment.

3.4.5   Subdirectory for Mail

POPmail writes a copy of each message you receive to a file on your personal computer, one file per message.   This parameter specifies the drive and subdirectory for POPmail to use when saving your messages.   If this subdirectory does not exist on your disk, POPmail will ask you if you would like to create a new subdirectory when you exit the dialog box.   (Note POPmail will also ask you if you would like to create the subdirectories called ENCL and ENCL\RSRC within your subdirectory.   See the section called "About Enclosures" for more details.)

3.4.6   Gateways

A gateway is a device which gives your computer access to the outside world, by transferring information from one type of network to another.   If you want to use POPmail to send messages beyond your local area network (LAN), you must specify the IP address of one or more gateways to which your LAN has access.   If more than one gateway is available to you, it is to your advantage to enter more than one, increasing the chance that you will find one that is up and running when POPmail needs it.   A gateway moves your POPmail information off your LAN and routes it on to the outside world.   Contact your network administrator for the IP address of gateways accessible to your LAN.

3.4.7   Name Servers

As discussed earlier in the "Host Computer" section above, a name server converts a host mail server name into an IP address.   You type in the IP address of your name server in this parameter field (see your network administrator for the value to enter). If more than one name server is available to you, it is to your advantage to enter more than one IP address, increasing the chance that you will find a name server that is up and running when POPmail needs it.

3.4.8 Time Zone

Figure 3B shows the Time Zone List Box which pops up when Figure 3A's Time Zone software button is activated.   The Time Zone List Box allows you to indicate your time zone, if you are not located within the Central Standard Time zone of the United States, which is the default setting.   To indicate your time zone, use the scroll arrows or the up-down arrow keys, to select your time zone from the list.   Once your time zone is highlighted, type the <ENTER> key or click on the oK button.

Figure 3B Time Zone List Box

3.4.9 Language

Figure 3C shows the Language List Box which pops up when Figure 3A's Language software button is activated.   The Language List Box allows you to indicate the human language (e.g., Swedish, English, etc.) you use to communicate.   To indicate your chosen language, use the scroll arrows or the up-down arrow keys, to select your language from the list.   Once your preferred language is highlighted, type the <ENTER> key or click on the oK button.

Figure 3C Language List Box

3.4.10 Advanced

Most users will not have an occasion to use the Advanced... software button in the Configure dialog box.   POPmail has default parameters which are appropriate for most network environments.   However, if you encounter problems in installing or using POPmail on your network, consult your network administrator to see whether it might be helpful to alter the Advanced configuration parameters described in the next section.

When you have finished entering the parameters, click on the oK button to have POPmail save your changes to the configuration.   If you decide you don't want your parameter changes to be saved, click on the Cancel button.

3.5   Advanced Configuration Parameters

The Advanced Configuration Parameters dialog box is designed to provide network administrators with more advanced and specialized configuration parameters, in case they are needed to install POPmail on network environments which have unique or unusual requirements (see Figure 4).   Network administrators can set these specialized parameters by activating the Advanced... software button found within the Configure dialog box.   POPmail has appropriate default settings for these advanced parameters, which in our experience are suitable for most networks.   However, if you encounter problems in installing or using

POPmail on your network, your network administrator may need to alter the Advanced configuration parameters.

When the Advanced... software button is activated, the following advanced configuration parameters are displayed

Figure 4   Advanced Configuration Parameters

3.5.1   Preferred Full Name

This is your full name in real life, e.g. John A. Doe.   POPmail gets your full name from the SMTP server so you should be able to leave this field blank.   You can use this field to override the information returned by the server.

3.5.2   Net mask

The net mask parameter has to do with how your local area network is configured and connected to the backbone network at your worksite.   Your network administrator will know the correct value to enter here.   Most sites are configured to use a net mask of 255.255.255.0 (the default value).

3.5.3   Domain request timeout

This parameter sets the maximum number of seconds allowed for the name server on the network to convert your computer's host mail server name to an IP address.   The default value is set to 20 seconds.   If an error dialog box is displayed stating "Domain name request failed" when trying to send or fetch messages, you may need to increase this value.

3.5.4   Connect timeout

When POPmail attempts to connect to the host mail server, this parameter sets the maximum number of seconds POPmail will wait before the host mail server will acknowledge your attempt to connect.   The default value of 20 seconds is sufficient for most mail servers.   If an error dialog box is displayed stating "Open failed" when trying to send or fetch messages, try increasing this value.

3.5.5   I/O timeout

This parameter sets the maximum time allowed for POPmail to send and receive data from your computer to the host mail server.   With the default value of 20 seconds, POPmail will wait 20 seconds for a response from the host mail server.   If a response does not come through within 20 seconds, POPmail will present an error dialog box stating "error reading from network" or "error writing to network" and will abort the Send or Fetch operation in

progress.   Again, if your host mail server is slow and frequently times out, you may need to increase this parameter value.

3.5.6   Retransmit timeout

This parameter sets the length of time in seconds POPmail will wait before retransmitting a packet whose earlier transmission was not acknowledged.   The default is one second.

3.5.7   Max transmit unit in bytes   MTU

This parameter specifies the maximum allowable packet size that POPmail will transmit in bytes.   The default is 1024 (1K) bytes.

3.5.8   Max segment we can receive   MAXSEG

This parameter specifies the maximum size packet in bytes that a host mail server is allowed to transmit to POPmail.   The default is 1024 (1K) bytes.

3.5.9   Most bytes we can receive without ACK

This parameter sets the maximum send/receive TCP window size in bytes.   The default is 2048 (2K) bytes.

3.5.10   POP port

This parameter specifies the port POPmail will use to connect with the POP server.   The default value is port 109.   This is the default POP2 port.   If you are using a mail server that uses the POP3 protocol you will probably need to change this value to 110.

