

# 3Com EtherSeries

---

Local Network Communication for Personal Computers

# **EtherSeries User's Guide**



---

## RELEASE NOTES

January 25, 1985

This document has three purposes: It highlights some key information, provides information not currently contained in your documentation, and lists some known problems that you may encounter when you use your 3Com products.

For easy scanning, these Release Notes are organized by subject, with the topic of each Note in capital letters at the beginning. Use them if you have a problem with your software or hardware, or scan them to find information that will supplement your User or Administrator's Guides. Where problems exist, solutions or work-arounds for them are given.

If you have any questions regarding information in these Release Notes, call the 3Com Customer Support Hotline at (415) 964-5561, or the 3Com main number (415) 961-9602.

---

### TABLE OF CONTENTS

Minimum Memory Requirements	3
EtherShare/PC Version 2.4	
Using Different Versions of EtherShare User and Server Software	4
Using DOS 2.1 or 3.0	4
Creating Volumes with DOS 3.0	5
Applications that Interfere with the Standard Mode Server	5
Using the "ES UMOD" Command	5
Using the Tallgrass Disk Backup with the Standard Mode Server	5
Problem Local Printing without EtherPrint	5
Using the CONFIG Utility	5
Using EtherShare/PC with Non-IBM Fixed Disks	6
Using a Tallgrass Disk on a Server	7

## RELEASE NOTES

Using an Alloy PC-Stor Disk on a Server	9
Using a Mountain Hard Disk on a Server	10
Errors Reading From or Writing to Files on EtherShare Volumes	10
System Security Options	11
<b>EtherShare/AP Version 2.2</b>	
Backup on the AP Server	12
<b>EtherPrint/PC Version 2.4; EtherPrint/AP Version 2.4</b>	
Installing New Versions of the EtherPrint Server Software	12
Expansion Card for Serial Printing	12
Using the EP /PLOT Parameter	13
Using the EP /DIRECT and /HOLD Parameters	13
Specifying a Time Interval to Maintain a Direct Link Without Printing	13
Direct Printing with the HP LaserJet	13
Form Feed Suppression with /PLOT	13
Using Direct Link with Incompatible Versions of EtherPrint User and Server Software	13
Additional Error Messages	14
Parts of Print Files Lost	14
Beginnings or Ends of Print Files Lost	14
Blank Pages or Missing Last Line of Output	15
EtherPrint Not Ready Error Writing Device PRN	15
Printers and Word Processors that Require an 8-Bit Character Representation	15
<b>EtherMail Version 2.4</b>	
Lost EtherMail Messages	16
Installing EtherMail on the PC Server	16
<b>EtherMenu Version 2.4</b>	
Using EtherMenu Definition Files from a Public Volume	16
Using the TOUR Menu Item	17
Using the Network Volumes and Printers Menu	17
Limitations	17
Menu Selection	18
Characters Showing Current Status	18
Getting the Latest Information on Users and Printers	18
Currently Linked Printers Displayed	18
Automatic Unlinking of Volumes and Printers	18
Clearing Error Messages	19
Additional Error Messages	19
<b>Remote EtherMail Version 2.0 User Software</b>	
No Response when Using Hayes 1200B Modem Card	20
<b>EtherStart Version 1.0</b>	
Starting From Other User's Public Volumes	20

**MINIMUM MEMORY REQUIREMENTS**

To determine the amount of memory you need for your PC servers and user workstations, you need to add up the memory used by each application you plan to run, using the amounts given below, and then round up to the nearest 64K bytes increment. All figures are given in K bytes (KB).

**Server PCs:**

**Required:**

**One of:**

DOS 2.1	24KB
or	
DOS 3.0	38KB
EtherShare	160KB

**Optional:**

EtherPrint (server)	60KB
EtherMail (server)	32KB
Installable device driver for non-IBM disk	Variable
Local user applications (Standard mode only)	Variable

**User (workstation) PCs:**

**Required:**

**One of:**

DOS 2.1	24KB
or	
DOS 3.0	38KB
Ethernet driver (ENET)	8KB
Local user applications	Variable

**Optional:**

EtherMenu resident (if EtherMenu is installed)	17KB
--	------

Space for user applications, used only at the time the application is run, should be added for standard mode servers and user workstations. Space requirements for EtherSeries applications are as follows:

EtherShare (ES)	41KB
EtherPrint (EP)	26KB
EtherMail	123KB
EtherMenu	104KB

Since these applications are run one at a time, you need to include only enough space for the largest one you wish to use.

## **RELEASE NOTES**

**Additional memory may also be required if you are using non-IBM fixed disks with installable device drivers. Refer to the reference materials supplied with the disk.**

**If you have increased DOS or EtherShare I/O system buffers above the default number provided, be sure to include memory for the additional buffers. See the EtherShare/PC Administrator's Guide, Appendix E, for more information.**

**If you don't have enough memory in your PC running as a user station or server, the ES and MAIL programs may freeze the machine. Check available memory and memory requirements if this happens.**

---

### **ETHERSHARE/PC VERSION 2.4**

#### **USING DIFFERENT VERSIONS OF ETHERSHARE USER AND SERVER SOFTWARE:**

**It is recommended that you use the same versions of EtherShare server software on all PC servers and EtherSeries user software on all Standard mode servers, system volumes and boot disks or diskettes. If this is not possible, then the local user of a Standard mode server must be careful to use the same revision level of EtherShare user software (ES.COM) and the Ethernet driver (ENET.CNC); that is, 2.4 versions should not be mixed with versions prior to 2.4. The best way to be sure this happens is for the local user to use the system volume on the Standard mode server s/he is using and to link only to data volumes on any servers running different revision levels of the EtherShare server software.**

#### **USING DOS 2.1 OR 3.0:**

**It is recommended that the same version of DOS (2.0, 2.1 or 3.0) be placed on workstation PC disks, diskettes and system volumes on the server. If different versions are used, some programs such as CHKDSK will not work when run off the server volumes. If you wish to have some workstations running one version and some another, it is best to establish two system volumes, one with each version, and to link to the volume with the same version as the linking workstation is using. For a DOS 3.0 system volume, the name SYS3 is recommended.**

## RELEASE NOTES

### CREATING VOLUMES WITH DOS 3.0:

If a volume is formatted with DOS 3.0 and subsequently used with DOS 2.1, unpredictable results will occur.

### APPLICATIONS THAT INTERFERE WITH THE STANDARD MODE SERVER:

XES (the security version of ES), EtherTerm and the Xerox Network Services/IBM PC products cannot be used by the local user on a standard mode server. In addition, Sidekick and Networked VisiWord have been found to conflict with the standard mode server and should be used only on workstations not being used simultaneously as network servers. Compaq BASIC and BASICA are now safe to use on the standard mode server; they no longer interfere with its operation.

### USING THE "ES UMOD" COMMAND:

When the PC server is running in Standard mode, a user who is logged in at the server can modify another user's password. This allows user passwords that have been forgotten or belong to a user no longer on the network to be deleted.

A user who is logged in at the server must supply a user's name to change the associated password. The command syntax is "ES UMOD username (newpassword)", instead of "ES UMOD (newpassword)" as described in the EtherShare User's Guide.

### USING THE TALLGRASS DISK BACKUP WITH THE STANDARD MODE SERVER:

Running the Tallgrass backup program while the standard mode server is in operation can damage the contents of the disk. To perform backups, first shut down the server, reboot, and select the "EXIT TO DOS" selection from the menu. Then run the TGBACKUP program to make backup copies of the volumes.

### PROBLEM LOCAL PRINTING WITHOUT ETHERPRINT:

If the local user of a standard mode server attempts to use the DOS PRINT command, the server will notify the user that the PRINT command conflicts with the server and the local user will be unable to proceed. The server is still running, but all users should log out and the server should be restarted.

### USING THE CONFIG UTILITY:

The EtherShare/PC Administrator's Guide contains irrelevant information on page B-16. Ignore this page.



## RELEASE NOTES

### USING ETHERSHARE/PC WITH NON-IBM FIXED DISKS:

Your IBM PC Network Server can be built around an IBM PC XT, PC AT, or any IBM PC using non-IBM disk drives. However, some adjustments may be required due to memory requirements and hardware configuration.

Any disk drive that uses an installable DOS 2.0, 2.1, or 3.0 device driver can be used with the EtherShare/PC server software, provided there are no DMA channel, interrupt, or I/O address conflicts. (Refer to the EtherShare/PC Administrator's Guide, Appendix B, for information on reconfiguring the hardware and software to resolve difficulties.)

There are two general requirements for compatibility with non-IBM disk drives:

- The drive must use an installable DOS 2.0, 2.1 or 3.0 compatible device driver.
- Your server may need additional memory - usually 64K over the amount you need for the server and local user functions.

To install a non-IBM fixed disk:

1. Install your disk drive according to the manufacturer's specifications. This will include creating a diskette for booting the PC and loading the driver for the fixed disk. You only have to create a boot diskette for disks that cannot be booted directly. Some non-IBM disks work just like an IBM-XT; however, this depends on the age of your PC and which disk you are using.
2. Load all DOS programs and utilities into the root directory of the fixed disk.
3. Install the EtherShare/PC Server Software using the /FLOPPY option described in the EtherShare/PC Administrator's Guide, Section 2. Refer to the section "In a Non-Standard Configuration" for information on creating a server EtherShare/PC boot diskette.
4. After you have installed the EtherShare/PC Server Software, you must reboot the PC using the boot diskette that contains the drivers for the disk. You must then merge your regular boot diskette (created when you installed your disk drive) and your server EtherShare/PC boot diskette (created when you installed the EtherShare/PC Server Software). To do this:

## RELEASE NOTES

a. Add the contents of the CONFIG.SYS file from your fixed disk's boot diskette to the beginning of the file CONFIG.DED, to the beginning of the file CONFIG.STD, and to the beginning of the file CONFIG.SYS on your server EtherShare/PC boot diskette.

b. The CONFIG.SYS file on the fixed disk boot diskette will have a line in it with the format:

device = file.ext

Copy the file specified in "file.ext" from the fixed disk boot diskette to the server EtherShare/PC boot diskette.

c. If your fixed disk boot diskette contains an AUTOEXEC.BAT file, add the contents of it to the beginning of the AUTOEXEC.BAT file on the server EtherShare/PC boot diskette.

5. Reboot again, using the newly modified server EtherShare/PC boot diskette. Use this diskette whenever you boot your PC.

6. Continue with the installation instructions under "Preparing EtherShare for Use" in the EtherShare/PC Administrator's Guide, Section 2.

For additional information on installing some specific non-IBM disks, see the information below and the Joy of Networking Cookbook, available from your 3Com dealer.

### USING A TALLGRASS DISK ON A SERVER:

The Tallgrass fixed disk drive requires the following changes or modifications:

1. You will need an additional 64K of memory over the amount needed for the server and local user.

2. The fixed disk drive must boot from a diskette, then bring the server software up from the fixed disk drive, as follows:

a. Install the Tallgrass drive using DOS software from Tallgrass. When this installation is complete, you will have a file called "TGTBIO.COM", which is the DOS driver for the Tallgrass disk drive.

b. Format the Tallgrass disk drive leaving the CACHE and LANDING ZONE options OFF. Use the default sector size of 512 bytes. Install the EtherShare software using the "/FLOPPY" option in order to create a server EtherShare/PC boot diskette. (Refer to the EtherShare/PC Administrator's Guide, Section 2, for more details.)

## RELEASE NOTES

c. Copy the file "TGTBIO.COM" to the server EtherShare/PC boot diskette. (Remember to use the file that was modified when installing the drive and not the file on the Tallgrass software diskette.)

d. You must now edit the files "CONFIG.DED", "CONFIG.STD", and "CONFIG.SYS" on the server EtherShare/PC boot diskette to include the Tallgrass driver. Add a line to the beginning of each of these files, as follows:

```
device = tgtbio.com
```

This causes DOS to load the Tallgrass driver during the boot process.

**NOTE:** If you need to rerun the Tallgrass utilities, you must edit the CONFIG.SYS file and temporarily remove the line:

```
device = ansi.sys
```

Reboot the system and run the utilities. Removing this line allows the utilities to display information on the screen in the correct format. This is necessary since the EtherShare software uses the standard ANSI terminal cursor controls when displaying information on the screen, and the Tallgrass utilities do not.

When you want to restart the server software, remember that you must reinsert the line "device = ansi.sys" into the CONFIG.SYS file and reboot the system.

3. The Tallgrass disk drive uses interrupt line 3, which is the default for the EtherLink card and EtherShare software. Therefore, you must:

- a. Change the EtherLink card to use interrupt line 5, and
- b. Modify the EtherShare software to use interrupt line 5 (refer to the EtherShare/PC Administrator's Guide, Appendix B for instructions).

OR

- a. Modify the Tallgrass disk to use interrupt line 5. If you want to modify the Tallgrass disk instead of modifying the EtherLink card, refer to the documentation supplied with the disk.

## RELEASE NOTES

4. The Tallgrass disk drive uses DMA channel 3, which cannot be changed. The factory default for the EtherLink card and the EtherShare software is DMA channel 1. Unless the EtherLink card or software have been previously modified, no action is necessary.

### USING AN ALLOY PC-STOR DISK ON A SERVER:

The Alloy PC-STOR fixed disk drive requires the following changes or modifications:

1. The I/O address in the PC-STOR interface card must be set to address hex 344 (switches 1, 2, 4, and 8 open, the rest closed) on the dip switch.
2. The fixed disk drive will normally boot without a diskette. However, to install the EtherShare software after formatting the disk according to the instructions contained with the disk, you need to do the following:
  - a. Turn the power off and remove the disk interface card from the PC.
  - b. Remove the boot chip from the ALLOY interface card. (This chip is located above the IDXS-PC label.) Reinstall the card into the PC.
  - c. Reboot the PC with the boot disk you created for the PC-STOR according to the manufacturer's instructions.
  - d. Install the EtherShare Software with the /FLOPPY option as described in the EtherShare/PC Administrator's Guide, Section 2. When you are prompted for the boot floppy, insert the ALLOY boot disk in drive A:.
  - e. When the installation process is complete and you are told to reboot, instead, turn the power off and replace the boot chip on the ALLOY interface card. Reinstall the card and reboot without a diskette.
3. In order to boot EtherShare from the ALLOY hard disk, you must reconfigure some of the files contained in the Virtual Floppy (Boot Volume) of the ALLOY hard disk. Insert the ALLOY boot diskette into drive A: and type:

AVF RW

## RELEASE NOTES

Remove the diskette from drive A: and insert it into drive B:. Then copy the entire boot diskette to the Virtual Floppy by typing:

```
COPY B:*.* A:/V
```

Remove the diskette from drive B and store it in a safe place. Use this disk later if you wish to boot the server PC without running the EtherShare software.

4. You must now edit the files "AUTOEXEC.BAT", "CONFIG.DED", "CONFIG.STD", and "CONFIG.SYS" on drive A:. Add a line to the beginning of AUTOEXEC.BAT as follows:

```
AVF RW
```

Add a line to the beginning of each of the other three files, as follows:

```
DEVICE = ADRVR.SYS
```

This causes DOS to load the Alloy driver during the boot process.

5. Since you have two volumes on the Alloy hard disk (drives C: and D:), you must install a network expansion peripheral in order for EtherShare to use both volumes. This is done the same way as installing EtherShare to use a second IBM hard disk on an IBM PC XT server. See the EtherShare/PC Administrator's Guide, Section 5.

### USING A MOUNTAIN HARD DISK ON A SERVER:

To use a Mountain hard disk on a server, follow the manufacturer's instructions, included with the disk, installing the disk as drive C:.

### ERRORS READING FROM OR WRITING TO FILES ON ETHERSHARE VOLUMES:

On an IBM PC AT server, you may see one of the following error messages:

```
Fatal Error... lookupb: ERROR[y] mH reading sector xxxx, drive n:
```

or

```
Fatal Error... flushit: ERROR[y] mH on writing sector xxxx, drive n:
```

## RELEASE NOTES

This means that you may have bad blocks on the volume that were not detected by the AT format program. To verify this:

(1) Load DEBUG

(2) Type:

```
- L 2000:0 n xxxx 1
```

where n is the drive the error occurred on (0 = A:, 1 = B:, 2 = C:, etc.) and xxxx is the sector that was read or written. (In the message, the value m is the driver error code that occurred.)

You should get a critical error from DOS that matches the driver error code m in the failure message. If this happens, you have bad blocks on your disk that you need to keep from allocating to your files. To keep the bad block from surfacing, you can either re-format the hard disk on the AT, which will usually catch any new bad blocks, or you can try to allocate the bad space to a file you will never use. To do the latter, localize the file being read or written when the error occurs, rename the file to a name that is unlikely to conflict with any other file name, and hide the file to keep it from being accessed. This approach will probably result in your losing some good disk space along with the bad, but the bad block will be inaccessible. Do not delete the file if you use this method, or the EtherShare volume in which the file resides, or the bad blocks will surface later in another file.

### SYSTEM SECURITY OPTIONS:

There is only one version of Netlink, which gives access to network resources from the Network Volumes and Printers Menu. This version, called NETLINK, does NOT support user or volume creation, modification, or deletion.

When replacing ES.COM with XES.COM, be sure to change the name of XES to ES. In addition, in EtherMenu you need to replace the file TOUR.BAT with the file XTOUR.BAT and to change the name of XTOUR to TOUR.

## RELEASE NOTES

---

### ETHERSHARE/AP VERSION 2.2

#### BACKUP ON THE AP SERVER:

(1) You cannot restore a volume for a user that has a password. Have the user remove the password and then restore the volume. (2) You cannot print a copy of the backup listing. (3) Since the AP Server does not provide volume lockout when a backup process is taking place, backups should be performed when users are not logged in. If users are changing the data on the disk while it is being backed up, data may be lost. Use the automatic backup feature to run backups late at night or during slack periods.

---

### ETHERPRINT/PC VERSION 2.4 ETHERPRINT/AP VERSION 2.2

#### INSTALLING NEW VERSIONS OF THE ETHERPRINT SERVER SOFTWARE:

In addition to terminating all links with user PCs, the installation process removes the current printer configuration information and reset sequences. After installing a new version of the EtherPrint/PC or EtherPrint/AP Server Software (or re-installing an existing version), you must reconfigure your printer(s). Note the reset sequence currently set for the printers before installing the EtherPrint server software. The current reset sequence may be viewed by displaying the "Reconfigure EtherPrint" menu.

#### EXPANSION CARD FOR SERIAL PRINTING:

The following serial cards have been found to work with the HP LaserJet attached to an IBM PC XT:

IBM Serial Card  
AST Six Pack

The following serial card has been found to work with the HP LaserJet attached to an IBM PC AT:

## RELEASE NOTES

### IBM Serial/Parallel Adapter Card

The LaserJet works only with the primary (H'3F8') serial port, not the secondary (H'2F8') port. Refer to the documentation supplied with the serial card.

#### USING THE EP /PLOT PARAMETER:

The EP /PLOT parameter does suppress the banner between print requests, but it does NOT delay printing until another EP LINK or EP UNLINK occurs. If you wish to delay printing also, use EP /PLOT /HOLD.

#### USING THE EP /DIRECT AND /HOLD PARAMETERS:

The EP /DIRECT and /HOLD parameters cannot be used at the same time. If an attempt is made to use them together, a message is displayed and the link is not established.

#### SPECIFYING A TIME INTERVAL TO MAINTAIN A DIRECT LINK WITHOUT PRINTING:

If you specify a time interval to maintain a direct link without printing that is less than 10 minutes or greater than 200 minutes, EtherPrint will display a message indicating that the value is out of the valid range and will use the default value of 10 minutes in establishing the link.

#### DIRECT PRINTING WITH THE HP LASERJET:

If you use escape sequences in documents for special print formatting and are direct printing on the HP LaserJet, the printer may not recognize the sequence. The output will be terminated at the location of the escape sequence.

#### FORM FEED SUPPRESSION WITH /PLOT:

Using the /PLOT option suppresses the form feed at the end of the print job.

#### USING DIRECT LINK WITH INCOMPATIBLE VERSIONS OF ETHERPRINT USER AND SERVER SOFTWARE:

You can direct link only if you are using version 2.4 software on both the user workstation and the server. If you try to direct link to a server with version 2.2 or earlier software, EtherPrint will display the following message:

\*\*\* <SERVER> not responding.



## RELEASE NOTES

The link will not be established. If you try to direct link using version 2.2 or earlier user software, the /DIRECT parameter will not be recognized.

### ADDITIONAL ERROR MESSAGES:

The following messages may be encountered during printing:

Device not ready writing to device PFN

The server is not responding so EtherPrint cannot send data to the spool file. Check the server to make sure it is operational.

Write fault writing to device PRN

The server is responding but cannot device PRN send data to the spool file. Make sure there is space on the server disk for the spool file, and, if so, use CHKDSK to check for bad sectors on the disk.

The following message may be encountered after an attempt to direct link to a printer:

26 - Printer busy, can't direct link now

Direct link can be done only when the printer is not in use. Try again when the printer is not busy.

### PARTS OF PRINT FILES LOST:

If you are using a word processor that sends a printer initialization sequence before or after printing a document, it is possible for this initialization or deinitialization sequence to lose the beginning or end of the document. This most notably occurs using WordStar with a Diablo 630 printer. The problem may be corrected by removing the printer initialization and deinitialization sequence that is sent by the word processing software. (WordStar allows you to do this in the WINSTALL program.)

### BEGINNINGS OR ENDS OF PRINT FILES LOST:

If you have a printer that has internal buffering you may lose printed output at the beginning or end of the files. This occurs when you include your printer's reset codes in the EtherPrint reset sequence for that printer. Correct this problem by using a carriage return (octal 015) instead of the reset sequence. To use a carriage return, you will need to replace the reset sequence provided by 3Com. Follow the

## RELEASE NOTES

instructions in the EtherPrint Administrator's Guide under "Reconfiguring EtherPrint." When the the reset sequence is requested, Type ESC and enter "\015" as the reset sequence.

### BLANK PAGES OR MISSING LAST LINE OF OUTPUT:

Some word processors, including WordStar, send termination sequences that do not end with linefeed and thus do not properly signal to EtherPrint to print the last line of the file. If these sequences are not terminated with a linefeed character (decimal 10 or hex 0A), they are kept in your PC's memory and sent to the printer when you EP UNLINK or ES LOGOUT. This results in EtherPrint printing a blank page or in the last line of output being printed at the start of the next file. To avoid this problem, use the /HOLD option with the EP LINK command and then use EP UNLINK after printing the file with the word processing software. Alternatively, make sure your lines and reset sequences are terminated with linefeeds. The latter can be accomplished with WordStar using the Set Deinitialization Menu in the WINSTALL program.

### ETHERPRINT NOT READY ERROR WRITING DEVICE PRN:

If you get a "Not ready error writing device PRN--Abort, Retry, Ignore?" error during printing, select Abort before unlinking and relinking, not Retry as specified in the EtherPrint User's Guide, Appendix B.

The following applies only to the AP server....

### PRINTERS AND WORD PROCESSORS THAT REQUIRE AN 8-BIT CHARACTER REPRESENTATION:

These require an additional step during installation. Some of the advanced features of word processing software (proportional spacing and sub- and super-scripting) require 8-bit character codes. EtherPrint on the AP server outputs data as 7 bits, with even parity, rather than 8 bits, with no parity, as those printers require. If your word processor does not operate correctly, change the output by running a configuration utility on the server. To run the utility, log in at the console terminal as uadmin:

```
login: uadmin (must be lower case)
```

When the "\*" appears, type "print8":

```
* print8
```

## RELEASE NOTES

When the "\*" appears again, press "ctrl" and "d" at the same time:

\* [ctrl-d]

Some printers will not operate correctly with the 8-bit representation. To set it back to the default, 7-bit representation, follow the same sequence, but type "print7" instead of "print8".

---

### ETHERMAIL VERSION 2.4

#### LOST ETHERMAIL MESSAGES:

If your PC server runs out of disk space on drive C:, it may lose messages sent to users who log into this server for their mail. Messages sent to the server will be successfully delivered to at least one recipient; however they may not be delivered to all users. Check on the amount of available disk space by shutting down the server and running CHKDSK on the server's hard disk C:.

#### INSTALLING ETHERMAIL ON THE PC SERVER:

You cannot install an earlier version of the EtherMail/PC Server Software on an EtherShare/PC Version 2.2 or 2.4 server.

---

### ETHERMENU VERSION 2.4

#### USING ETHERMENU DEFINITION FILES FROM A PUBLIC VOLUME:

To use menu definition files on a public volume such as the system volume, the user must have a private data volume linked; a file called RUNIT.BAT is created on that volume. All other menu definition (.BAT and .DAT), help (.HLP) and executable (.EXE) files can reside on the public volume.

## RELEASE NOTES

When you run EtherMenu (via ESMENU), it will assume the private volume is linked to e:. If you wish to link the volume to a different drive, replace the e: with the appropriate drive id in the following two lines of ESMENU.BAT:

```
menusys e:  
e:runit
```

The volume linked to the specified drive id can be any private volume linked when EtherMenu is run, or a diskette.

### USING THE TOUR MENU ITEM:

Running the "Tour" (option 3 on sub-menu 1, EtherSeries utilities) will change the PATH specification for the user. To change it back to its previous setting, add the appropriate PATH = entry to the Mmc.BAT (default M13.BAT) file that starts the "Tour" option.

**The following applies only to the Network Volumes and Printers Menu...**

### USING THE NETWORK VOLUMES AND PRINTERS MENU:

The following instructions must be executed before running EtherMenu if you wish to use the Network Volumes and Printer menu (NETLINK):

```
TARBUF  
MENUINIT
```

These instructions must be executed in the order presented, and should be inserted into the AUTOEXEC.BAT file. Execution can take several seconds, depending on how large the network is and how many servers are not responding.

When using the Network Volumes and Printers menu, EtherMenu expects NETLINK to be on the current default drive. If you wish to use it from the system volume with menu definition files resident elsewhere, be sure to put the appropriate drive id in the call to Netlink in the Mmc.BAT file that invokes it, as shown in Appendix B of the EtherMenu Administrator's Guide, or include the appropriate drive id in the PATH = entry of the AUTOEXEC.BAT file.

To use the Network Volumes and Printer menu the user must first log in.

### LIMITATIONS:

The Network Volumes and Printers menu lists up to 500 users registered on the network, and up to 25 printers. It shows up to 15 volumes per user.

## RELEASE NOTES

### MENU SELECTION:

Menu items may be selected either with the cursor keys, highlighting and the RETURN key, OR by typing the first letter of the menu item. If the first letter is used, do NOT use the RETURN key.

### CHARACTERS SHOWING CURRENT STATUS:

The volume directory shows currently linked volumes by marking them with a pound sign (#).

The user directory shows currently logged-in users with a pound sign (#). It shows the current selected user whose volumes are shown with an asterisk (\*).

The server directory shows active servers with a pound sign (#) and shows with a hyphen (-) servers that are not responding to requests sent to the network. An asterisk (\*) indicates that the server is being queried for its current list of users and printers.

### GETTING THE LATEST INFORMATION ON USERS AND PRINTERS:

In the Network Volumes and Printers menu, the users and printers registered on a server are usually obtained at boot time. To get an updated copy of a server's users and printers, after selecting SERVER from the Object Selections menu, position the cursor to the desired server in the vertical window. Press the \* key (unshifted PrtSc). That server will be queried for its list of printers and users. Any users or printers that have been added will be shown; however, any users that have been removed will still also be shown.

### CURRENTLY LINKED PRINTERS DISPLAYED:

If you link a printer through EP rather than through the Network Volumes and Printers menu then EtherMenu will show in the Linked Printers window the logical printer id and server name, but the printer number shown will be 0 and the description will be blank.

### AUTOMATIC UNLINKING OF VOLUMES AND PRINTERS:

Any attempt to link a volume, where the user confirms that the link should override an earlier link, will unlink the previously linked volume whether or not the new link succeeds. Any attempt to link a printer will unlink a previously linked printer whether or not the new link succeeds.

## RELEASE NOTES

### CLEARING ERROR MESSAGES:

Error messages are cleared by pressing any regular typing key on the keyboard (that is, NOT shift keys, control keys, alt, or lock keys). This keystroke will not be used in any field.

### ADDITIONAL ERROR MESSAGES:

In addition to the EtherShare and EtherPrint error messages listed in the EtherSeries User's Guide, the following messages may be encountered while running EtherMenu. For more information on how to remedy the problem see the EtherShare User's Guide.

#### 1 - Password required

The requested volume has a password defined that must be supplied to link it. Retry the operation and supply the password.

#### 7 - Illegal unit

Only unit numbers 0 - 8 are valid. Retry the request with a number in this range.

#### 20 - Too many linked

No more printers can be linked. Unlink a printer not needed and retry the request.

#### 25 - Server busy, too many PCs linked

Too many PCs are requesting service from the server. Have some users log out.

#### 39 - Maximum volumes already linked

The maximum of four volumes linked has already been reached. Unlink an unneeded volume and retry the request.

#### 42 - Invalid command parameter

A parameter entered as part of the request cannot be interpreted by the software. Check the parameters for the operation you requested and retry the operation.

#### 43 - Illegal user name

The user name given is not the same as the currently logged in user. Retry the request with the currently logged in user name.

## RELEASE NOTES

100 or greater

All errors numbered 100 or greater are system errors. An error of this sort has prevented the request from being done. Retry the request.

---

### REMOTE ETHERMAIL VERSION 2.0 USER SOFTWARE

#### NO RESPONSE WHEN USING HAYES 1200B MODEM CARD:

The Hayes modem card sometimes does not respond when you issue the telephone dialing commands. To recover, exit from Remote EtherMail and run SCOM (a program provided by Hayes) which resets the modem. Run Remote EtherMail again and try the dialing procedure again.

---

### ETHERSTART VERSION 1.0

#### STARTING FROM OTHER USER'S PUBLIC VOLUMES:

EtherStart will allow starting only from your own START volume or a public START volume owned by the server (e.g. SYS.START). Public volumes owned by other users cannot be used for starting except by their owners.

**ETHERLINK ASSY 1221-00 RELEASE NOTES**  
May 2, 1985

You have received a new half-card version of the EtherLink printed circuit board. This version is identified by the assembly number ASSY 1221-00 printed vertically along the left edge of the PC Board. Your new EtherLink is functionally identical to the previous version (ASSY 34-780-00) but has been reduced to half the size of the standard IBM PC expansion board. This was possible through the integration of circuitry into VLSI devices. The physical difference of your new EtherLink will not affect its compatibility with any IBM PC or IBM Compatible PC.

Installation of the new EtherLink has been made simpler due to the reduced size of the PC board. The location (but not the function) of the jumpers, used to select between the onboard transceiver or a standard external Ethernet transceiver, configure the base addresses, interrupt, and DMA channels, have changed. Instructions for installation and jumper locations for the new EtherLink are contained in the following sections.

**INSTALLATION INSTRUCTIONS**

All switches and jumpers have been correctly set, in the factory, for use with EtherSeries software. You will need to change these settings only if they conflict with other peripheral equipment. See Appendix E for details. The installation instructions in your EtherSeries Users Guide apply for your new EtherLink with the following exceptions.

**Set The Transceiver Select Switch (see Figure 1)**

The transceiver select switch on your new EtherLink consists of three rows of 7 pin sockets and one 14 pin plug. The transceiver select plug is installed by the factory in the two sockets closest to the bottom of the board, over the BNC label. This selects the on-board transceiver which is used when Thin Ethernet cable is connected to the round BNC coaxial cable connector on the rear panel.

To select the external transceiver, move the transceiver select plug to bridge the pair of sockets labeled DIX (these are the sockets closest to the top edge of the board). This bypasses the on-board transceiver and routes the signals to the Digital-Intel-Xerox (DIX) Ethernet transceiver cable connector on the rear panel. The method for moving the transceiver select plug is described in your EtherSeries



user manual Installation section, Moving the Transceiver Select Plug.

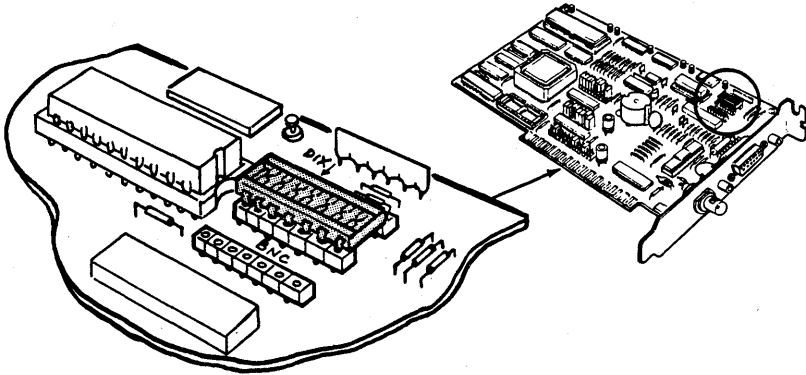


Figure 1: Transceiver Select Switch

#### **Install the EtherLink Card Guide**

Ignore this step because your new EtherLink does not require, and is not shipped with a card guide.

#### **Install the EtherLink Card**

Follow the instructions for installing the EtherLink card provided in your EtherSeries Users Guide. It is not necessary to tilt your new EtherLink Card, described in step two of this section of your EtherSeries Users Guide, due the shorter length of the new card. All the rest of the installation instructions in your EtherSeries Users Guide are accurate with no further exceptions.

## APPENDIX E (JUMPER LOCATIONS)

Your new EtherLink card is configurable using jumpers, and is identical in configurability to the previous version (ASSY 34-780). However the location and orientation of the jumpers is slightly different.

### Location of Jumpers on Your New EtherLink (figure 2)

The location of each set of jumpers on your EtherLink board are shown in figure 2.

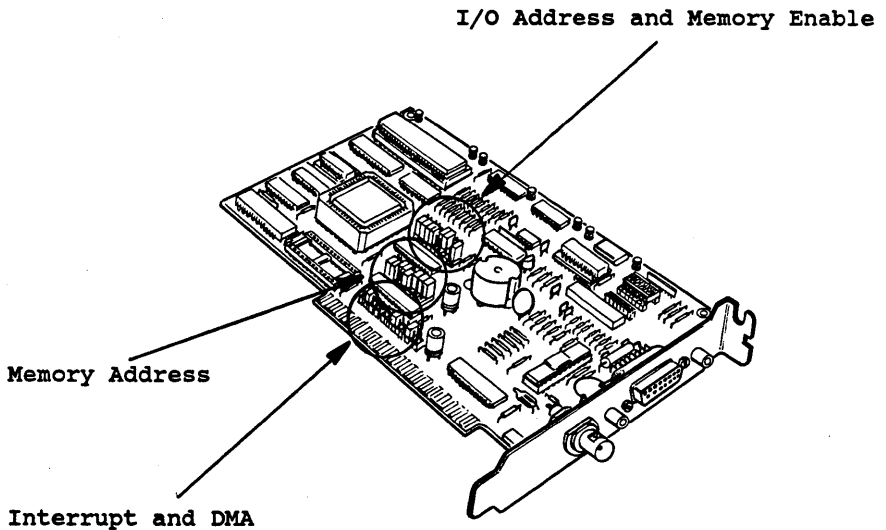


Figure 2: Location of jumpers

The Jumpers to configure the DMA channel, interrupt channel, and memory address of your new Etherlink card are located near the connector at the bottom of the card, the jumpers to configure the base I/O address are located at the center of the card.

### Changing Jumpers on The EtherLink Card

The I/O base address and memory address jumpers consist of a plastic block holding three pins. A plastic cover fits over the middle and one of the end pins, shorting them together.

Changing the position of the jumper to fit over the middle and the other end pin will change its state.

The DMA channel and interrupt jumpers consist of several rows, each containing two pins. A plastic block fits over one row of two pins. Changing the position of the jumper to fit over another row of pins will change its state.

#### DMA Channel Jumpers (figure 3)

There are two jumpers required to select the DMA channel (see figure 3):

1. To select the DMA request channel, move the jumper cover to fit over two of the pins in the rightmost group (over the label REQ). You can select channel 1, 2, or 3.
2. To select the DMA acknowledge channel, move the jumper cover to fit over two of the pins in the leftmost group (over the label ACK). You can select channel 1, 2, or 3.

NOTE: Both jumpers must select the same channel.