3.5.11   Finger port

This parameter sets the port the Finger command will use when using the Finger desk accessory.   The default value is port 79.

4. The Composer Window

4.1   Sending Mail to Other Users

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

1. Make the Composer window the active window.
2. Specify the recipient of the message.
3. Specify recipients of carbon copies, if any.
4. Specify the subject of the message.
5. Type the message itself.
6. Send the message.
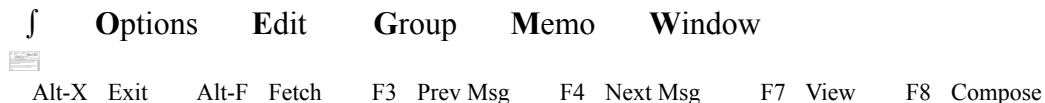
Make the Composer window the active window.
Press the F8 function key.   This will make the Composer window active.   (The active window always appears in front of all other windows.)

Specify Recipient.
In order to send a letter to someone through the United States mail, you must know their name and address.   Likewise, to send an electronic mail 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 the cursor between fields, you press the <TAB> key or simply click in the desired field with your mouse.   Then type the recipient's E-mail address.   Figure 5 shows a sample message in the Composer window.

Figure 5   POPmail screen with the Composer window visible

∫   **O**ptions   **E**dit   **G**roup   **M**emo   **W**indow

Alt-X Exit   Alt-F Fetch   F3 Prev Msg   F4 Next Msg   F7 View   F8 Compose

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 one from the other by one or more spaces (a comma is optional).   The message in Figure 5 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.

Specify Carbon Copies.
With POPmail you can send a message directly to some people and as a carbon copy to others.   After specifying the primary recipients of your message in the To field, press the <TAB> key once to enter 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 primary and the carbon copy recipients of the message.   If you don't want to send carbon copies of your message, you may leave the CC field blank.

Specify Subject.
You must fill in the Subject field.   To move to this field, press 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 "Next Committee Meeting".

Type the Message.
The big 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, press the <TAB> key again. Once your cursor is in the field, type your message.   Editing text here is easy.   You can use the arrow keys to move around in the text and use the <backspace> and <DEL> keys to delete text.   The current version of POPmail support s word-wrapping; therefore, you only need to type the <ENTER> key at the end of paragraphs.   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, italic or underlined.

Send Mail.
When you are done typing your message click on the Send button.   (Alternatively, type Alt-S;   or press the <TAB> key until the Send button is highlighted and then press <ENTER>).   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, a confirmation dialog box is displayed.   Click on the OK button or press the <ENTER> key to clear the confirmation box.

4.2   Sending Mail to a Group

Sending POPmail to a group is as easy as sending a message 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

To create a group alias name, select the "Make Group..." menu item from the Group pull down menu.   An edit box with scroll bars 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 6 below, committee1 and committee2 are group names.   The group names are followed by the user names of the members of the group.   Within a group, each user name is separated from the next by one or more spaces (commas are optional).   When you are finished entering the user names for one group, type the <ENTER> key twice before entering information to define another group. (Groups must be separated by a blank line.)

Figure 6   Making Groups

When you have finished making groups, click on the oK button to save your changes.

4.2.1   Selecting a Predefined Group

To send mail to a group you have already defined, select the "Select Group..." menu item from the "Group" pull down menu.   A list box with a vertical scroll bar will appear, giving you a list of all your group alias names, as shown in Figure 7.   Select the group name by typing the up and down arrow keys until the desired group name becomes highlighted.   Then click on the Select button to select that group.   The "To" field of the Composer window will be filled in automatically with the full E-mail addresses of the members of the group; the group alias name itself does not appear in the To box.

Figure 7   Select   a Predefined Group

4.3   About Enclosures

POPmail allows you to enclose files, such as an Excel chart or worksheet, or a memo created with Microsoft Word, with each mail message.   Each recipient of your message receives an exact copy of the enclosed files.   (Of course, to receive an enclosure from POPmail, the recipient must be running POPmail/PC or POPmail/Macintosh.)   Enclosed files appear on the recipient's disk with their original contents.   Your recipient can peruse and modify the file and, if desired, return it to you as another POPmail enclosure.

When the POPmail program receives a message with an enclosed file, the document is stored on your disk.   POPmail automatically stores the enclosure in a subdirectory named ENCL of the directory you specify for mail (see Configuring POPmail).   For example, if you specify the C\POPMAIL\MAIL directory for incoming mail, POPmail places your enclosures in the directory C\POPMAIL\MAIL\ENCL.

Since enclosures are regular files, you can treat them as you would any other file; that is, if someone sends you an enclosure containing an executable program, you can run the program on your machine as well. In addition, an IBM enclosure containing graphics, italic or bold characters, or spreadsheets, will retain all its original characteristics.   In short, sending IBM files as enclosures is really no different than transferring files from one machine to another using a diskette.

4.3.1   Receiving Enclosures from a Macintosh

Macintosh files are somewhat more complicated than IBM files.   First, Macintosh files can have longer and more complicated file names, so if necessary, POPmail/PC will alter the original Macintosh file name in order to comply with DOS file name requirements.   Second, Macintosh files are divided into one or two forks (parts).   Part One, called the "data fork," is completely equivalent to a data file on a DOS computer. Part Two, if present, is called the "resource fork."   The resource fork contains special Macintosh-only information.   If an enclosure is coming from a Macintosh, POPmail will store the data fork of the document in the subdirectory called ENCL.   If the document also contains a resource fork, the resource fork portion of the document will be stored in a subdirectory of ENCL called RSRC.   For example, if someone sends you a Macintosh HyperCard stack called "French," POPmail/PC will divide this incoming Macintosh document into two parts.   Part One the data fork, would have the name

     C\POPMAIL\MAIL\ENCL\FRENCH

Part 2 (the resource fork), would have the name

     C\POPMAIL\MAIL\ENCL\RSRC\FRENCH

Actually, the information contained in the resource fork is useless to the IBM user; however, if someone sends you a HyperCard stack, you may want to pass it on to another Macintosh user without losing any information.   That is why POPmail saves the resource information on the PC even though PCs don't have any way of using Macintosh-style resources.