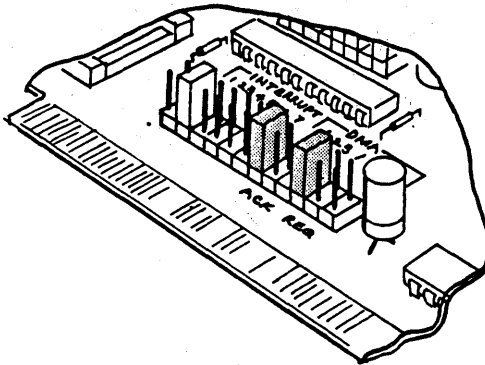


Figure 3: DMA Jumpers

#### Interrupt Channel Jumpers (figure 4)

There is only one jumper block required to select the interrupt channel (see figure 4). Interrupt channels 2 through 7 may be selected. Place the jumper over the row of two pins that corresponds to the channel desired.

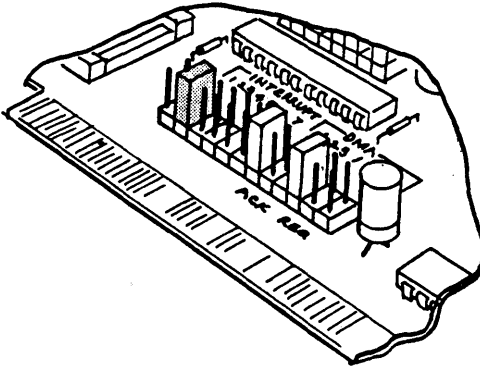


Figure 4: Interrupt jumper

#### I/O Base Address and Memory Address Jumpers (figure 5 and 6)

Your new EtherLink card uses 16 I/O addresses, starting at the I/O base address selected. The I/O address bit and factory setting for each jumper is shown in the table in the I/O Base Address Jumpers section of Appendix E of your Etherseries Users Manual. The Memory address is used by an optional EtherStart PROM. A description of the EtherStart option and the use of these jumpers may be found in the EtherStart Users Guide.

To change the base address, or memory address, locate the jumper corresponding to the desired address bit (see figure 5 or 6).

1. To set the address decoding logic to recognize a "1", place the jumper cover so that it fits over the center and upper pins on the jumper block.
2. To set the logic to recognise a "0", place the jumper cover to fit over the center and lower pins.

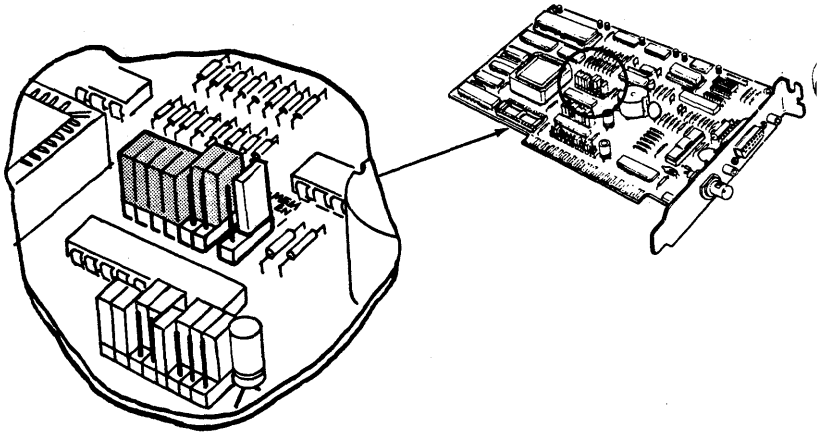


Figure 5: I/O Base Address jumpers

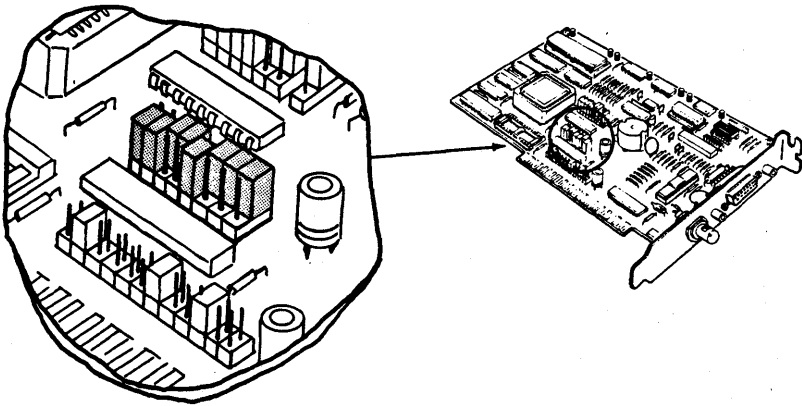


Figure 6: Memory Address Jumper

Memory Enable Jumper (figure 7)

The memory enable jumper enables the system to read an optional PROM, known as the EtherStart Rom. This jumper is set in the disable position by the factory and should be changed only if the EtherStart option is installed. This jumper consists of three pins with a jumper cover. The memory is enabled when the jumper cover connects the upper and middle pins, and is disabled when the cover connects the

middle and lower pins. This jumper should only be used when an EtherStart PROM is installed in your EtherLink. The EtherStart PROM comes with its own manual which describes in more detail the function of this jumper.

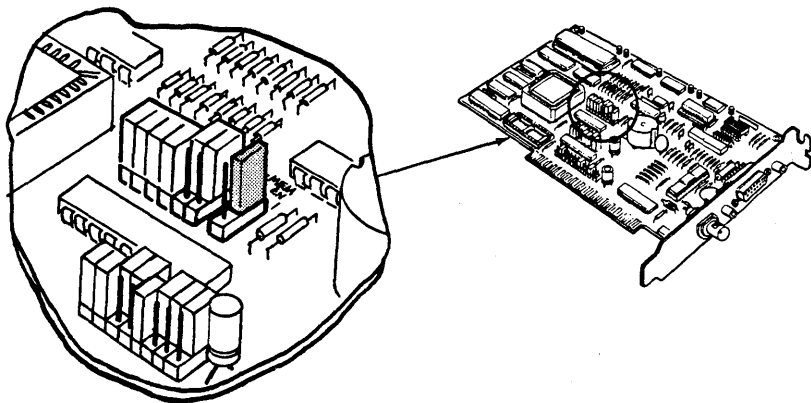


Figure 7: Memory Enable Jumper



# **EtherSeries User's Guide**

**Software by:** Mike Bonnain  
Jeff Mason  
Greg Shaw  
Lynn Welge

**Hardware by:** Ron Crane  
Pitts Jarvis  
Ken Powell

**User's Guide by:** Joan Lasselle  
Carol Ramsay  
Steve Pomeroy

**Version 2.0 July 1983**  
(1st Revision May 1984)

Copyright © 1983, 1984 by 3Com Corporation  
1365 Shorebird Way  
P.O. Box 7390  
Mountain View, California 94039  
USA



## LIMITED WARRANTY

3Com warrants this 3Com EtherSeries Networking Product to be in good working order for a period of 90 days from the date of purchase from 3Com or an authorized 3Com dealer. Should this product fail to be in good working order at any time during this 90-day warranty period, 3Com will, at its option, repair or replace this product at no additional charge. Repair parts and replacement products will be furnished on an exchange basis and will be either reconditioned or new. All parts that are exchanged or replaced will become the property of 3Com. This warranty does not include service to repair damage to the product resulting from accident, disaster, misuse, abuse, or non-3Com modification of the product.

While 3Com has made every effort to make the EtherSeries software as easy to use and error free as possible, the programs and reference material are provided "as is," without warranty as to their performance, merchantability, or fitness for any particular purpose. However, diskette media containing EtherSeries software are covered by the 90-day warranty protecting you against failure during that period.

Limited warranty service may be obtained by delivering the product to 3Com or an authorized dealer during the 90-day warranty period and providing proof of purchase date. Products returned to 3Com by mail must be sent prepaid and insured (or you must assume the risk of loss or damage in transit), and packaged appropriately for safe shipment.

ALL EXPRESS AND IMPLIED WARRANTIES FOR THIS PRODUCT ARE LIMITED IN DURATION TO A PERIOD OF 90 DAYS FROM THE DATE OF PURCHASE, AND NO WARRANTIES WILL APPLY AFTER THIS PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

IF THIS PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, YOUR SOLE REMEDY SHALL BE REPAIR OR REPLACEMENT. IN NO EVENT WILL 3COM BE LIABLE TO YOU FOR ANY DAMAGES, INCLUDING LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE SUCH PRODUCT, EVEN IF 3COM OR AN AUTHORIZED 3COM DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY OTHER PARTY.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

# Contents

---

## Section 1—Introduction

Overview	1-1
EtherLink	1-1
EtherShare	1-2
EtherPrint	1-2
EtherMail	1-3
Network Servers	1-3
Administration	1-4
Using this Manual	1-4
EtherSeries Documentation	1-4

## Section 2—Installation

Overview	2-1
Requirements	2-2
Installing the EtherLink Card	2-3
Disconnect System Unit	2-3
Remove System Unit Cover	2-4
Prepare the Expansion Slot	2-5
Set the Transceiver Select Switch	2-6
Install the EtherLink Card Guide	2-7
Install the EtherLink Card	2-8
Replace the System Unit Cover	2-9
Reconnect Cables and Power	2-9
Install the Adapter Plate Assembly	2-10
Installing the Thin Ethernet Cables	2-12
Connecting Two Computers	2-13
Attach the Cables and Terminators to the T-Adapters	2-13
Ground One Terminator	2-14
Attach the T-Adapter to the Computer	2-15
Adding More Computers	2-15
Adding a Computer to the End of the Network	2-16
Adding a Computer in the Middle of the Network	2-17

# Contents

<b>Installing EtherSeries Software</b> .....	2-18
Installing the Software on a Diskette .....	2-18
Using Two Diskette Drives .....	2-18
Using a Single Diskette Drive .....	2-20
Installing the Software on a Fixed Disk .....	2-22
EtherSeries/DOS Files .....	2-23

## Appendices

<b>Appendix A—Glossary</b> .....	A-1
----------------------------------	-----

<b>Appendix B—Using Thick Ethernet</b> .....	B-1
--	-----

Combining Thin Ethernet with Thick Ethernet .....	B-2
Interseries Adapters .....	B-5
Repeaters .....	B-6

<b>Appendix C—Problem Solving on the Network</b> .....	C-1
--	-----

The DIAGNOSE Program .....	C-2
Requirements for Testing .....	C-4
Running the DIAGNOSE Program .....	C-5
Controller Failure .....	C-6
Network Failure .....	C-7
Server Failure .....	C-8
Examples .....	C-9
For Information or Repair .....	C-10

<b>Appendix D—Using EtherSeries Products with IBM PC Compatibles</b> .....	D-1
--	-----

<b>Appendix E—Configuring the EtherLink and EtherSeries User Software to use Different DMA, Interrupts, or Base Addresses</b> .....	E-1
---	-----

## List of Figures

### Section 2

IBM Personal Computer	2-1
System Unit Cables	2-3
System Unit Cover Mounting Screws	2-4
Expansion Slot	2-5
EtherLink Card and Transceiver Switch	2-6
Selecting the External Transceiver	2-7
Installing the Card Guide	2-7
Inserting the EtherLink Card	2-8
Replacing the Cover	2-9
Assembling the Adapter Plate	2-10
Attaching the Adapter Plate	2-11
Planning the Configuration	2-12
T-Adapter, Terminators and Barrel Connector	2-13
Grounding a Terminator	2-14
Attaching the T-Adapter	2-15
Computer Added to End of Network	2-16
Computer Added in Middle of Network	2-17

### Appendix B

Thin Ethernet Configuration	B-1
Thick Ethernet Configuration	B-2
Thin Ethernet Network with Repeaters	B-6

### Appendix E

EtherLink Card Assembly Numbers	E-2
Location of Jumpers (Assembly No. 0345)	E-4
DMA Channel Jumpers (Assembly No. 0345)	E-5
Interrupt Channel Jumpers (Assembly No. 0345)	E-6
I/O Base Address Jumpers (Assembly No. 0345)	E-7
Location of Jumpers (Assembly No. 34-0780)	E-8
DMA Channel Jumpers (Assembly No. 34-0780)	E-9
Interrupt Channel Jumpers (Assembly No. 34-0780)	E-10
I/O Base Address Jumpers (Assembly No. 34-0780)	E-11

# Contents

## List of Tables

Combining Thin & Thick Ethernet Cables .....	B-1
Comparison of Thin Ethernet to Thick Ethernet Network .....	B-4
Ethernet to Thin Ethernet Connectors .....	B-5
Ethernet and Thin Ethernet Components .....	B-8

# SECTION 1

## Introduction

---

### Overview

The EtherSeries is a family of integrated hardware and software networking products for IBM Personal Computers. Based on the industry standard Ethernet local network, EtherSeries gives you a fast and powerful system for communicating and sharing information with many other IBM Personal Computer users.

The EtherSeries family of products provides you with a network connection and access to a shared hard disk, as well as electronic mail services and a shared printer. In addition, you can use DOS commands, application programs and data files for other software in the normal way. There is nothing new or different when they are used across the network, except that your capabilities and resources are increased.

There are four EtherSeries products:

- EtherLink
- EtherShare
- EtherPrint
- EtherMail

### EtherLink

This is the basic product which is the prerequisite to all other EtherSeries products. EtherLink is a printed circuit board that plugs into an expansion slot in your IBM Personal Computer (either the PC or XT version) and sends and receives information across the network. The EtherLink card conforms to the Ethernet specifications and is fully compatible with other Ethernet equipment. It is easily installed by you and requires no special tools.

Thin Ethernet cable is then used to connect together all computers to be included in the network. Once your computer is connected to the network, you can use the EtherShare, EtherPrint and EtherMail network services.

## **Introduction**

### **EtherShare**

EtherShare allows many IBM Personal Computers on an Ethernet network to share a single hard disk. The disk can be the fixed disk on an IBM PC (XT version or PC with compatible add-on disk) or the disk included with a 3Com Network Server.

Depending on the type of disk, you can share disk capacities of 10 or 30 megabytes, or more. Regardless of whether you are sharing an IBM PC fixed disk or a 3Com Network Server fixed disk, the EtherShare software offers the same capabilities to you at your IBM PC. The operation is identical with an IBM PC Network Server or a 3Com Network Server.

The disk is divided into volumes which are treated like the diskettes you use with your Personal Computer. EtherShare volumes can be made public, private or shared. Public volumes usually contain common program and information files for use by everyone on the network; private volumes can be used only by their owner; shared volumes can be accessed by more than one user at a time and are controlled by your own application programs.

### **EtherPrint**

EtherPrint allows many users to print program, data and text files on a shared printer. In this way, the cost of a printer can be shared by all users on the network.

The EtherPrint software is installed on the Network Server, giving it the ability to function as a print server. EtherPrint can control two printers per server.

## EtherMail

EtherMail is an electronic mail service for all network users. You can compose, forward and reply to messages and send them to anyone else on the network, as well as read, file and print messages sent to you. You can send messages to a single individual or to an entire group via a distribution list.

The screen-oriented message editor provides easy to use text entry and editing, including many word processing features such as word wrap, automatic insert, and block move, copy and delete operations.

The EtherMail software is installed on the Network Server which acts as EtherMail's post office, holding messages until the recipients request to read their new mail.

## Network Servers

The EtherShare, EtherPrint and EtherMail services are provided by installing these programs on a Network Server. There are two types of Network Servers that can be used with EtherSeries networks.

An IBM Personal Computer with a fixed disk can act as a Network Server when equipped with the EtherShare/PC, EtherPrint/PC and EtherMail/PC Server software. The IBM PC Network Server is a good server choice when you will have two to eight users per server.

A 3Com Network Server has the same capabilities as an IBM PC Network Server, but has greater storage capacity and can manage more users. This is a good server choice when you will have a greater number of users per server.

Both types of Network Server can be used on the same network. You can have multiple servers of either type operating together to provide disk sharing, printer spooling, and electronic mail on the same EtherSeries network.



## **Introduction**

## **Administration**

In addition to the four EtherSeries products, an Administration program runs on each server and manages such functions as starting up and shutting down the server, checking network status, installing network applications, and modifying passwords. The Administration program for the 3Com Network Server also offers a versatile backup function, while the PC Network Server Administration program uses the DOS 2.0 backup facility.

## **Using this Manual**

Section 2 of this manual gives step-by-step instructions on installing the EtherLink card and EtherSeries software, and cabling computers together. You must read and follow the procedures in this section before attempting to use your computer on the network.

Appendix A is a glossary of terminology.

Appendix B describes using EtherLink with an external transceiver in a "thick" Ethernet network.

Appendix C gives diagnostic and problem solving information.

Appendix D discusses using the EtherSeries products with IBM PC compatibles.

## **EtherSeries Documentation**

This binder contains User's Guides for all the EtherSeries products. Each manual is self contained with its own table of contents, error messages, and index. You will find a complete reference to each product in these individual guides. An overview of the product and information on using the manual can be found in the introduction to each User's Guide.

The EtherShare Administrator's Guide is provided as a separate manual. It is supplied when you purchase a 3Com Network Server or a Server software package for the IBM PC.

## SECTION 2

# Installation

---

### Overview

Before communication between computers can take place, the following operations must be performed.

1. Install an EtherLink card in each computer.
2. Connect each computer to Thin Ethernet cable.
3. Install the EtherSeries software.

This section gives step-by-step instructions on these operations.

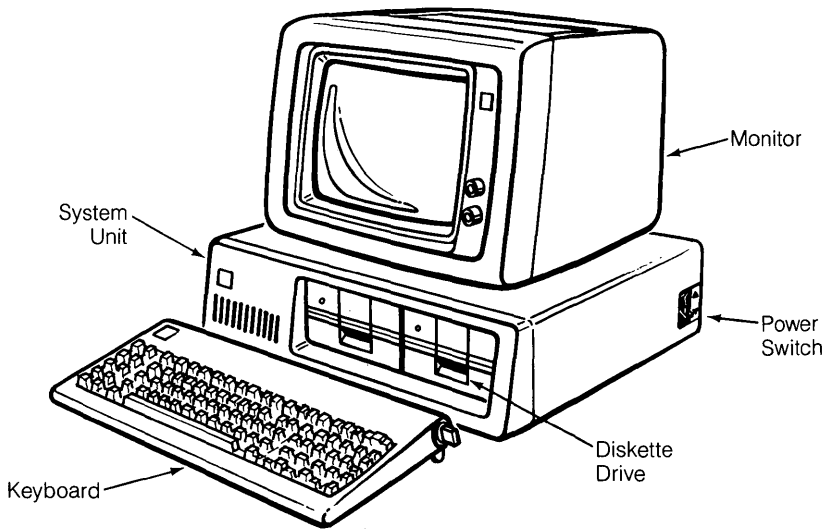


Figure 2-1. IBM Personal Computer

# Installation

## Requirements

The IBM Personal Computers to be connected to the network must have:

- at least one diskette drive
- at least 128K of memory (192K if you have EtherMail)
- an 80 character display
- at least one empty expansion slot in the system unit
- PC DOS version 2.0

You will also need the following:

1. EtherLink card
  - supplied with the EtherLink package
2. The following diskettes:
  - the EtherSeries User Software for the IBM PC, supplied with the EtherLink package
  - an unmodified DOS master diskette, version 2.0
  - a blank formatted diskette
3. EtherLink accessories package
  - supplied with the EtherLink package, containing:  
plastic card guide, BNC T-adapter, and transceiver cable adapter plate assembly
4. Thin Ethernet coaxial cable
  - supplied in various lengths; see the 3Com Ordering Guide for cable lengths and model numbers
  - at least 3 feet (1 meter) between computers, total length not to exceed 1000 feet (304.8 meters)

5. Terminators
  - purchased separately; see the 3Com Ordering Guide for information
  - one for each end of the network
6. Flat blade screwdriver
  - medium size
7. External transceiver installation parts, required only if an external transceiver is to be used; see the 3Com Ordering Guide for information
  - Ethernet transceiver
  - transceiver cable with "D" connectors

## Installing the EtherLink Card

The first step is to install the EtherLink card in your IBM Personal Computer. One of these cards must be installed in each computer to be connected to the network.

The following installation procedure applies to both the IBM PC and XT versions. Slight differences are noted when applicable.

The EtherLink card must be installed *inside* the PC or XT's main system unit; it will not function properly if it is installed in an expansion unit.

## Disconnect System Unit

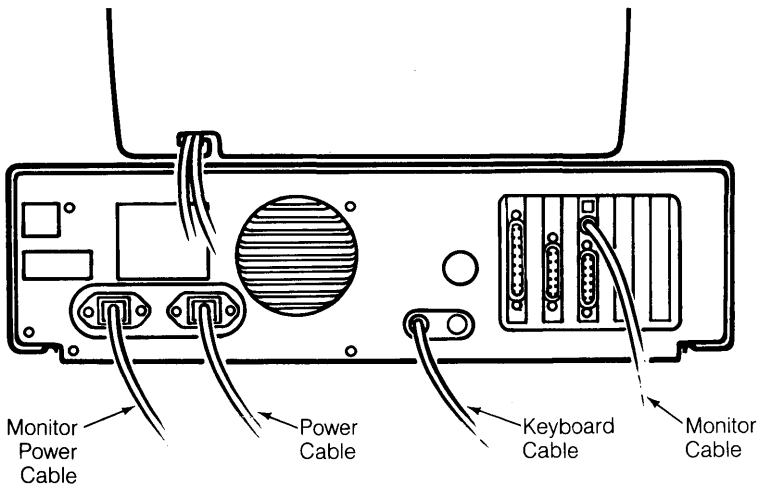


Figure 2-2. System Unit Cables

## Installation

1. Turn off the power (the switch is on the right side of the system unit) and unplug the power cable from the wall and the system unit.
2. Disconnect the monitor cables from the back of the system unit. Remove the monitor from the top of the system unit and set it to one side.
3. Disconnect the keyboard cable from the back of the system unit and set the keyboard aside.
4. Disconnect any other cables that are attached to the system unit (for example, printer, communication lines).
5. Position the system unit so that you have access to the rear and enough room to work.

## Remove System Unit Cover

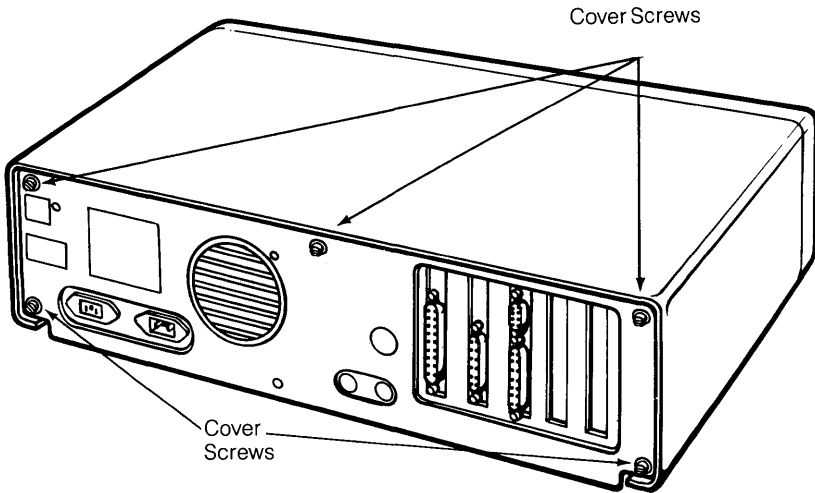


Figure 2-3. System Unit Cover Mounting Screws

1. Remove the cover mounting screws and set them aside for reassembly. The PC has two cover screws; the XT has five.
2. Gently slide the cover toward the front until it will go no farther. Tilt the cover up at the front and remove it from the base.

## Prepare the Expansion Slot

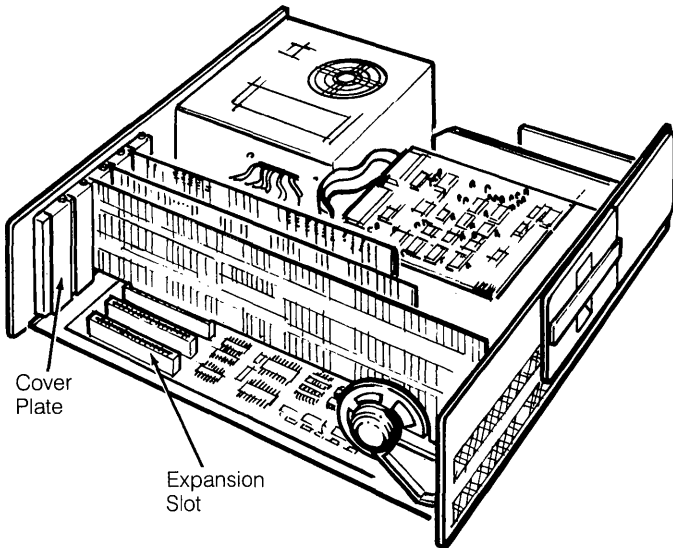


Figure 2-4. Expansion Slot

1. You can install the EtherLink card in any one of the available system expansion slots. The PC has five expansion slots; the XT has eight. Slot 1 (on the left side when viewed from the front) is recommended since it has the easiest access for the cables. Remove the screw at the top of the expansion slot cover plate and set it aside.
2. Remove the cover plate. The EtherLink card comes with its own cover plate, but you should keep the original plate in case it is required for future use.

# Installation

## Set the Transceiver Select Switch

OMIT THIS STEP IF you have a new card and are using EtherLink with Thin Ethernet cable. Unless you are using an external transceiver, go on to the next step, Install the EtherLink Card Guide.

If you plan to use your EtherLink card with an external transceiver and transceiver cable, you must change the transceiver select switch as described below.

Two versions of the EtherLink exist. Each version has a different method for switching from on-board to external transceiver. The two versions may be differentiated by their assembly numbers. These numbers are printed on the Etherlink cards. On one version this number is printed along the bottom edge of the card as ASSY 0345-. The other version has the number printed along the top edge of the card as ASSY 34-0780-.

The transceiver select switch is located on the EtherLink card, as shown in figure 2-5 for Assembly 0345 and figure 2-6 for Assembly 34-0780. This switch selects either the on-board transceiver for use with thin Ethernet ("BNC" position) or a connector on the rear panel for use with an external transceiver on thick Ethernet ("DIX" position).

If the on-board transceiver is selected, the BNC coaxial cable connector on the rear panel of the EtherLink card is enabled. If the external transceiver is selected, an Ethernet transceiver cable can be attached to the 15 pin connector, also on the rear panel of the EtherLink card.

## Transceiver Select Switch (Assy 0345)

The transceiver select switch for the 0345 assembly consists of three pins and a plastic jumper. Two of the pins are covered by the jumper, as shown in figure 2-5.

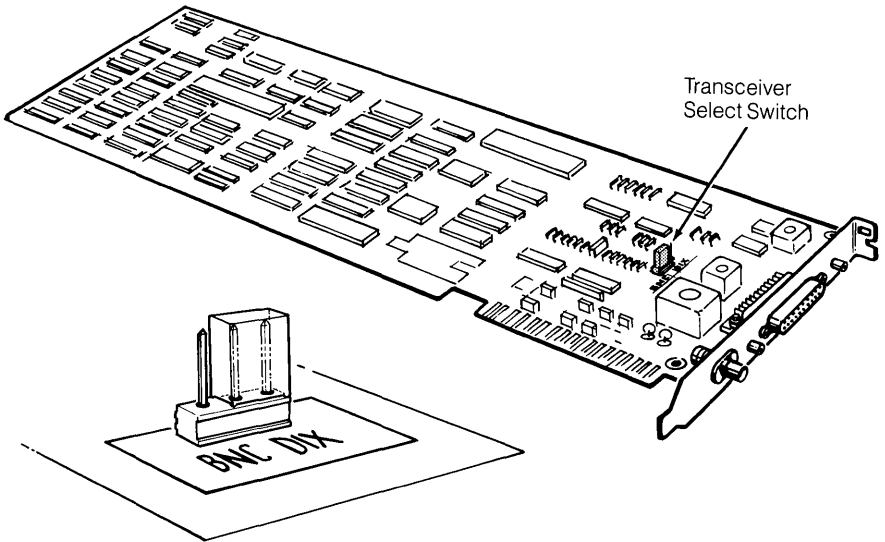


Figure 2-5 EtherLink Card and Transceiver Switch (Assy 0345)

The jumper is currently over the left and center pins toward the label "BNC". This selects the on-board transceiver which is connected to the round BNC coaxial cable connector on the rear panel.

To select the external transceiver, pull off the jumper and replace it firmly over the right and center pins, toward the label "DIX".

This bypasses the on-board transceiver and routes the signals to the Digital-Intel-Xerox (DIX) Ethernet transceiver cable connector, also on the back panel.



# Installation

## Transceiver Select Switch (Assy 34-0780)

The transceiver select switch for the 34-0780 assembly consists of two 16 pin sockets and one 16 pin plug. The transceiver select plug is installed by the factory in the socket labeled BNC. (This is the socket farthest from the edge of the PC board.) This selects the on-board transceiver which is used when the thin Ethernet cable is connected to the round BNC coaxial cable connector on the rear panel.

To select the external transceiver move the transceiver select plug, in the manner described below, to the socket labeled DIX (this is the socket closest to the top edge of the board). This bypasses the on-board transceiver and routes the signals to the Digital-Intel-Xerox (DIX) Ethernet transceiver cable connector on the rear panel.

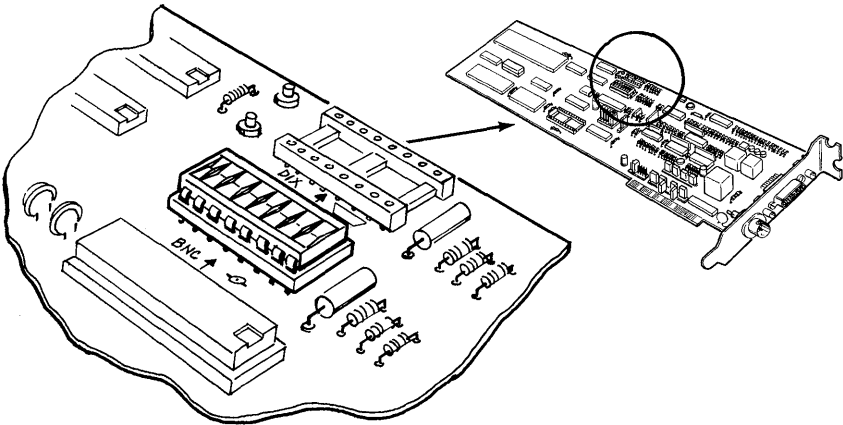


Figure 2-6. EtherLink Card and Transceiver Switch (Assy 34-0780)

The transceiver select plug can be removed from the socket using an integrated circuit extraction tool. However if this tool is not available a small screwdriver can be used.

If a screwdriver must be used, care must be taken not to bend any of the transceiver select plug pins. The screwdriver should be inserted between the plug and the socket and twisted (or lifted) slightly to raise each corner of the plug a small amount. This process should be repeated until the plug is free of the socket.

Once the plug is removed inspect it for any bent or damaged pins. Next carefully insert the plug into the correct socket being very careful to line up the plug pins with the holes in the socket. The plug can be inserted in either orientation but it is preferred that the notched end of the plug be placed toward the rear panel. Apply even pressure to the top of the plug in order to seat it correctly in the socket (care should be taken not to bend any pins by seating one end of the plug before the other). Inspect the plug pins thoroughly for bends or missed socket holes after insertion.

### Install the EtherLink Card Guide

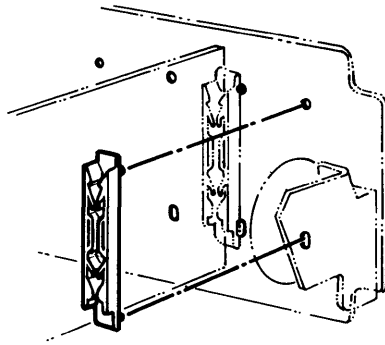


Figure 2-7. Installing the Card Guide

1. Install the plastic card guide by snapping it into the two holes in the system unit front panel. These holes align with expansion slot 1. The plastic leaves of the card guide should point down as shown in figure 2-7. The end of the card will slide into the groove in the guide which will hold the card in place.

# Installation

## Install the EtherLink Card

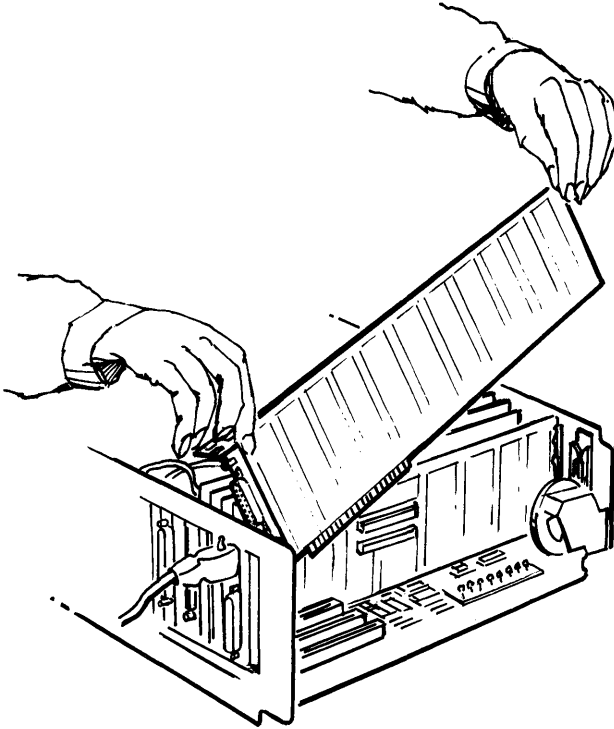


Figure 2-8. Inserting the EtherLink Card

1. Be sure the system power is off before inserting or removing a card.
2. As shown in figure 2-8, tilt the card so that the coaxial cable connector on the cover plate at the end of the card slips through the cut-out in the system unit rear panel.
3. Hold the card by the top corners and firmly press it into the expansion slot. The edge connector on the card aligns with the socket on the system board and the end of the card fits into the card guide on the front panel. The system board is the large board on the bottom of the system unit.
4. Check that the card is fully inserted and properly aligned. The top of the card should be level with the other option cards in the system.
5. Replace the screw that holds the rear panel cover plate in place.

## Replace the System Unit Cover

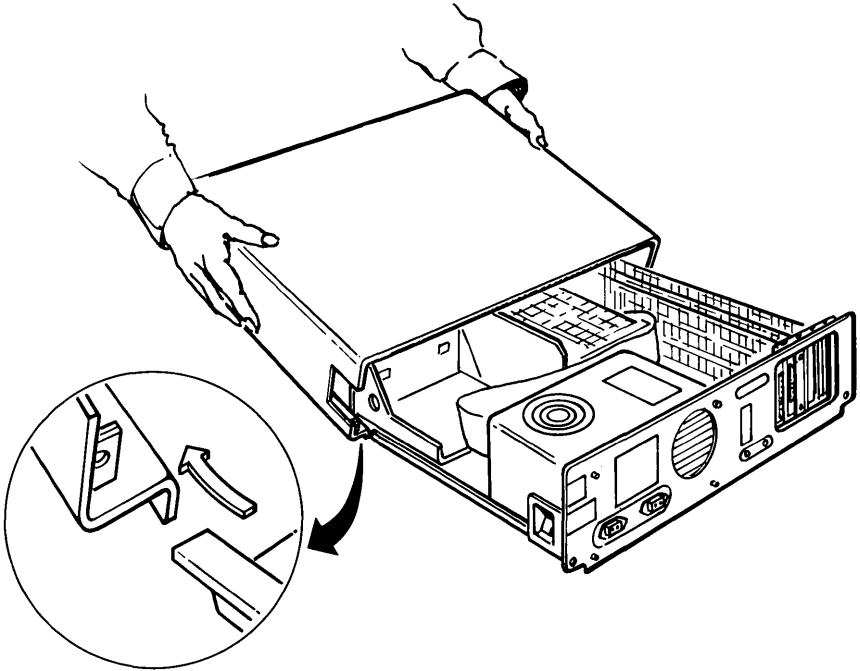


Figure 2-9. Replacing the Cover

1. Position the cover under the runners on the base with the front of the cover tilting upwards.
2. Slide the cover over the base toward the rear of the unit until it will go no farther.
3. Align the holes on the base cover plate with the threaded tabs on the lower corners of the cover. Insert and tighten all cover screws (two on the PC, five on the XT).

## Reconnect Cables and Power

1. Put the monitor back on top of the system unit and reconnect its cables.
2. Reconnect the keyboard cables and any cables going to other devices (for example, printer, communication line).
3. Plug the power cord into the back of the system unit and a wall outlet.