4.3.2   Sending Enclosures to a Macintosh

It is possible to send enclosure files to a Macintosh, as well as receive them.   In fact, many of the newer applications, such as Microsoft Excel, have compatible data formats.   They achieve this by using only the data fork on the Macintosh and storing the data in compatible formats.

In general, if you are creating files on the IBM for later transmission to a Macintosh via POPmail, you must be careful to assign the correct file extension to your file name.   The Macintosh then will be able to assign the proper system icon, etc. to the IBM file when received.   For example, if you are using Excel on an IBM and want to send the Excel spreadsheet to a Macintosh user, your file name must have a file name extension of .XLS. The recipient will be able to receive and modify the spreadsheet with no problem, and then send the modified spreadsheet back to you.

Here are other important file extensions to employ when sending IBM files to a Macintosh

```
        DOS EXT. Mac Application       Mac Document Type
        ====     =========             ===========
        .XLS     MS Excel 2.2          spreadsheet
        .WKS     MS Excel 2.2          spreadsheet
        .WK1     MS Excel 2.2          spreadsheet
        .PAS     Turbo Pascal 1.1      program source
        .TXT     MacWrite II           ASCII text
        .BAT     MacWrite II           ASCII text
        .C       MS Word 4.0           ASCII text
        .CPP     MS Word 4.0           ASCII text
        .DOC     MS Word 4.0           internal
        .RTF     MS Word 4.0           RTF
```

4.3.3   Problems with Exchanging Documents

Those who exchange documents with others (via POPmail or even floppy disk) using different versions of the same software soon learn that they cannot always save, open, read, or retrieve documents in the usual manner.   New versions of the software can usually open or read documents created with older versions, but older versions do not recognize documents created with newer versions.   However, newer versions of the software usually are backwardly compatible in that they contain an option for reading and writing documents in the old (obsolete) formats.

Exchanging computer documents is generally straightforward when you and the recipient use exactly the same version of the same software; for example, when you both use WordPerfect 5.1.   However, even in this scenario, if the recipient does not have the font you used to create the document, they probably will not be able to see the document as you intend it to be reproduced - either on the screen or on a printer.

Whenever Microsoft Word users want to exchange documents but are unsure of the recipient's software, they should save the document as an RTF (rich text format) document. Documents saved in this manner are compatible with all versions of Word on the IBM and the Mac, as well as with some other word processing programs.   Word 5.0 users will see the RTF document's name show up in the Transfer/Load menu if the document's name ends in .DOC.   If the document's name does not end in .DOC, Word 5.0 users must type in its name to load the document.   The newer Word 5.5 is more flexible; it has an option that lets you view a list of all documents regardless of their names.

Some software comes with built-in file converters.   For example, Microsoft Word for Windows 2.0 includes converters for several word processing packages, such as Word for DOS, Word for Macintosh, Windows Write, WordPerfect 5.1, and WordPerfect 4.2.   When you install Word for Windows this conversion feature is automatically copied to your working disk.   Not all software makes using its conversion features so easy to use.   Some software requires that you follow special installation instructions to use their converters.

Finally, keep in mind that when you E-mail large documents or multiple enclosures, you can bog down a network.   To avoid congestion, consider these strategies send only one enclosure per mail message; break up large documents into smaller documents; and mail your documents during off-peak hours.

As you can see, enclosing E-mail documents is not always straightforward.   The less you know about the recipient's hardware and software setup, the more likely you are to run into unforeseen problems.

4.3.4   Sending Enclosures

When sending a message, it is often desirable to enclose another file within your message. For example, you may want to send a message notifying others of an upcoming committee meeting, and enclose a copy of a map indicating directions to the meeting site.   If you push the "Enclose..." button in the Composer window shown in Figure 5, POPmail will display the modal dialog box shown in Figure 8.

Figure 8 Choose file to enclose Dialog Box

The list displayed in Figure 8 is simply a list of all the files contained on your disk.   The information at the bottom is provided to give you further information about the file you are proposing to select as an enclosure.   This helpful information includes drive, path, and file name information, the file size in bytes, and the date and time the file was last modified.   To select a document to be sent with the current outgoing message, click on the file name desired and then click on the oK button.   At this point, POPmail returns you to the Composer window.   The enclosure file name will be displayed on the bottom of the Composer window (on the window frame) to remind you that you have selected an enclosure.

If you hold down the shift key while you push the "Enclose..." button in the Composer window shown in Figure 5,   you will invoke a dialog box identical to that shown in Figure 8, except that the dialog box will be retitled as "Choose TEXT file to add to message".   You can then choose an ASCII text file that will be appended to your message body when the message is sent.   You can use this feature to send ASCII text files to others who are not using POPmail and cannot accept BINHEXed enclosures (the normal method POPmail uses to send enclosures).

4.3.4.1   Sending multiple enclosures

If you select the Enclose... button from the Composer window after you have already selected one enclosure, you will see the dialog box shown in Figure 9.

Figure 9 Add/Remove Enclosures Dialog Box

To add additional files to POPmail's enclosure list for the current outgoing message, click on the "Add..." button.   Then POPmail will display the modal dialog box called "Choose file to enclose" (Figure 8) on top of the Add/Remove Enclosures Dialog Box (Figure 9).

For each enclosure you wish to send, repeat this sequence, choosing one file at a time, until you have chosen all the desired enclosures.   If you find that you have selected an incorrect file, you can click on (highlight) the incorrect file name in the list shown in the Add/Remove Enclosures dialog box (Figure 9) and then delete it by clicking on the Remove button. When your list of enclosures is complete and correct, click on the Done button in the Add/Remove Enclosures Dialog Box, and POPmail will return you to the Composer window.

Note   If you hold down the shift key while you push the "Add..." button in the Add/Remove Enclosures Dialog Box (Figure 9), you can then choose an ASCII text file that will be appended to your message body when the message is sent.   You can use this feature to send ASCII text files to others who are not using POPmail and cannot accept BINHEXed enclosures (the normal method POPmail uses to send enclosures).   File names which appear in upper case letters in the list box shown in Figure 9 will be sent as BINHEXed enclosures. File names which appear in lower case in the list box shown in Figure 9 are ASCII text files which POPmail will append to your outgoing message.
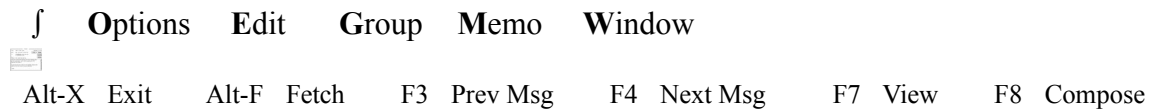
5.   The Viewer Window

5.1   Fetch 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 to the POPmail subdirectory you have specified.   Incoming messages remain in your database until you explicitly discard them.

To retrieve your new messages, click the Fetch button on the Viewer window (Figure 10 below).   (No matter which window is currently active, you can type Alt-F to make the Viewer window active and Fetch your mail.)   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 the Viewer window.

Figure 10 POPmail screen with the Viewer window visible

∫   **O**ptions   **E**dit   **G**roup   **M**emo   **W**indow

Alt-X   Exit   Alt-F   Fetch   F3   Prev Msg   F4   Next Msg   F7   View   F8   Compose

If you are connected to a printer, you can print the message by selecting Print from the File pull down menu.   If you want to delete the message click on the Delete button in the Viewer window.   If you don't delete the message, it will remain in the database.

5.2   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 (view the previous message), press the F3 function key.   To move to the next message in the stack, press the F4 function key.

If you save a copy of your outgoing messages (specified in the Preferences dialog box shown in Figure 11) from the Options pull-down menu, each outgoing message will be stored in order at the end of your POPmail database.

Each incoming message is saved to a file on your disk in the subdirectory you specify in the Configure dialog box (see Figure 3A). The name of each file is stored near the end of the To field along with the complete SMTP header.   (More advanced users may wish to scroll down the To field to view or retrieve this optional information.   This feature is useful because POPmail will only display the first 45K of the message body.   If the message is larger than 45K in size, you would want to know the file name of the message so that you could retrieve it from disk and view it with some other word-processing program capable of reading arbitrarily large files.)

5.3   Reply to Incoming Mail

One important difference between the Viewer window and the Composer window shown earlier in Figure 5 is that the Viewer window includes a REPLY button.   The Reply button allows you to respond to an incoming message quickly, since POPmail automatically takes the Subject field and From field information from the original message and fills it into the Subject field and To field in the Composer window for your reply.   When you are finished typing your reply, you click the Send button to send your message.

5.4　　Forwarding Mail

If you want to forward the message displayed in the Viewer window on to another user, click on the Forward button found in the Viewer window (Figure 10).   POPmail will move the message into a Composer window, and fill in all necessary information automatically.   The Composer will be filled in as follows the subject field will be prefixed with the text "Forwarded->" and the text in the body will be prefixed by a line indicating who wrote and sent the original message.   All you have to do is enter the appropriate user address in the To field.

6. Setting Program Preferences

POPmail is designed so that you can customize the program to meet your needs.   To customize POPmail, select "Preferences..." from the File pull-down menu.   The Preferences dialog box shown in Figure 11 will appear.   Use the mouse to click in the little box to the left of each option in order to toggle the preference ON or OFF (when an X appears in the box to the left of preference, it is turned ON).   (Using the keyboard you can toggle a preference by pressing the Alt key together with the letter that is highlighted for the preference in question; or, press the <TAB> key repeatedly until the desired preference is selected [highlighted] and then press the Spacebar to toggle that preference ON or OFF.)   The default values are pre-set by POPmail to the values shown in Figure 11.   If you don't like these default values, you are free to change them at any time.   POPmail permanently remembers your settings.

Figure 11 Preferences Dialog Box

The first preference option in Figure 11 is "Include incoming message in Reply".   This feature is used in conjunction with the Reply button in the Viewer window (see Fig. 10).   When there is a check in the square to the left of this preference, POPmail will collect the text in the incoming message and include it for reference as a preface to the reply you will formulate to the message while using the Reply feature on the Viewer window.   The text collected from the incoming message will appear before your reply, with a leader line stating, " On [such and such a date] [so and so] writes ".   In addition, to further differentiate the incoming message from your reply which will follow in the message field,   POPmail places a greater than (>) symbol before each line of the incoming message.   You then type your reply following this reference text.   This feature is useful because it allows each recipient of your reply to consider your reply in the context of the original incoming message.

The second preference option is "Display POPmail's copyright screen".   When there is a check in the square to the left of this preference, POPmail will display the POPmail copyright dialog box (POPmail's initial screen) whenever you start up POPmail.

The third preference option is "Add signature to outgoing mail."   When there is a check in the square to the left of this preference, POPmail will automatically end each of your outgoing messages with a signature block of your choice, as shown in the John Doe example in Figure 11.

The fourth preference option is "Save copy of outgoing mail."   When there is a check in the square to the left of this preference, POPmail will automatically place a copy of each outgoing message into your POPmail database.   This convenient feature saves you a record of every message you send.