# Installation

## Install the Adapter Plate Assembly

OMIT THIS STEP IF you are using EtherLink with Thin Ethernet cable. Unless you are using an external transceiver, go on to the next step, Installing the Thin Ethernet Cables.

If you plan to use your EtherLink card with an external transceiver and transceiver cable, you must use the adapter plate assembly, as described below. The adapter plate assembly adapts the lock posts on the transceiver cable to the fastening method used on the IBM Personal Computer.

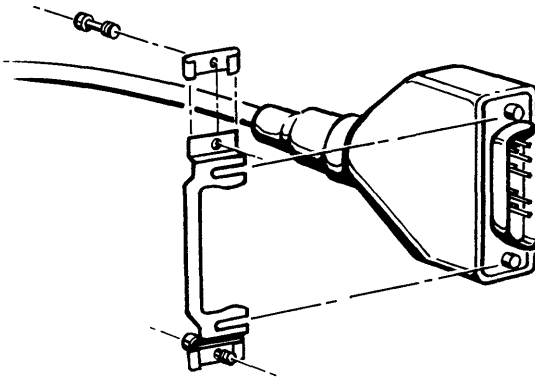


Figure 2-10. Assembling the Adapter Plate

1. Slide the threaded clips on to both ends of the adapter plate and insert the screws into the clips.
2. As shown in figure 2-10, align the slots in the adapter plate with the indents in the lock posts on the transceiver cable and press the plate on to the connector.

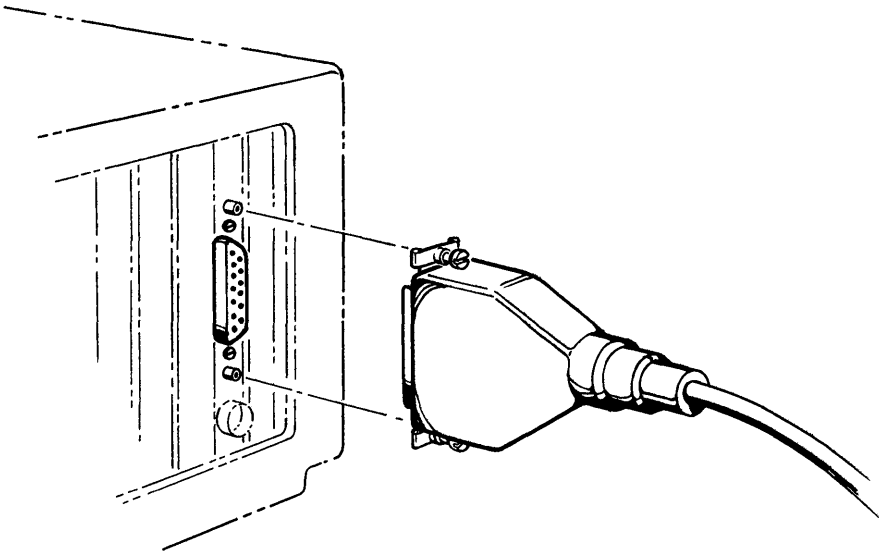


Figure 2-11. Attaching the Adapter Plate

3. Plug the adapter plate assembly into the 15 pin connector on the EtherLink card, as shown in figure 2-11. Tighten the screws on the adapter plate into the threaded jackposts on the EtherLink card.

You have now connected the transceiver cable to your IBM Personal Computer and can connect the other end to an Ethernet transceiver.

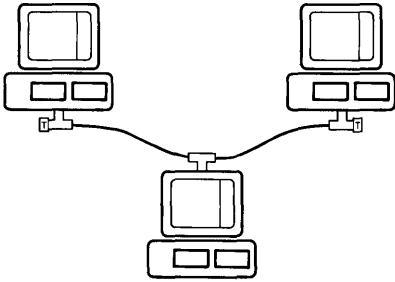
# Installation

## Installing the Thin Ethernet Cables

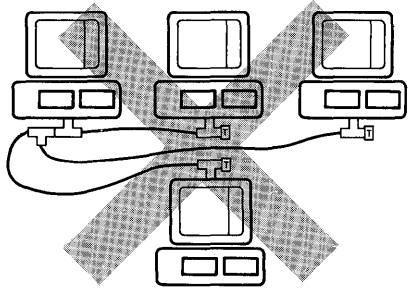
Computers connected with Thin Ethernet cables must adhere to the following rules. For more information on using thick Ethernet and an external transceiver, refer to Appendix B.

1. The total length of cable linking all the computers together cannot exceed 1000 feet (304.8 meters).
2. Each end of the network must have a terminator attached.
3. There can be no more than 100 computers connected to a single cable.

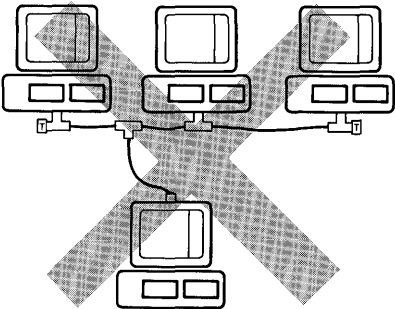
Figure 2-12 demonstrates some acceptable and unacceptable configurations.



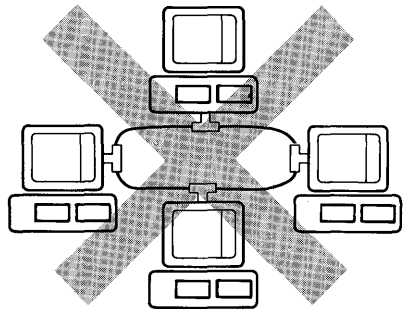
Correct configuration.



Branches off the main cable are not allowed.



T-adapters must be attached directly to the back of each computer.



The cable must have two ends with a terminator at each end; a loop has no ends.

Figure 2-12. Planning the Configuration

## Connecting Two Computers

Before you begin, be sure that you have installed the EtherLink card in the computers. You also need the following:

- Two terminators.
- A cable long enough to run between the two computers (at least three feet for Thin Ethernet cable).
- A T-adapter for each computer; one is supplied with each EtherLink package.
- A barrel connector if you need to join two pieces of cable to form a longer cable (see the 3Com Ordering Guide for information).

### Attach the Cables and Terminators to the T-Adapters

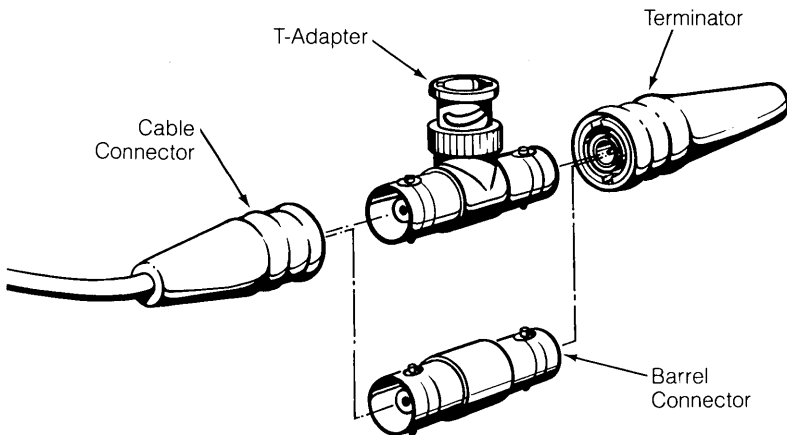


Figure 2-13. T-Adapter, Terminators and Barrel Connector

1. Attach a T-adapter to each end of the cable. Align the notches on the arm of the T-adapter with the slots in the cable connector and press the connector on to the adapter.
2. Twist the metal sleeve (located under the rubber insulator) on the cable connector clockwise one quarter turn to lock the connectors together.
3. In the same way, attach a terminator to the other arm of each T-adapter.



# Installation

## Ground One Terminator

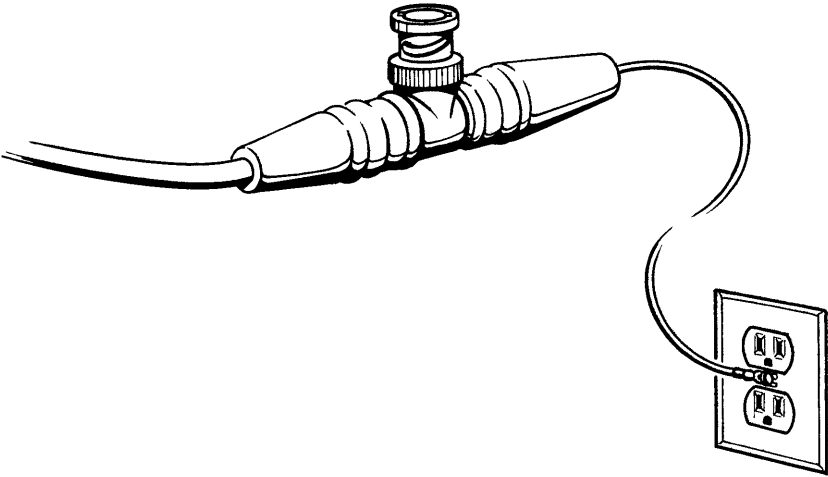


Figure 2-14. Grounding a Terminator

1. One of the terminators has a green wire with a lug at the end. Connect this lug under the screw of a grounded AC wall plate as shown in figure 2-14.
2. If the lug won't reach the wall plate with the terminator mounted on the back of your computer, add a short coaxial cable and barrel connector between the last T-adaptor and the terminator.
3. Only *one* terminator should be grounded. The network may not be reliable if it is grounded in more than one place.

## Attach the T-Adapter to the Computer

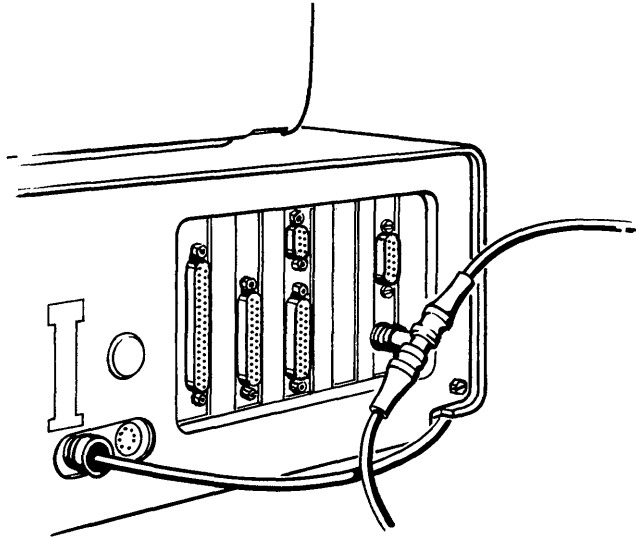


Figure 2-15. Attaching the T-adapter

1. The base of the T on the T-adapter connects with the bottom connector on the rear panel cover plate of the EtherLink card, as shown above. Push the T-adapter on to the round connector and twist the sleeve clockwise one quarter turn until it stops.
2. Check that all connections are secure. Loose or faulty connections will prevent the network from operating correctly.

You have now connected your first two computers. To connect more than two, use additional cables and attach the terminators to the T-adapters on the first and last computers only.

## Adding More Computers

Ethernet does not depend on the physical location of the computers in the network. Computers can be connected at any location, or disconnected and reconnected at another location without having to change the EtherSeries software.

Be sure that no one is using the network when you want to expand or change it. **When you disconnect the cable from a T-adapter or remove a terminator, the network stops working.** However, you can remove the T-adapter from the rear panel of a computer without affecting communication between other computers.

## Installation

You can add computers at either end of the network or anywhere in between.

You will require:

- The T-adapter supplied with the EtherLink package (one for each computer to be added)
- Additional cable(s)

### Adding a Computer to the End of the Network

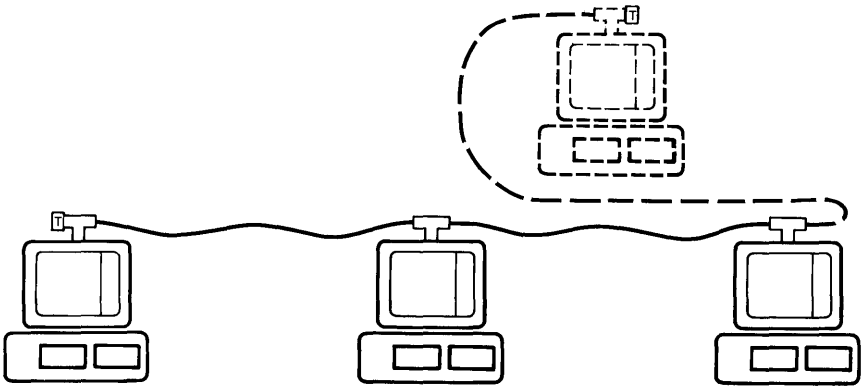


Figure 2-16. Computer Added to End of Network

1. Make sure no one is using the network.
2. Remove the terminator from the T-adapter on the computer that is currently at the end of the network.
3. Attach one end of the new cable to the T-adapter where the terminator used to be.
4. Attach the other end of the new cable to one side of the T-adapter which is to be connected to the new computer.
5. Attach the terminator to the other side of the T-adapter.
6. Attach the T-adapter to the new computer. The base of the T attaches to the bottom connector on the rear panel plate of the EtherLink card.
7. Check that all connections are secure.

## Adding a Computer in the Middle of the Network

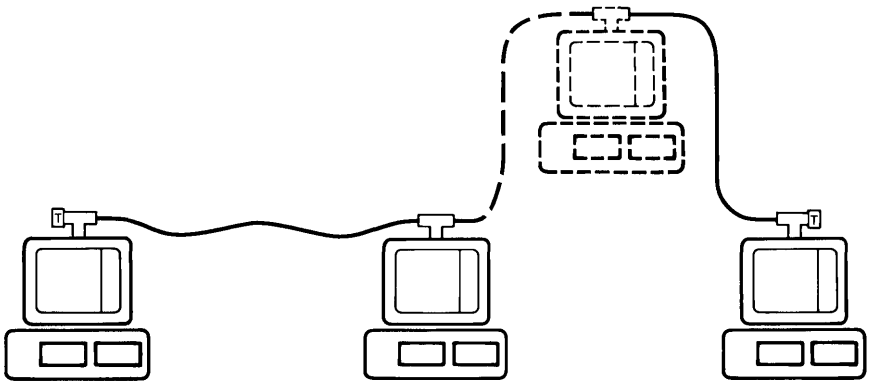


Figure 2-17. Computer Added in Middle of Network

1. Make sure no one is using the network.
2. Attach a T-adapter to the bottom connector on the rear panel plate of the EtherLink card in the computer to be added to the network.
3. Disconnect the cable from the T-adapter on the adjacent computer and connect it to one side of the T-adapter on the new computer.
4. Connect one end of a new cable to the other side of the T-adapter on the new computer.
5. Connect the other end of the new cable to the T-adapter on the old computer.
6. Check that all connections are secure.

When the EtherLink card has been installed and all computers in the network have been connected with Thin Ethernet cable, you should go on to the following steps to install the EtherSeries software.

## Installation

### Installing EtherSeries Software

This procedure installs the Ethernet software driver so that it will be loaded into memory whenever you boot your system. It also copies the EtherShare user program (ES.COM), the EtherPrint user program (EP.COM), and some useful batch files onto your diskette or fixed disk. Once you have completed the software installation, you should always boot your PC from this diskette or fixed disk.

To install the EtherSeries software, you need:

1. An unmodified DOS master diskette, version 2.0.
2. The EtherSeries User Software Diskette which is part of the EtherLink package.
3. An IBM Personal Computer with at least one diskette drive.
4. A blank diskette (single or double sided), or an IBM Personal Computer with a fixed disk.

### Installing the Software on a Diskette

#### Using Two Diskette Drives

1. Insert the DOS diskette in drive A: (the left drive) and the blank diskette in drive B:.
2. At the DOS A > prompt, type:

```
A > DISKCOPY A: B: ←
```

This displays the message:

Insert source diskette in drive A:

Insert target diskette in drive B:

Strike any key when ready

3. Press any key to copy the DOS diskette in drive A: to the blank diskette in drive B:

When the diskette has been copied, you are asked:

Copy another (Y/N)?

4. Type N (for no) since you don't want to copy another diskette.
5. Remove the DOS diskette from drive A: and store it in a safe place. Remove the diskette from drive B: and insert it in drive A:. Insert the EtherSeries User Software Diskette in drive B:.
6. At the DOS A > prompt, type:

```
A > B:SETUP ←
```

This starts an automatic procedure which installs the EtherSeries software on the copy of the DOS diskette.

7. When the procedure is complete, you see the message:

```
REM EtherSeries Software Installation Complete
```

You can then remove the EtherSeries User Software Diskette from drive B: and store it in a safe place. Drive A: now contains the DOS diskette with EtherSeries software installed.

8. Put a label on your newly created diskette from drive A: that says ETHERSERIES/DOS.

Before you can use the network, you must reboot your PC from the EtherSeries/DOS diskette you have just created. This is the diskette you should now use whenever you boot the system.

# Installation

## Using a Single Diskette Drive

1. Insert the DOS diskette in the diskette drive.
2. At the DOS A > prompt, type:

```
A > DISKCOPY A: B: ←
```

This displays the message:

Insert source diskette in drive A:

Strike any key when ready

3. Press any key to begin to copy the DOS diskette. When the diskette has been read, DOS displays:

Insert target diskette in drive A:

Strike any key when ready

4. Remove the DOS diskette and store it in a safe place. Insert the blank diskette in the drive and press any key to finish copying the diskette.

Note that certain memory configurations require you to switch diskettes up to three times in order to complete the DISKCOPY procedure.

5. When the diskette has been copied, you are asked:

Copy another (Y/N)?

Type N (for no) since you don't want to copy another diskette.

6. At the DOS A > prompt, type:

```
A > COPY B:SETUP.BAT A: ←
```

This displays the message:

Insert diskette for drive B: and strike any key when ready

7. Remove the new copy of DOS from the drive and insert the EtherSeries diskette. Press any key to begin copying. This displays the message:

Insert diskette for drive A: and strike  
any key when ready

8. Remove the EtherSeries diskette, insert the new DOS diskette and press any key to complete the copy operation.
9. At the DOS A > prompt, type:

A > **SETUP** ←

This starts an automatic procedure which installs the EtherSeries software on the copy of the DOS diskette.