The fifth preference option is "Check for mail at startup".   When there is a check in the square to the left of this option, POPmail automatically fetches any mail waiting for you when you start POPmail.

The six preference option is "Prompt for password."   When there is a check in the square to the left of this preference, POPmail will require you to enter your password every time you start POPmail.   The password will not be stored in the configuration file.

The seventh preference option is "43/50 line mode as default."   When there is a check in the square to the left of this preference, POPmail will start with the program in the highest resolution mode allowed by your computer's video display adapter.   You can always use POPmail's Video mode command under the ∫ (system) menu to switch to low resolution mode (25 line mode) and back again as often as you wish.

7. Desk Accessories

POPmail has several desk accessories (small programs that you can run while you are running POPmail).   The POPmail desk accessories are   calculator, calendar, ASCII table, IP finder, and Finger.   You activate a desk accessory by selecting the appropriate item in the ∫ (system) pull-down menu in POPmail's main menu bar.   A short description of each desk accessory follows.

7.1   Calculator

The calculator is a simple four-function calculator.   Numbers and numerical operations are selected by clicking on the calculator buttons or by using the keyboard.

7.2   Calendar

The calendar is a simple electronic calendar.   The current month appears automatically, but you can use the arrow keys or the calendar buttons to move to a future or past month.

7.3   ASCII Table

Use this desk accessory to look up the ASCII codes for any character, including special foreign language characters.

7.4   IP Finder

This desk accessory will look up the IP address of any internet name.

7.5   Finger

You use the Finger desk accessory to look at the status of an account on a given machine. For example, if you can provide an E-mail address, Finger will tell you the person's name in real life, the last time the person logged in to his account, and other site-specific details.

At the University of Minnesota, you can use Finger as an electronic phone book. For example, to look up all people with the name Hickman at the University of Minnesota, you would specify HICKMAN@UMN.EDU.   Then Finger returns all information pertaining to Hickmans in the University phone book.

8. Other Features

8.1   Memo Editor

The memo editor is a simple ASCII text editor that lets you open up multiple windows for the purpose of importing and editing ASCII text.   Cut, Copy , Paste, New, Open and Save operations are supported, as well as a Find and Replace facility.   Memo Editor commands are accessed through the Memo and Edit pull-down menus located in POPmail's main menu bar.

8.2   Moving a Window

You can move the Viewer and Composer windows, as well as dialog boxes, by using a mouse or the keyboard.   Using a mouse, place the mouse cursor on the top bar of the window frame, press the left mouse button, and continue to hold the mouse button down while dragging the window to a new location, then release the mouse button.   Using the keyboard, press Ctrl-F5 (or select "Resize/Move" from the Window pull-down menu and use the four arrow keys to move the window.   Press <ENTER> when done.)

8.3   Resizing a Window

The Clipboard window (you can view the clipboard by selecting "Show Clipboard" from the Edit menu) and the Trace Window (see the "Trace Facility" below) can be resized as well as moved.   To resize a window using the mouse, grab the lower right corner of the frame and press the left mouse button, dragging the mouse until the desired size is achieved; or, using the keyboard, select "Resize/Move" from the Window menu and use the arrow keys while holding the Shift key down.   Press <ENTER> when done.   In general, the Composer window, the Viewer window, and dialog boxes cannot be resized.   However, in 43/50 (high-resolution) mode, you can click on the zoom box (the little square in the upper right-hand corner of the window) to change the window back and forth from full screen to half-screen.

8.4   Trace Facility

POPmail has a built-in trace facility to assist network administrators in trouble-shooting when POPmail fails to Fetch or Send properly.   If your network administrator is unsuccessful in trouble-shooting the problem, we can be more helpful if we receive trace output.   When tracing is turned ON, POPmail will write a detailed log of the transactions between the PC and the host mail server when messages are fetched or sent.   Then your network administrator can use this log to help locate the source of the problem.   You press Alt-F10 to display the Trace Options dialog box, as shown in Figure 12.

Figure 12   Trace Options Dialog Box

By default tracing is turned off.   You turn tracing on by selecting a trace destination, either to the trace window or to a file.

You can direct the trace output to a Trace window by choosing the ".. to trace window" radio button and then clicking on the oK button.   Then a movable and resizable Trace window is made visible and active.   You can scroll back through this window to see earlier messages. (The Trace window has an 4k buffer).   All new messages are always added to the bottom of the window.   If the Trace window gets covered by the Viewer or Composer windows, you can bring it to the front by successively pressing F6 (Next Window) until the Trace window appears on top of all other windows.   You can close the Trace window by clicking in the close box in the upper left-hand corner of the window or by pressing the <ESC> key.   Even if the Trace window is closed, transactions will still be recorded to the trace window, you just won't be aware of them.   Remember, if you have closed the Trace window, you can make it visible again by pressing Alt-F10.

To direct Trace output to a file, select the "..to file" radio button, type the name of the file in the input box just to the right of this radio button, and then click on the oK button.   By default, POPmail uses the file name "POPTRACE.TXT".   If you enter PRN for the filename, the trace output will go to your printer.

The values you enter into the Trace dialog box are transient.   They are forgotten once you quit the POPmail program.   The Trace dialog box initial (default) settings are shown in Figure 12.   The four check boxes let you control the level of detail included in the trace output.

8.5   Program Switches

The POPmail program has two advanced optional parameters called program switches. They are the /P and /BATCH options.

The /P switch allows multiple users to run a single copy of POPmail on a network, each user with a custom POPmail configuration file.   It also makes it possible for each user to choose among multiple sets of POPmail configuration files by specifying the path (location) of the desired configuration file.