10. Within this procedure, a total of six files must be copied from the EtherSeries diskette to the new DOS diskette. For each file, you are told:

Insert diskette for drive B: and strike  
any key when ready

Insert the EtherSeries diskette in the drive and press any key.

11. You are then told:

Insert diskette for drive A: and strike  
any key when ready

Insert the new DOS diskette in the drive and press any key.

You will repeat steps 10 and 11 six times.

12. When the procedure is complete, you see the message:

REM EtherSeries Software Installation Complete

Store the EtherSeries Software Diskette in a safe place, but leave the new DOS diskette in the drive.



## Installation

13. Delete the SETUP.BAT file by typing:

```
A > DEL SETUP.BAT ←
```

14. Remove the new diskette and put a label on it that says ETHERSERIES/DOS.

Before you can use the network, you must reboot your PC from the EtherSeries/DOS diskette you have just created. This is the diskette you should now use whenever you boot the system.

## Installing the Software on a Fixed Disk

Before you install the EtherSeries software, be sure you have already installed DOS on your fixed disk and booted your computer from this drive. If your IBM Personal Computer is new, refer to your DOS manual for instructions on installing the operating system.

1. Insert the EtherSeries Software Diskette in diskette drive A:. At the DOS C> prompt, type:

```
C > A:FDSETUP ←
```

This starts an automatic procedure which installs the EtherSeries software on the fixed disk.

2. When the procedure is complete, you see the message:

```
REM EtherSeries Software Installation Complete
```

Remove the EtherSeries Software Diskette and store it in a safe place.

Before you can use the network, you must reboot your PC from the fixed disk. This is the drive you should now use whenever you boot the system.

## EtherSeries/DOS Files

Your diskette or fixed disk now contains the EtherSeries software, along with DOS and its most frequently used utilities. These files are:

### EtherLink Files:

ES.COM  
EP.COM  
CONFIG.SYS  
ENET.SYS  
LOGIN.BAT  
PRINT.BAS

### DOS Files:

ANSI.SYS  
ASSIGN.COM  
BASIC.COM  
CHKDSK.COM  
COMMAND.COM  
COMP.COM  
DISKCOMP.COM  
DISKCOPY.COM  
EDLIN.COM  
FIND.EXE  
FORMAT.COM  
GRAPHICS.COM  
MODE.COM  
MORE.COM  
PRINT.COM  
SORT.EXE  
SYS.COM  
TREE.COM

Due to space constraints, BASICA.COM and some DOS utilities have not been included on your EtherSeries/DOS diskette (this does not apply if you are using a fixed disk). If you need to use either of these, delete a file from the EtherSeries/DOS diskette with the DOS DEL or ERASE command. You can then use the DOS COPY command to copy the file you need from the DOS master diskette to the EtherSeries/DOS diskette.

**Note:** The software installation procedure copies a system configuration file (called CONFIG.SYS) into the root directory of the diskette or fixed disk you use to boot the system. If you already had a CONFIG.SYS file, it has been saved as CONFIG.OLD. If you were using it to set the DOS configurable parameters or install other device drivers, you will have to merge the CONFIG.SYS and CONFIG.OLD files manually. The EtherSeries configuration file contains one entry:

```
DEVICE = ENET.SYS
```

You can add other entries to this file by putting them after this entry using EDLIN. Alternatively, you can add this entry at the beginning of your original CONFIG.SYS file. If you are using the CONFIG.SYS file to add a driver for another block device (such as a disk), the order of the entries will affect the letters assigned to the drives. When you log in to EtherShare, you will be told which drive letters are available.

When the EtherSeries software and EtherLink card have been installed, and all computers have been connected to the network, you can use the EtherSeries software products as described in the EtherShare, EtherPrint and EtherMail User's Guides.



# Appendix A

## Glossary

---

### Glossary

#### **Barrel Connector**

An adapter that joins two cable segments together to form a longer cable. BNC barrels join Thin Ethernet cable and N-series barrels join thick Ethernet cable.

#### **BNC Connector**

A coaxial connector used in Thin Ethernet networks.

#### **Boot**

Reset your computer, loading new software from the diskette in drive A: or your fixed disk drive. Turning the power off and on is a hard boot; pressing **Ctrl-Alt-Del** is a soft boot.

#### **DIX Connector**

A 15 pin connector used to connect a standard Ethernet transceiver by means of a transceiver cable.

#### **Drive Specifier**

A single letter identifier followed by a colon to refer to your computer's diskette drive(s) or fixed disk drive. On a two-drive system, the left drive is A: and the right drive is B:. The fixed disk drive is C:.

#### **EtherLink Card**

A printed circuit board which plugs into your computer and manages sending and receiving information across the network.

#### **Ethernet**

The DEC-INTEL-XEROX (DIX) standard network communications system, Version 1.0, September 30, 1980.

#### **EtherSeries/DOS Diskette**

A special version of the DOS operating system that contains the software drivers for the EtherLink card.

#### **N-Connector**

A coaxial connector used in thick Ethernet networks.

# Glossary

## **Network**

A collection of computers connected by a common coaxial cable, allowing communication and shared resources.

## **T-adapter**

A hardware connector which attaches Thin Ethernet coaxial cable to the EtherLink card in each computer in the network.

## **Terminator**

A hardware connector containing a 50 ohm resistor which attaches to the T-adapters or coaxial connectors at both ends of the network. Both terminators must be in place for the network to operate correctly.

## **Thick Ethernet**

A version of Ethernet which uses standard Ethernet cable (0.4 inch diameter) and N-series connectors. To use EtherLink with thick Ethernet, you need an external transceiver and transceiver cable, or the N-series to BNC-series adapters.

## **Thin Ethernet**

A version of Ethernet which uses RG-58 A/U cable (0.2 inch diameter) and BNC connectors. A T-adapter connects the Thin Ethernet cable to your EtherLink card.

## **Transceiver Select Switch**

A three-pin jumper connection on the EtherLink card which enables the EtherLink card for use with thick Ethernet (using an external transceiver) or Thin Ethernet (using the internal transceiver).

## Appendix B

# Using Thick Ethernet

---

### Using Thick Ethernet

The EtherLink card for the IBM Personal Computer is compatible with Ethernet local computer networks (Digital-Intel-Xerox (DIX) Version 1.0 and 2.0).

The EtherLink card can be used to build a low-cost Thin Ethernet network, as described in Section 2 of this manual. It can also be used to connect with a DIX "thick" Ethernet network.

Thin Ethernet takes advantage of EtherLink's on-card transceiver. Thin Ethernet cables are connected directly to the BNC connector on the EtherLink card. This cable is lighter, smaller, less expensive and easier to install than thick Ethernet cable, but it limits the length of the network to 1000 feet (304.8 meters).

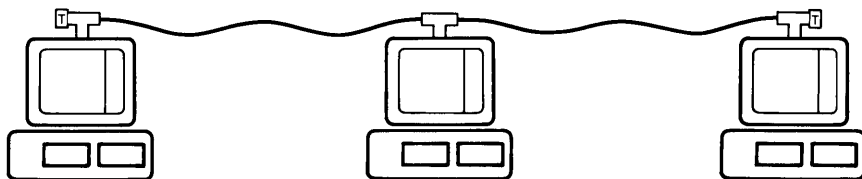


Figure B-1. Thin Ethernet Configuration

Thick Ethernet requires an external transceiver and a cable to connect the transceiver with the EtherLink card, but affords a greater distance and allows the IBM Personal Computers to be located up to 164 feet (50 meters) from the network cable. Thick Ethernet allows a maximum cable length of 3280 feet (1000 meters) when using 3Com transceivers.

You connect an external Ethernet transceiver to the Ethernet transceiver outlet on the rear panel of the EtherLink card. This 15 pin connector conforms to the Ethernet Specification established by Digital Equipment Corporation, Intel and Xerox. The transceiver select switch on the EtherLink card must be set for an external transceiver, as described in Section 2 on Installation.

The EtherLink card can be connected to an Ethernet 2.0 network and will be fully interoperable. This means that it can send and receive data to and from other computers in the network which are built to Ethernet 2.0 Specifications (published November, 1982).

An EtherLink card connected to an Ethernet 2.0 network through a 3Com Ethernet Transceiver (model number 3C100) is also fully interoperable. The EtherLink card can be used with an Ethernet 2.0 transceiver, but it will ignore the transceiver heartbeat.

# Using Thick Ethernet

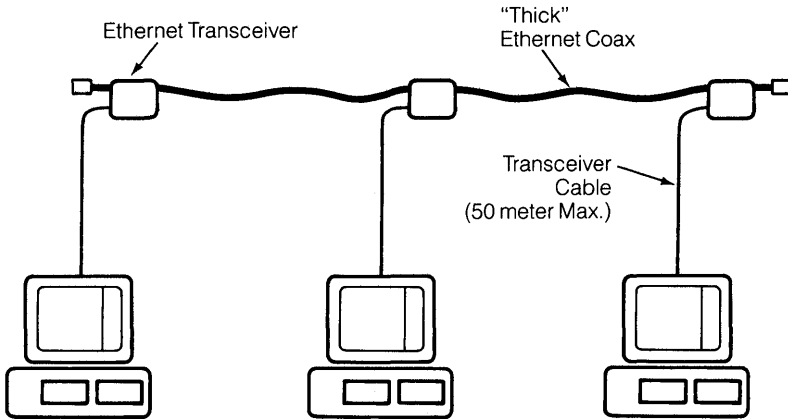


Figure B-2. Thick Ethernet Configuration

## Combining Thin Ethernet with Thick Ethernet

Thin Ethernet and standard Ethernet coaxial cables are electronically identical and both conform to the signal and protocol definitions of the Ethernet specification. Because of its reduced size, Thin Ethernet has a slightly higher signal loss and so cannot transmit information over as great a distance. If you combine both types of cable into a single network, do not exceed the combination of lengths shown in Table B-1.

Length of Thin Ethernet Cable		Length of thick Ethernet Cable with 3Com Transceivers only	
Meters	Feet	Meters	Feet
304.8	1000	0	0
300	984	16	52
250	820	180	590
200	656	344	1128
150	492	508	1666
100	328	672	2204
50	164	836	2742
0	0	1000	3280

Table B-1. Combining Thin and Thick Ethernet Cables

## Using Thick Ethernet

For example, if you use 200 meters of Thin Ethernet cable in your network, you cannot use more than 344 meters of thick Ethernet cable in the same network.

When you combine Thin Ethernet with thick Ethernet, you must adhere to the following specifications:

1. The total length of the combined network should not exceed 1000 meters or the length as defined by the expression:

$$(3.28 \times T) + E \leq 1000 \text{ meters}$$

where T = length of Thin Ethernet cable in meters  
E = length of thick Ethernet cable in meters

This assumes only 3Com transceivers and EtherLinks on the network. If you use transceivers supplied by other manufacturers, total length is reduced to:

$$(3.28 \times T) + E \leq 500 \text{ meters}$$

2. There should be a minimum of 7.5 feet (2.5 meters) between any two computers on thick Ethernet, and 3 feet (1 meter) on Thin Ethernet.



# Using Thick Ethernet

Table B-2 compares the specifications for Thin Ethernet and thick Ethernet networks.

	<b>Thin Ethernet</b>	<b>Ethernet Specification</b>
Cable type	RG-58 A/U, 50 ohm RG-58 C/U, 50 ohm	Ethernet, 50 ohm
Connectors	BNC Series	N Series*
Maximum length of segment	1000 feet (304.8 meters)	1640 feet (500 meters)**
Minimum distance between computers or transceivers	3 feet (1 meter)	7.5 feet (2.5 meters)***

**Table B-2. Comparison of Thin Ethernet to Thick Ethernet Network**

\* Assumes 3Com 3C100 transceivers. Other transceivers may use tap type connectors.

\*\* Using only 3Com 3C100 transceivers increases the maximum network length to 3280 feet (1000 meters).

\*\*\* If you use 3Com 3C100 transceivers, there is no minimum distance between transceivers.

A complete list of Ethernet and Thin Ethernet components is given in table B-4.

## Interseries Adapters

The components listed in table B-3 are used to interconnect thick Ethernet and Thin Ethernet cables. They can be ordered from 3Com by the model numbers shown.

<b>Adapter</b>	<b>Description</b>	<b>3Com Model Number</b>
BNC Female to N Series Female	Connects Thin Ethernet cable to thick Ethernet cable	3C540
BNC Female to N Series Male	Adapts Ethernet transceiver for BNC connectors and Thin Ethernet cable	3C541
BNC Barrel Connector	Connects two lengths of Thin Ethernet cable	3C536
N Series Barrel Connector	Connects two lengths of thick Ethernet cable	3C160

**Table B-3. Ethernet to Thin Ethernet Connectors**

# Using Thick Ethernet

## Repeaters

Repeaters allow you to combine multiple thick Ethernet or Thin Ethernet segments into a larger network. Repeaters link separate segments together, forming a larger multi-branch network with operational characteristics similar to a single Ethernet coaxial cable segment. Repeaters extend the length of a single cable segment and enable branching from a centrally located segment. Each repeater has the electrical characteristics of a single transceiver, so the combined number of repeaters and computers cannot exceed 100 on any cable segment. No more than two repeaters can be in the path between any two computers.

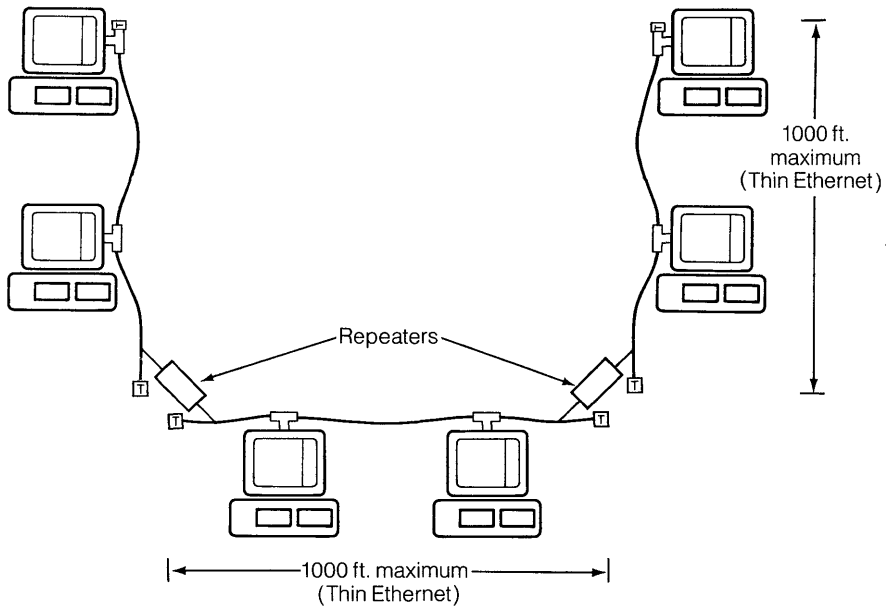


Figure B-3. Ethernet Network with Repeaters

## Using Thick Ethernet

Table B-4 gives a complete list of Ethernet and Thin Ethernet components which can be ordered from 3Com by the model numbers shown.

<b>Thin Ethernet Cables and Accessories</b>	<b>3Com Model Number</b>
Thin Ethernet Cable, 7 meter (23 feet)	3C530-007
Thin Ethernet Cable, 15 meter (49 feet)	3C530-015
Thin Ethernet Cable, 30 meter (98 feet)	3C530-030
Thin Ethernet Cable, xxx meter (minimum length 60 meters)	3C530-xxx
Thin Ethernet Terminator Kit (two 50 ohm BNC terminators)	3C535
Thin Ethernet (BNC) Barrel Connector	3C536
Thin Ethernet (BNC) T-Connector	3C539
Thin Ethernet (BNC) T-adaptor for Compaq Portable Computer (used in place of T-adaptor supplied with EtherLink)	3C539A
Thin Ethernet Loopback Plug (attaches to BNC connector on card)	3C537
Standard Ethernet Loopback Plug (attaches to transceiver connector on card)	3C538
<b>Standard Ethernet Transceivers, Cables and Accessories</b>	<b>3Com Model Number</b>
Ethernet Transceiver	3C100
Transceiver Cable, 5 meter (16 feet)	3C110-005
Transceiver Cable, 10 meter (32 feet)	3C110-010
Transceiver Cable, 15 meter (49 feet)	3C110-015
Ethernet Coaxial Cable, 15 meter (49 feet)	3C120
Ethernet Coaxial Cable, xxx meter	3C120-xxx
Ethernet Coaxial Cable Terminator (one 50 ohm N-series terminator)	3C130
Ethernet (N-series) Barrel Connector	3C160

Table B-4 Continued

# Using Thick Ethernet

<b>Adapters between Standard and Thin Ethernet</b>	<b>3Com Model Number</b>
Thin Ethernet Cable to Standard Ethernet Cable Adapter (BNC female to N-series female)	3C540
Thin Ethernet Cable to Ethernet Transceiver Adapter (BNC female to N-series male)	3C541

<b>Components for Fabricating Ethernet Cables</b>	<b>3Com Model Number</b>
Bulk Thin Ethernet Cable, xxx meter (no connectors, minimum length 200 meters)	3C531-xxx
Bulk Ethernet Coaxial Cable, xxx meter (no connectors, minimum length 100 meters)	3C121-xxx
Insulated Connector for Thin Ethernet Coaxial Cable (BNC male clamp-type connector)	3C542
Insulated Connector for Ethernet Coaxial Cable (N-series male clamp-type connector)	3C150

Table B-4. Ethernet and Thin Ethernet Components

## Appendix C

# Problem Solving on the Network

---

The EtherSeries User Software Diskette supplied with your EtherLink card includes a diagnostic program called DIAGNOSE.COM which can be used to help you solve problems with your network.

The program indicates three possible sources of Ethernet problems:

- The EtherLink card
- The network (coaxial cable and connectors)
- The server

This appendix describes the DIAGNOSE program, the equipment and tools required to run the program, a step-by-step procedure on how to use the DIAGNOSE program, and potential solutions to problems which may be found on the network.

# Problem Solving

## The Diagnose Program

DIAGNOSE takes about two minutes to run from start to finish. As it runs, it reports its progress by displaying the name of each internal test routine and counts each pass of the tests. There are seven internal test routines:

- |                      |                             |
|----------------------|-----------------------------|
| 1 - Preliminary test | 5 - Message exchange test   |
| 2 - DMA test         | 6 - Passive receive test    |
| 3 - Packet test      | 7 - EtherSeries echo server |
| 4 - Recognizer test  |                             |

Tests 1 and 2 do not attempt to transmit or receive packets of data on the network. Any error during these tests indicates a failure of the Ethernet controller or the DMA channel in your IBM Personal Computer.

Tests 3 and 4 (the packet and recognizer tests) use both the receive and transmit circuitry of the controller. Running these while connected to an active network can occasionally cause false errors due to interaction with extraneous network traffic.

Normally, these interactions and the resultant errors are not reported unless they exceed a certain level. If the "A" option is used, all errors are reported, including those caused by the extraneous network traffic. Using the "A" option when connected to an active network may result in errors being reported even though the EtherLink card is functioning properly.

Test 5 (the message exchange test) depends on the availability of another PC or network server to exchange EtherSeries or NS echo protocol packets. This test does not run when the loopback ("L") parameter is used in the command string.

Test 6 (the passive receive test) counts any legal packet that is transmitted on the network. It does not run as a part of the regular test sequence, but can be used to indicate network activity. Test 6 continues to run until interrupted by **Cntl-Break**.

Test 7 (EtherSeries echo server) designates this computer as an echo server which is used to exchange packets with a computer under test. This test does not run as a part of the regular test sequence. It echoes messages back to computers which are running test 5 (message exchange test). Test 7 continues to run until interrupted by **Cntl-Break**.

## Format

DIAGNOSE [*I*] [*D*] [*-D*] [*Bxxx*] [*L*] [*#*] [*A*] [*M*] [*E*]

## Parameters

- I* Tests for interrupts on INT 5. This should only be used if the INT jumpers have been changed from the factory setting. Otherwise, Interrupts on INT 3, the factory setting, will be tested.
- D* Uses DMA channel three. This option should only be used if the DMA jumpers have been altered from the factory settings. Otherwise DMA channel one, the channel selected by the factory, is used.
- D* Does not use the DMA channel at all.
- Bxxx* Sets the base address of the EtherLink card to xxx (three hexadecimal digits). This option should only be used if the I/O address jumpers on the EtherLink card have been changed.
- L* Use this option when testing with a loopback connector. Testing stops at the first error. The extraneous traffic filter is turned off.
- #* Enter 1, 2, 3, 4, 5, 6 or 7 to select one of the following test routines:
- 1 - Preliminary test
  - 2 - DMA test
  - 3 - Packet test
  - 4 - Recognizer test
  - 5 - Message exchange test
  - 6 - Passive receive test
  - 7 - EtherSeries echo server
- If you use this parameter, the test you select is the only test that will be run.
- A* Reports all errors. The extraneous traffic filter is turned off.
- M* Prints an extended diagnostic message after a fatal error.
- E* Uses NS echo protocol to access remote nodes during the message exchange test. This option should be used on Xerox NS 8000 networks that have echo servers.



# Problem Solving

## Requirements for Testing

For testing, you need:

- Another IBM Personal Computer with an EtherLink card installed, connected to the network;
- OR
- An IBM PC or AP Network Server that is operating and connected to the network.

One of these will be used as an echo server, which will exchange packets over the network with the computer during the final stages of testing.

If neither of these are available, you can still test 98% of the EtherLink card. You must disconnect the malfunctioning computer from the network, attach a loopback plug to the EtherLink card, and run the DIAGNOSE program using the "L" (loopback) parameter.

If you do a loopback test, you must use the loopback plug that corresponds to the way you are connected to your network. You cannot use the other type of loopback connector without reconfiguring the transceiver select switch on the EtherLink card.

- If you are using your EtherLink with Thin Ethernet, use a Thin Ethernet loopback plug.
- If you are using an external transceiver and thick Ethernet, use a standard Ethernet loopback plug.

## Running the DIAGNOSE Program

The DIAGNOSE program is supplied on the EtherSeries User Software Diskette.

1. Run the DIAGNOSE program on another IBM Personal Computer that is connected to the network and known to be working correctly. (Omit this step if you have an operating Network Server on your network.)

Insert the EtherSeries User Software Diskette in drive A: and type:

```
A> DIAGNOSE 7 ←
```

2. Run the DIAGNOSE program on the IBM Personal Computer that appears to be malfunctioning.

Insert the EtherSeries User Software Diskette in drive A: and type:

```
A> DIAGNOSE ←
```

3. As the program runs, it prints messages indicating its progress through various tests. When it finds a failure, it prints the message:

```
TEST FAILS, _____ failure: _____
```

Messages you might receive as causes of failure include:

- hard controller failure
- probable controller failure

(A controller failure indicates failure of the EtherLink card)

- probable network failure
- probable server failure

Examples of these failures and potential solutions are described on the following pages.

# Problem Solving

## Controller Failure

Isolate a failing controller as follows:

1. Disconnect the IBM Personal Computer from the network.
2. Substitute the appropriate loopback connector. If you are using your EtherLink with Thin Ethernet, use a Thin Ethernet loopback plug. If you are using an external transceiver and thick Ethernet, use a standard Ethernet loopback plug. You must use the loopback plug that corresponds to your network. You cannot use the other type of loopback connector without reconfiguring the transceiver select switch on the EtherLink card.
3. When you have installed the loopback connector, run DIAGNOSE with the "L" option.
4. If DIAGNOSE ends with a fatal error while using the loopback connector, either the EtherLink card or the DMA controller in the computer under test has failed.

To isolate an EtherLink card failure from a failure of the IBM Personal Computer, move the EtherLink card to another computer and repeat steps 1-4.

DIAGNOSE can run while attached to an active network, but under these circumstances a fatal error does not necessarily mean that this EtherLink card is malfunctioning. For example, an unterminated network would cause DIAGNOSE to fail due to excessive collisions.

Unless you explicitly indicate the presence of a loopback connector by using the "L" option, DIAGNOSE attempts to exchange messages with another PC, a network server, or a Xerox NS 8000 echo server (Xerox NS 8000 echo server requires the "E" option to be set). If DIAGNOSE cannot find a server on the network, there are malfunctions in either the cable, the PC being used as the echo server, the network server, or the Xerox NS 8000 echo server.

### Network Failure

When all nodes on the network cannot communicate, the likely cause is a network cable failure. Possible causes of cable failure are:

- The cable has been disconnected by unscrewing a connector or terminator
- The network is not terminated at one or both ends; excessive collisions will be reported
- The network is improperly installed; for example:
  - the cable length exceeds 1000 feet
  - there are more than 100 computers connected to the cable
  - the minimum distance between computers has not been observed (refer to table B-1 in Appendix B)
  - there are “branches” off the main network cable “trunk”
- The terminators are faulty; causes excessive collisions or transmissions without corresponding receptions
- There are breaks in the center conductor or shield; causes excessive collisions
- A short in the cable between the shield and center conductor can cause excessive data and fcs (frame check sequence) errors
- There are multiple grounds on the cable shield; can cause data and fcs errors

# Problem Solving

If you suspect a **network failure**:

1. Make sure the network is properly terminated. A terminator should be attached to each end of the cable.
2. Check all connectors on the network to make sure none have been disconnected or are loose.
3. Check that the terminators are of the proper resistance, 50 ohms, and are not shorted.
4. Check that the network is grounded at only one point.

If you suspect a network failure, but cannot identify the failing component by inspection, isolate the failure as follows:

1. Partition the network into two halves and terminate each half.
2. One half of the network should now function and one should not, helping to isolate the problem.
3. Continue the procedure of halving the failing part of the network until you isolate the faulty station, T-adapter or cable segment.

## Server Failure

If the message indicates a **probable server** failure, try the following:

1. Check that you have an operating Network Server or IBM Personal Computer running the DIAGNOSE 7 command on the network
2. Try running the DIAGNOSE 7 command on another computer
3. Try running the DIAGNOSE program on another computer

## Examples

The following example shows a test that was run on a fully functioning network. Highlighted information will vary depending on your installation.

A> **DIAGNOSE** ←

3Com Ethernet Diagnostic for the IBM Personal Computer  
Version n.n © Copyright 3Com Corporation 1982, 1983

My station address is 02 60 8C 00 00 10

Preliminary test 1 2 3 4 5 6 7 8 9 10 complete

DMA test 1 2 3 4 5 6 7 8 9 10 complete

Packet test 1 2 3 4 5 6 7 8 9 10 complete

Recognizer test 1 complete

EtherShare service by 02 60 8c 00 09 47

2166 (0)/700 packets transmitted (collision)/received

Your controller passes diagnose with flying colors.

The following example shows a test that was run on a failing network.

A> **DIAGNOSE** ←

3Com Ethernet Diagnostic for the IBM Personal Computer  
Version n.n © Copyright 3Com Corporation 1982, 1983

My station address is 02 60 8C 00 00 10

Preliminary test 1 2 3 4 5 6 7 8 9 10 complete

DMA test 1 2 3 4 5 6 7 8 9 10 complete

Packet test · ← Cause of Failure      ← Diagnostic Aid

TEST FAILS, probable network failure; excessive collisions

1 (15)/0 packets transmitted(collision)/received

excessive collisions

total errors 16

15 collision

1 excessive collisions

In this example, the network is given as the probable cause of failure, and excessive collisions are reported as a diagnostic aid. Other messages you might receive as causes of failure are:

- hard controller failure
- probable network failure
- probable network failure
- probable server failure

# **Problem Solving**

## **For Information or Repair**

For further information on diagnosing or repairing your network components, contact your dealer or call 3Com's Customer Support Department (between 8:00 and 5:00 Pacific Time) at (415) 961-9602.

## **Appendix D**

# **Using EtherSeries Products with IBM PC Compatibles**

---

The following information has been compiled for your convenience. While every effort has been made to assure its accuracy, no guarantee can be made because of the changing nature of the IBM PC compatible marketplace and products.

The Version 2.2 (and later) EtherSeries User and Server Software will operate correctly with most MS-DOS 2.0 (and later) operating system versions. In addition, network-dependent timing functions were replaced by operating system calls to make the software independent of the CPU speed.

Contact your dealer for further information on compatibility between EtherSeries and IBM PC compatibles.

The following computers will operate with EtherSeries. Changes to installation procedures and operational differences are noted below.

### **Compaq and Compaq Plus**

1. The EtherLink card should be installed in slot 5 (nearest the back of the computer).
2. Because the connector panel on the Compaq is recessed, a different T-adaptor must be used to connect to the Thin Ethernet network. This adaptor is available from 3Com, model number 3C539A.

### **Columbia**

Early versions of the Columbia parallel printer port were incompatible with IBM's.

### **Corona**

The Corona fixed disk uses I/O addresses that conflict with EtherLink card. You may reconfigure the EtherLink to use a different base address. (280H is suggested.)



# Using EtherSeries Products with IBM PC Compatibles

## **Eagle**

There are no differences. (PC+ and XL only. Turbo untested at this printing.)

## **Televideo**

EtherLink plugs into single PC-type expansion slot.

## Appendix E

# Configuring the EtherLink and EtherSeries User Software to Use Different DMA, Interrupts, or Base Addresses

---

If you want to add peripheral equipment to your IBM PC that conflicts with any of the factory settings, you must:

- change the appropriate jumpers on the EtherLink card, and
- patch the software to use the corresponding values

The EtherSeries User Software is configured to run with the factory-set jumpers on the EtherLink card, as follows:

DMA Channel	1
Interrupt Level	3 (after May, 1983) 5 (before May, 1983)
I/O Base Address	300H (uses addresses 300-30FH)

The EtherSeries User Software is configured to use DMA Channel 1, so as not to conflict with the IBM PC fixed disk which uses DMA channel 3. The EtherSeries User Software may not work properly with a non-IBM fixed disk that uses DMA channel 1.

The EtherSeries User Software does not use interrupts.

The EtherLink card uses 16 sequential I/O addresses, starting at the base address.

# Configuration

## The EtherLink Card

There are two versions of the EtherLink card. Before using the information in this appendix to reconfigure your card, be sure you know which version of the card you have. The EtherLink card is identified by an assembly number printed on the top left corner or along the lower edge of the card, as shown in figure E-1.

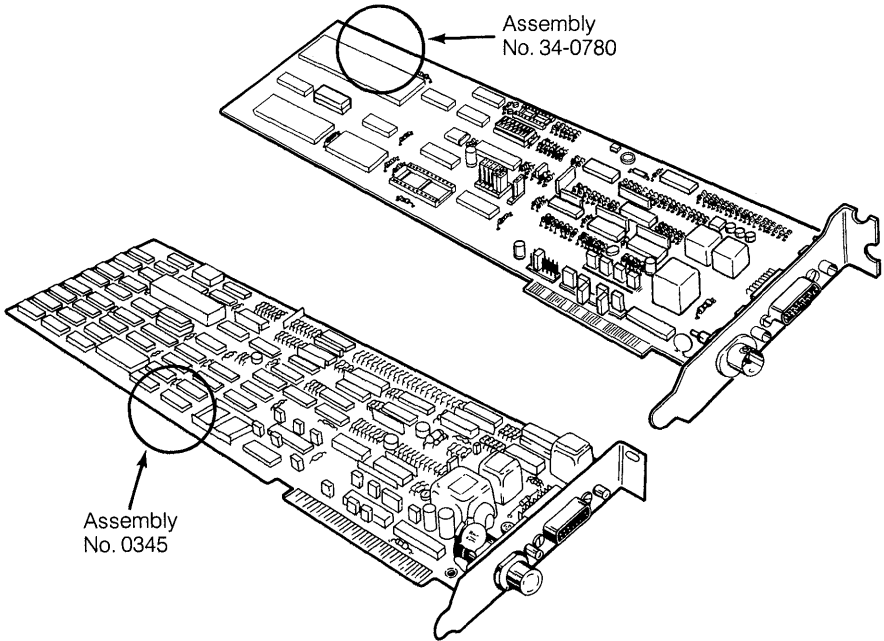


Figure E-1. EtherLink Card Assembly Numbers

Your card will be either assembly number 0345 or 34-0780.

This appendix gives instructions for reconfiguring both versions of the EtherLink card. Be sure you follow the instructions for your particular version.

Both versions of the card operate in the same way, but offer different choices for reconfiguring DMA, interrupts, and base addresses. These choices are described in Table E-1.

# Configuration

	<b>Assembly No. 0345</b>	<b>Assembly No. 34-0780</b>
DMA Channel	1 or 3	1, 2, or 3
Interrupt	3 or 5	2, 3, 4, 5, 6, or 7
I/O Base Address	200-3F0	0-3F0

**Table E-1. Possible Configurations for the EtherLink Cards**

The IBM PC components and peripherals use the DMA, interrupts, and base addresses shown in Table E-2. Before you reconfigure the EtherLink card, check this table and documentation provided with your other accessory boards to be sure you do not conflict with any of the other settings.

<b>IBM Add On Feature</b>	<b>Interrupt Channel</b>	<b>DMA Channel</b>	<b>I/O Address</b>
SDLC	4 and 3	1	380-38C
Fixed Disk	5	3	321-323
Diskette Drive	6	2	3F2, 3F4, and 3F5
Parallel Printer	7	—	3BC-3BD 378-37A
ASYNCR Adaptor	4 and 3	—	3F0-3FF 2F0-2FF
Prototype Card	—	—	300-31F

**Table E-2. IBM PC DMA, Interrupts, and Base Addresses**

# Configuration

## Changing Jumpers on the EtherLink Card (Assembly No. 0345)

The jumpers to configure the DMA channel, interrupt channel, and base I/O address of the EtherLink card are located near the connector at the bottom of the card, as shown below:

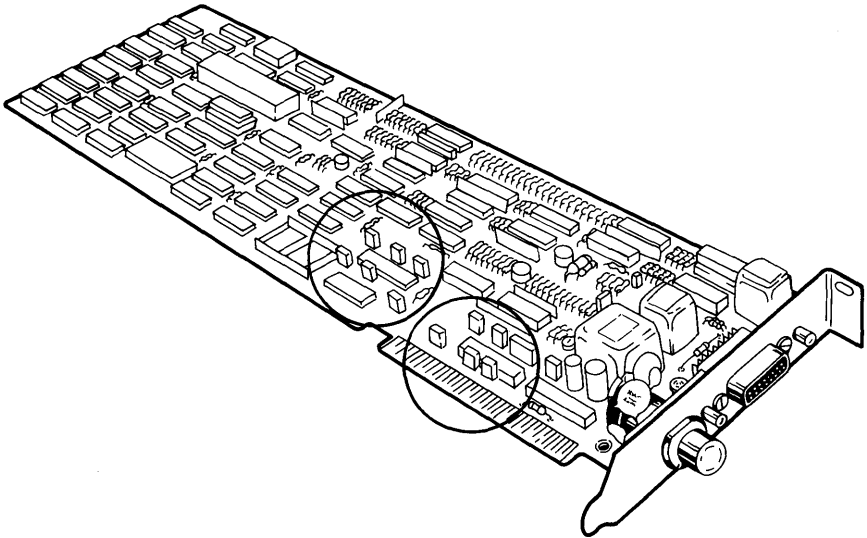


Figure E-2. Location of Jumpers (Assembly No. 0345)

### Jumper Description (0345)

Each jumper consists of a plastic block holding three pins. A plastic cover fits over the middle and one of the end pins, shorting them together. Changing the position of the jumper to fit over the middle and the other end pin will change its state.

---

### CAUTION

Certain jumper blocks are placed close together on the board. Connecting two adjacent pins that are not on the same jumper block could cause electrical damage to the board. USE CAUTION TO BE SURE THAT THE JUMPERS ARE PROPERLY INSTALLED.

---

## DMA Channel Jumpers (0345)

There are two jumpers required to select the DMA channel:

- To select DMA channel 1, both jumpers should be set to connect the left and center pins on JP1 and JP2. This is the default factory setting.
- To select DMA channel 3, move the jumper cover to fit over the center and right pins on both jumper blocks.

In the figure below, the jumpers are shown set for DMA channel 1.