Using the /BATCH option allows you to find out how many incoming messages are waiting to be read.   When you use the /BATCH option, POPmail runs in a non-interactive mode; that is, POPmail simply reports the number of messages waiting for you and then quits. POPmail sets ErrorLevel to the number of messages waiting.   In batch mode, you can also redirect the output.   You could use this option in a batch file to check whether any messages are waiting in your mailbox and if there are, run POPmail in interactive mode to retrieve and read them.

For example, to have POPmail use the configuration file in directory C\POP77 and run in a batch file so POPmail will report the number of messages waiting, you would use the following command at the DOS prompt when starting POPmail

        POPMAIL   /BATCH   /PC\POP77

This sample batch file runs POPmail in interactive mode only if there are messages waiting

        @POPMAIL   /BATCH   >NUL
        @IF NOT ERRORLEVEL 1 GOTO QUITNOW
        @POPMAIL
        QUITNOW

8.6   Overloaded Buttons

An overloaded button is a software button which performs a new function (other than the function originally intended) if the Shift key is held down while the software button is activated.

Shift-Send
Shift-Send will cause POPmail to make a copy of your outgoing message regardless of the setting chosen in the Preferences dialog box.

Shift-Discard
Shift-Discard will discard a message without further prompting.

Shift-Enclose
Shift-Enclose will allow you to append an ASCII text file to your outgoing message.

9. Summary and Cautions

POPmail is designed to give networked microcomputer users 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 mixed Macintosh and PC computing environments.

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

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

9.1   Acknowledgments

We wish to extend our thanks to Borland International of Scotts Valley, California, for continued excellence in the enhancement of their Turbo Pascal product.   We developed POPmail Version 2.0 using Borland's TurboVision, an object-oriented library of special-purpose routines provided with Borland's newest release of Turbo Pascal, Version 6.0.

For the use of the Clarkson Packet Drivers, the foundation on which our network products are based, we gratefully acknowledge Clarkson College of Potsdam, New York and Dr. Russ Nelson.

For many helpful comments and ideas as well as selected code segment contributions, we would also like to thank Phil Burns of Northwestern University.

10. Miscellaneous Technical Issues

10.1   Using POPmail with Novell

Version 9.x of the Clarkson packet drivers will work with Novell NetWare.

First, you must access Novell NetWare by using a special IPX.   It requires
that you SHGEN a new one using the driver from BYU to create the interface
between the packet driver and NET3/4/5/X.   The BYU_IPX is a generic IPX that works with any of the boards that use the packet driver, so if you have a mixture of 3COM, Novell Ethernet, and other boards you just need the appropriate packet drivers and the BYU version of the IPX.

Second, to configure the packet driver to work with Novell NetWare, simply add the -n switch to the command line immediately after the command to invoke the driver, before any other parameters.   For example, to invoke the packet driver for the 3COM 503 board, allowing for use with TCP/IP and Novell NetWare, you would use the following command line

```
        c503.com -n 0x60 3 0x300
```

10.2   Using POPmail with Windows 3.0

Version 9.x of the Clarkson packet drivers will work with Microsoft Windows 3.0.   To
configure the packet driver to work with Windows 3.0 or greater, add the -w switch to the
command line immediately after the command to invoke the driver, before any other
parameters.   This allows you to use Windows to invoke POPmail, Telnet, ftp, or tn3270
directly.   For example, to invoke the packet driver for the 3COM 503 board, allowing for
use with TCP/IP and to work with Windows 3.0, you would use the following command

```
3c503.COM -w 0x60 3 0x300
```

If you want to use Windows and Novell NetWare together, your command lines would look
like this

```
BYU_IPX.COM
3c503.COM -n -w 0x60 3 0x300
```

In addition, you will need to set up a separate Windows .PIF file for each of the applications
(POPmail, Telnet, ftp, and tn3270) with the following options so that Windows can run these
packet-driver-dependent applications correctly

```
Full screen                        ON
Background execution               ON
Close Window on Exit               ON

Under "Advanced..."
      Background priority        100
      Detect Idle Time           OFF
      Lock Application Memory    ON
      Video Memory               TEXT
      Monitor Ports               OFF (i.e., all boxes off)
      Retain Video Memory        ON
```

The .PIF file should point to the .EXE files for each of these programs.

11. POPmail Questions & Answers

This section presents questions we are asked frequently concerning POPmail/PC.

Q.   Does POPmail PC have a "find message" feature?

A.   Currently, the answer is "no".   We are working on a message search, organizing, and archiving facility.   Right now the "database"-like features are modest.

Q. What can I do if POPmail says "Not enough memory
to run POPmail"?

A. The current version of POPMail needs at least 512K of free memory.   If you have a lot of TSRs or your network software has a large resident portion, then POPMail will have trouble running.   Do a "chkdsk" or "mem" command to see how much free memory is left for applications.   You may need to remove some device drivers or reduce the number of files or buffers.

Q. How do I define a group in the "Edit Groups" window?

A. Groups are defined by listing a group name, followed by one or more spaces, followed by a group member's mail address, followed by one or more spaces, followed by another group member's mail address, etc. Put a blank line after the group to separate it from the other groups you have defined.

Q.   Is there a way to include a full name as a comment in the group listing so that they can be more easily identified?   For example for the alias "chairman" could I define a group as follows?

          chairman   jb@finsandfur.fw.umn.edu (Joe Blow)

A.   No, there is no comment facility to do what you are attempting to do by putting a name in parentheses.   We suggest that you define the alias as the person's name. Then you can easily remember who it is when selecting the Select group... pull-down menu. For example, we suggest that you define the alias like this

     Joe_Blow   jb@finsandfur.fw.umn.edu

By doing this, you can select Joe_Blow off the list of groups rather than trying to remember who "chairman" is.

Note   Spaces are separator characters; that is, they mark the end of names.   To denote a space within a name, use the underline character where a space would normally occur. For instance, define a group called AIS_CSO_Nameserver_Dude like this

    AIS_CSO_Nameserver_Dude   j-kuch@vm1.spcs.umn.edu

Q.   We are running a POP3 server on port 110.   Can we use POPmail with this POP port?

A.   Yes.   To have POPmail use a port other than the default 109 port, simply specify the desired port in the Advanced Configuration Parameters dialog box (access this dialog box by activating the Advanced... software button in the Configure dialog box).

Q.   I just FTP'd POPmail/PC and tried to run the program. I get the error message "TCP Driver did not load".   What is wrong?

A.   This can happen if you forget to specify binary mode when doing the ftp.   Before you enter the "get" command, enter "binary."   Sometimes we also see this problem if there are too many gateway hops, resulting in the file getting mysteriously truncated along the way. For some reason, we've seen this problem frequently when people ftp POPmail from our server to their site in Canada.   Other than forgetting to specify binary mode, we still are not sure why this phenomenon occurs. Often subsequent attempts will succeed where the first try failed.   After you ftp, just make sure that you have the complete file by checking that you received the correct number of bytes as shown by the directory command (ls).

If all else fails, many people with this problem have had success when they ftp the compressed file version of POPMAIL.EXE (popmail.exe.Z).

Q.   In what format is the POPmail/PC manual?

A.   The manual is in 3 formats (1) man.hqx is in binhex format for Microsoft Word 4.0 on the Macintosh;   (2) man.rtf is in RTF (rich text) format, so you should be able to download and read this file with any version of Microsoft Word for the IBM; and (3)   man.txt is a straight-ASCII version of the manual.

Q.   I have a friend who gave me his access number on CompuServe.   Can I use POPmail to send him mail?

A.   • From internet to Compuserve
    Compuserve addresses are of the form   nnnnn,nnnn   where n is 0 to 9.   For example, 72555,3235.   Change the comma to a period and append @compuserve.com and you've got it.   For example, to send to 72555,3235 you would address your mail to
        72555.3235@compuserve.com
    • From Compuserve to internet
    Preface the internet address with >INTERNET and you're done.   For example, to send mail to a user name fred with an account on an internet mail server named boombox.micro.umn.edu from Compuserve you would address mail to
        >INTERNETfred@boombox.micro.umn.edu

Q.   Does POPmail support BOOTP?

A.   We do support automatic configuration through BOOTP.   BOOTP is a protocol that lets you define all the parameters, IP address, gateways, and name servers at one central server. POPmail/PC interrogates the BOOTP server if the microcomputer IP address is 0.0.0.0.   In this way new users can just start up POPMail without knowing any IP numbers and POPMail will configure itself.

Q.   We have more than one Packet Driver loaded.   POPmail can't seem to find the correct packet driver. What's going on?

A.   POPmail uses the first packet driver it finds.   Make sure the packet driver POPmail needs has the lowest interrupt number. You can ensure success by assigning it the lowest possible interrupt number   0x60.

Q.   Does POPmail/PC work on an AppleTalk network?
A.   We have tested POPmail with token ring and ethernet cards.   POPmail does not currently support LocalTalk, although we may add LocalTalk support at sometime in the future.

Q.   When I tried to use the 3C503 packet driver I was required to change the jumpers on the 3C503 to allow shared memory.   This allowed me to run POPMAIL which looks like a real good product.   However when I reconfigured the PC to boot with PC-NFS it wouldn't work unless I set the jumpers on the 3C503 back to "memory disable" (note I didn't try to load 3C503 packet driver).

A.   The packet driver for this particular hardware requires memory sharing, while PC-NFS disallows it.   One of our users recently learned from SUN of an undocumented "switch" (/m4) that can be used when loading the PC-NFS drivers for the 3c503 card.   For example, when you boot up for PCNFS, you load the following

Device= \NFS\DRIVERS\VECIE6.SYS /I2 /T2 /M4

This switch allows the PC-NFS drivers to use the 3c503 card jumpered for shared memory. This way one can use either the Clarkson drivers for telnet or POPmail or the PC-NFS drivers.   Of course, one can not use them at the same time; separate reboot sequences are still necessary.   But at least one needn't re-jumper the card to alternate between the two usages.

Q.   Can you run PC NFS and POPmail together?

A.   No, they can't both be running at the same time. PC-NFS and POPmail each have their own TCP protocol code.   They end up confusing each other.   The ideal solution would be for IBM to mandate one TCP driver that all applications must use, just as the packet-drivers are common low-level drivers all net applications use.

Unfortunately, we are not aware of a simple common TCP driver which all TCP programs accept as standard.

You'll have to set up some way of switching autoexec.bat files to selectively load PC-NFS or POPmail, but not both at the same time.

Q.   Can you make POPmail a TSR?

A.   A POPmail TSR would be nice in theory, but it would take up about 80k of RAM.   Most users don't want to or can't lose 80k without wreaking havoc upon their main applications. So while it would be an interesting exercise in programming, it's not too practical on DOS machines.   However, POPmail does have a batch mode that you can use to have POPmail report the number of messages waiting for you on the server (see the manual for further information).

Q. Where are the POP2 protocols described?

A. The description of the POP2 protocol is in RFC937.

Q.   Does POPmail use password encryption?

A.   We added DES encryption to the login sequence.   Our POP2 server makes up a random key and sends it to the client.   The client encrypts the password with the key and sends it to the server.   The server can then unencrypt the password and check it. By choosing the right defaults, we can keep the server and clients interoperable, i.e., the client can recognize our "extended" POP2 server by the presence of a key in the server's welcome message. Therefore the client sends encrypted passwords to extended servers, and regular clear passwords to plain POP2 servers.   Similarly, our server accepts both encrypted and clear passwords interchangeably.   Therefore you can mix and match.   Our clients can talk to a standard POP2 or POP3 server, and other clients such as Eudora can talk to our server.   As another level of security, if our client determines that it is talking to a standard POP2 server, and must send the password in the clear form, it sends the password 1 character per packet with long random delays between packets, instead of sending it all in 1 packet.   This disguises the password from all but the most knowledgeable of network peekers.   You can get our extended POP2 server by anonymous FTP from boombox.micro.umn.edu.   It is in /pub/POPmail/unix.

Q.   We are using POPmail/PC and when sending a file attachment to a Macintosh client that is using Eudora, the Macintosh client gets info stating the file needs to be BINHEXed. Why?

A.   There is a slight incompatibility between Eudora and POPmail's method of sending attachments.   Eudora will sometimes complain that there may be extra characters at the end of the attachment, or some similar message.   You can ignore the message as the attachment

is okay.   It is just that POPmail sends one harmless extra character in certain cases.   This triggers an error message from Eudora.

Q.   Where is the complete collection of the packet drivers?

A.   A complete collection is available via anonymous ftp from   sun.soe.clarkson.edu.

Q.   I am trying to install POPmail and I can't seem to connect to our POP server.   What's wrong?

A.   It's hard to say.   In order to tell whether something is wrong with the way your POP server is configured, try connecting to our POP server first.   We have an account on our POP server which is specifically designated for testing POPmail.   Our POP server lives on boombox.micro.umn.edu (IP address 128.101.95.95).   User Name is testmail and Password is testmail.

Q.   Is there a version of POPmail that allows you to get your mail via a dialup connection? I'm not interested in something that works on dialup slip, but rather something that just establishes a clean datapath between the PC and the pop and smtp mail servers...much like Eudora for the Macintosh allows you to do.

A.   The answer to your question is, "No, you cannot do what you ask."   POPmail works over a SLIP connection for dialup use.   SLIP allows you to use network applications (POPmail, internet gopher, telnet, ftp, etc.) from home with exactly the same user interface as when running these over a LAN connection.   Another advantage with SLIP is that you have end-to-end error detection (something not true of Eudora's dialup access method).

Q.   How are Swedish characters mapped?

A.   Before we answer your question, let's review how computers deal with characters.   Your computer stores each character in an eight-bit chunk called a byte.   Depending upon the number stored in a byte, the byte can represent one of 256 characters.   A standard called ASCII has standardized the first 128 numbers to represent each of the characters necessary for the English language plus important symbols such as the dollar sign, period, and comma, and each of these numbers has been assigned a number.   For example, the number stored in the byte representing the dollar sign has been assigned the number 36.   This number is the same across all manufacturers, and this consistency makes it possible to exchange characters accurately from computer to computer.   Unfortunately, there is no standard for representing characters used in many other languages.   Since computer manufacturers want to sell computers to people who need other characters in order to communicate in their own languages, each manufacturer picks some arbitrary number beyond the first 128 numbers reserved by ASCII to represent each foreign character.   For example, the Swedish language uses a character called an "umlauted a" (an "a" with two dots over it).   An IBM computer uses the number 132 to represent a lower-case umlauted "a", whereas a Macintosh uses the number 221 for this same character.   Obviously, this difference causes a problem when

transferring text between an IBM PC and a Macintosh.   But, there is even a larger problem. When you send mail electronically, many mail programs will ignore any characters not part of the first group of 128 characters defined by the ASCII standard.   For this reason, many countries like Germany, France, and Sweden have decided to sacrifice certain ASCII characters in order to re-map or re-define these characters to accommodate the letter characters they need.   For example, the tilde character (~) is mapped to represent an umlauted "u" (a "u" with two dots over it) for the Swedish language character set.   POPmail makes the conversion automatically, so that two people using POPmail can exchange E- mail written in Swedish without having letter characters appear as tildes or curly brackets at the other end.   Here are two tables showing how POPmail maps characters for the Swedish language when receiving and sending a POPmail message.   The IBM character code for each character is shown in the right-most column

Incoming Characters

```
{ --> ä   (a with 2 dots above)      132
} --> å   (a with a ring above)      134
| --> ö   (o with 2 dots above)      148
~ --> ü   (u with 2 dots above)      129
` --> é   (e with accent)            130
[ --> Ä   (A with 2 dots above)      142
] --> Å   (A with a ring above)      143
\ --> Ö   (O with 2 dots above)      153
^ --> Ü   (U with 2 dots above)      154
@ --> É   (E with accent)            144
```

A.   Outgoing Characters

```
ä --> {
å --> }
ö --> |
ü --> ~
é --> `
Ä --> [
Å --> ]
Ö --> \
Ü --> ^
É --> @
```

Q.   I've installed POPmail for testing and I noticed that in the initial setup (configuration), I do not get a prompt for 'Full Name'.   Is this normal?

A.   That is normal.   POPMail gets your full name from the SMTP server.   This is to

discourage forged mail.

Q.   What language is POPmail written in?

A.   Turbo C version 1.5, Turbo Assembler 1.0, and Turbo Pascal 6.0

Q.   How is the software in POPmail/PC layered?

A.   It is arranged like this

```
        POPmail main program (user interface)
                |
                |
        net mail (same code for Macs and IBMs)
                |
                |
        ibm tcp
                |
                |
        seg (all written in C and ASM)
                |
                |
        packet driver
```

The SEG code is really a C program that is loaded into a segment by the Pascal program, in this case POPmail.   The Pascal program then transfers control to the C program (written in the small memory model so it fits into one segment).   The C program then hooks an interrupt and returns control to the Pascal program.   When the Pascal program wants a TCP function it calls a routine in ibmtcp that then calls the C program via an interrupt.   SEG provides simple functions like open, close, read and write.

POPmail/PC

User Manual
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