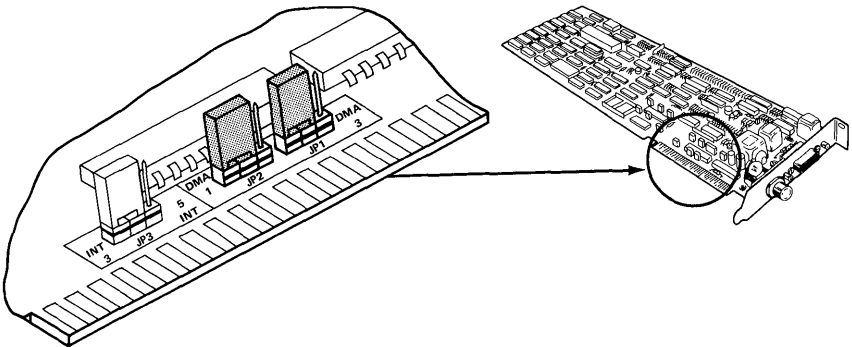


Figure E-3. DMA Channel Jumpers (Assembly No. 0345)

## Interrupt Channel Jumpers (0345)

There is only one jumper block required to select the interrupt channel. In the figure which follows, the interrupt jumper is set for interrupt level 3.

- To select Interrupt channel 3, place the jumper over the left and center pins on JP3.
- To select Interrupt channel 5, place the jumper over the center and right pins.

# Configuration

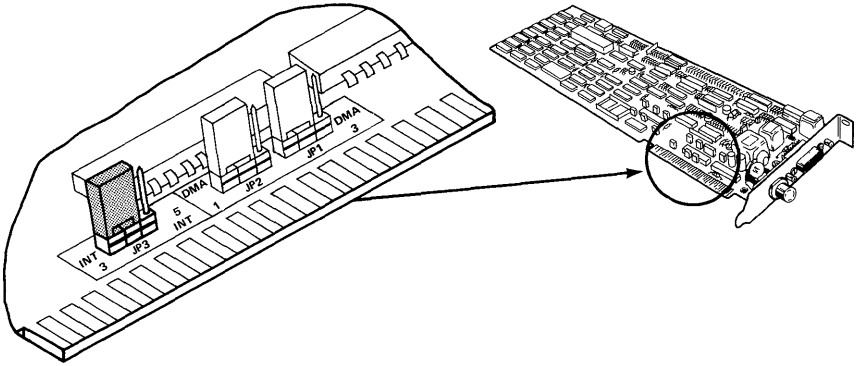


Figure E-4. Interrupt Channel Jumpers (Assembly No. 0345)

## I/O Base Address Jumpers (0345)

The EtherLink card uses 16 I/O addresses, starting at the I/O base address selected by jumpers JP4, JP5, JP6, JP7 and JP8. The I/O address bit and factory setting for each jumper is shown below:

Jumper Number	JP4		JP5		JP6		JP7		JP8	
I/O Address Bit	9	8	7	6	5	4	3	2	1	0
Possible Values	1	1/0	1/0	1/0	1/0	1/0	0	0	0	0
Factory Settings	1	1	0	0	0	0	0	0	0	0
Hex Value	3				0				0	

To change the base address, locate the jumper corresponding to the address bit you want to select.

- To set the address decoding logic to recognize a “1”, place the jumper cover so that it fits over the center and right pins on the jumper block.
- To set the logic to recognize a “0”, place the jumper cover to fit over the left and center pins.

The EtherLink card can be set to select any I/O address block starting between 200H and 3F0H, inclusive. In the figure, the I/O Base Address is set for 300H.

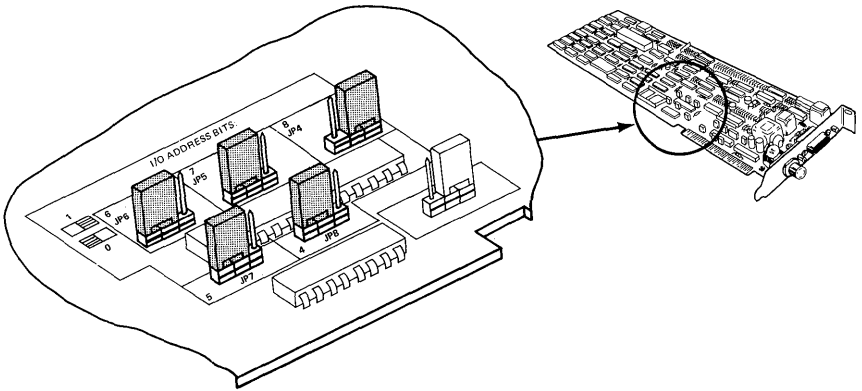


Figure E-5. I/O Base Address Jumpers (Assembly No. 0345)



## Configuration

### Changing Jumpers on The EtherLink Card (Assembly No. 34-0780)

The jumpers to configure the DMA channel, interrupt channel, and base I/O address of the EtherLink card are located near the connector at the bottom of the card, as shown below:

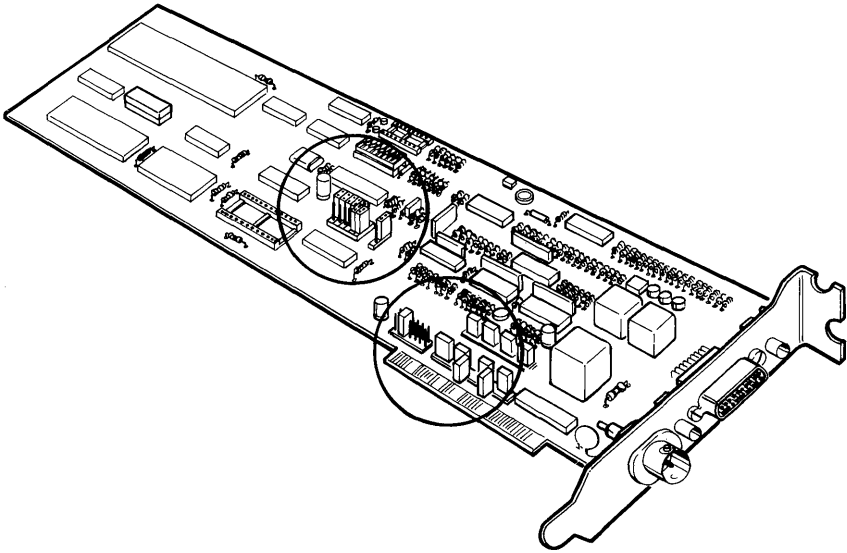


Figure E-6. Location of Jumpers (Assembly No. 34-0780)

#### Jumper Description (34-0780)

The I/O base address jumpers consist of a plastic block holding three pins. A plastic cover fits over the middle and one of the end pins, shorting them together. Changing the position of the jumper to fit over the middle and the other end pin will change its state.

The DMA channel and interrupt jumpers consist of several rows, each containing two pins. A plastic block fits over one row of two pins. Changing the position of the jumper to fit over another row of pins will change its state.

---

## CAUTION

Certain jumper blocks are placed close together on the board. Connecting two adjacent pins that are not on the same jumper block could cause the board to malfunction. USE CAUTION TO BE SURE THAT THE JUMPERS ARE PROPERLY INSTALLED.

---

### DMA Channel Jumpers (34-0780)

There are two jumpers required to select the DMA channel:

- To select the DMA request channel, move the jumper cover to fit over two of the pins in the leftmost group (toward the label DMA REQ). You can select channel 1, 2, or 3.
- To select the DMA acknowledge channel, move the jumper cover to fit over two of the pins in the rightmost group (toward the label DMA ACK). You can select channel 1, 2, or 3.
- Both jumpers must select the same DMA channel.

In the figure below, the jumpers are shown set for DMA channel 1.

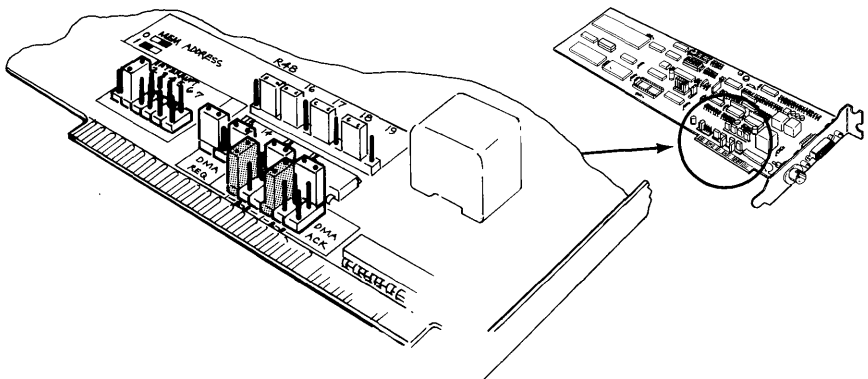


Figure E-7. DMA Channel Jumpers (Assembly No. 34-0780)

# Configuration

## Interrupt Channel Jumpers (34-0780)

There is only one jumper block required to select the interrupt channel. In the figure below, the interrupt jumper is set for interrupt level 3.

You can use interrupt channels 2 through 7. Place the jumper over the row of two pins that corresponds to the channel you want to select.

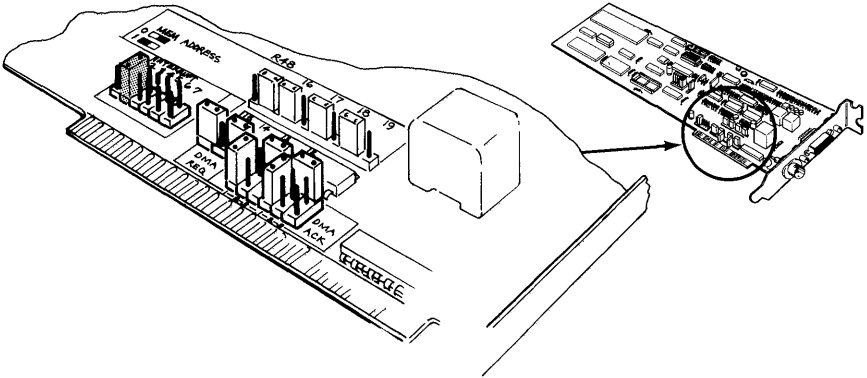


Figure E-8. Interrupt Channel Jumpers (Assembly No. 34-0780)

## I/O Base Address Jumpers (34-0780)

The EtherLink card uses 16 I/O addresses, starting at the I/O base address selected. The I/O address bit and factory setting for each jumper is shown below:

I/O Address Bit	9	8	7	6	5	4	3	2	1	0
Possible Values	1/0	1/0	1/0	1/0	1/0	1/0	0	0	0	0
Factory Settings	1	1	0	0	0	0	0	0	0	0
Hex Value	3		0				0			

To change the base address, locate the jumper corresponding to the address bit you want to select.

- To set the address decoding logic to recognize a "1", place the jumper cover so that it fits over the center and lower pins on the jumper block.
- To set the logic to recognize a "0", place the jumper cover to fit over the center and top pins.

The EtherLink card can be set to select any I/O address block starting between 0 and 3F0H, inclusive. In the figure, the I/O Base Address is set for 300H.

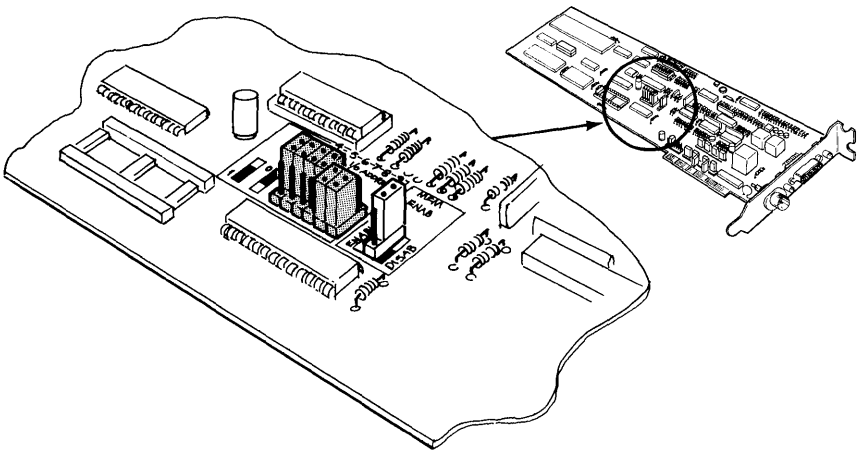


Figure E-9. I/O Base Address Jumpers (Assembly No. 34-0780)

## Modifying the EtherSeries User Software

If you change the DMA channel or I/O Base Address, you must modify the EtherSeries network driver program which is contained in the file ENET.SYS. This is stored on your EtherSeries/DOS boot diskette, or on your fixed disk drive if you have an XT and boot from the fixed disk.

The EtherSeries User Software does not use interrupts.

# Configuration

## Making the Changes to ENET.SYS

You will use the DOS DEBUG utility to change the I/O Base Address or DMA channel values in the software to correspond with changes you have made to your EtherLink card.

Before beginning this procedure, you may need to copy the file DEBUG.COM from your DOS master diskette to your EtherSeries/DOS diskette.

**Run the DEBUG program.** Type:

```
A> DEBUG ENET.SYS ←
```

When a dash "-" is displayed, the program has loaded and you are ready to make the changes.

To change the DMA channel, select and type in the appropriate line:

```
-e 118 1 ←           Changes to DMA channel 1  
-e 118 2 ←           Changes to DMA channel 2  
-e 118 3 ←           Changes to DMA channel 3
```

**To change the I/O base address,** type in the following line and supply the base address value:

```
-e 116 LL HH ←       Changes the I/O base address to  
                        hexadecimal value HHLL.
```

Examples:

```
-e 116 60 02 ←       Changes base address to 260H.  
-e 116 00 03 ←       Changes base address to 300H.
```

**Save the changed values** by typing:

```
-w ←  
Writing XXXX bytes.  
-q ←
```

**Reboot your PC** (Cntl-Alt-Del) to load the modified software into memory.

# Index

---

## A

- Adapter Plate Assembly, installation, 2-10
- Adding More Computers, 2-15
  - in the middle of the network, 2-17
  - to the end of the network, 2-16
- Administration, overview, 1-4
- Attach Cables and Terminators to T-adapters, 2-13
- Attach T-adapter to Computer, 2-15

## B

- Barrel Connector, definition, A-1
- BNC Connector, definition, A-1
- Boot, definition, A-1

## C

- Cables
  - attaching to terminators and T-adapters, 2-13
  - installing, 2-12
- Columbia MPC, used with EtherSeries, D-1
- Compaq Personal Computer, used with EtherSeries, D-1
- Configuration File, 2-23
- Configuration Requirements, 2-12
- Connecting Two Computers, 2-13
- Controller Failure, C-8
- Customer Support Number, C-1

## D

- DIAGNOSE Program, C-2
- Diagnosing Ethernet Problems, C-6
- Diagnostic Procedures, C-1
- Disconnect System Unit, 2-3

- DIX Connector, definition, A-1
- DMA Test, C-4
- Drive Specifier, definition, A-1

## E

- Echo Server, C-4
- EtherLink, overview, 1-1
- EtherLink Card
  - definition, A-1
  - installation, 2-3, 2-8
  - installing the card guide, 2-7
- EtherMail, overview, 1-2
- Ethernet
  - definition, A-1
  - problems, C-6
- EtherPrint, overview, 1-2
- EtherSeries
  - documentation, 1-4
  - EtherSeries/DOS files, 2-23
  - installing software, 2-18
  - overview, 1-1
  - used with IBM PC compatibles, D-1
- EtherSeries/DOS Diskette
  - creating, 2-18
  - definition, A-1
  - files, 2-23
- EtherShare, overview, 1-2
- Expansion Slot, preparation, 2-5

## F

- Failure
  - controller, C-8
  - network, C-6
- Files, EtherSeries/DOS, 2-23

# Index

## G

Ground a Terminator, 2-14

## H

Hard Controller Failure, C-2

Hot Line Number, C-1

## I

Installation

adapter plate assembly, 2-10

Etherlink card, 2-3, 2-8

EtherLink card guide, 2-7

EtherSeries software, 2-18

on diskette, 2-18, 2-20

on fixed disk, 2-22

overview, 2-1

thin Ethernet cables, 2-12

Interseries Adapters, B-5

## M

Message Exchange Test, C-4

## N

N-Connector, definition, A-1

Network

definition, A-2

failure, C-6

Network Servers, overview, 1-3

## P

Packet Test, C-4

Passive Receive Test, C-4

Preliminary Test Routine, C-4

Prepare the Expansion Slot, 2-5

Probable Network Failure, C-2

Probable Server Error, C-2

Problem Solving, C-1

## R

Recognizer Test, C-4

Reconnect Cables and Power, 2-9

Remove System Unit Cover, 2-4

Repeaters, B-6

Replace System Unit Cover, 2-9

Requirements

for cable configuration, 2-12

for EtherLink installation, 2-2

## S

Software Installation, 2-18

System Unit

disconnecting, 2-3

reconnecting, 2-9

removing the cover, 2-4

replacing the cover, 2-9

## T

T-adapter

attach to cable, 2-13

attach to computer, 2-15

definition, A-2

Terminator

attach to cable, 2-13

definition, A-2

grounding, 2-14

Test Routines, C-4

Thick Ethernet

combined with thin Ethernet, B-2

components, B-7

definition, A-2

using, B-1

Thin Ethernet

combined with thick Ethernet,  
B-2

components, B-7

definition, A-2

installing the cables, 2-12

Transceiver  
external, 2-6, B-1  
on-board, 2-6, B-1  
setting the switch, 2-6

Transceiver Select Switch  
definition, A-2  
setting, 2-6

## U

Using EtherSeries Products with  
IBM PC Compatibles, D-1

Using Thick Ethernet, B-1

Using This Manual, 1-4





# **EtherShare User's Guide**

Software by: Jeff Mason  
Lynn Welge  
Greg Shaw

User's Guide by: Joan Lasselle  
Carol Ramsay  
Steve Pomeroy

Version 2.0 July 1983

Copyright © 1982, 1983 by 3Com Corporation  
1365 Shorebird Way  
P.O. Box 7390  
Mountain View, California 94039  
USA

(

(

(

# Contents

---

## **Section 1—Introduction**

Overview .....	1-1
Functions .....	1-2
Using this Manual .....	1-3

## **Section 2—Concepts and Terminology**

Overview .....	2-1
Network Server .....	2-1
Logging In .....	2-1
EtherShare Volumes .....	2-1
Volume Access .....	2-2
Volume Passwords .....	2-2
Batch Files .....	2-3
Multiple Servers .....	2-3
Server Names .....	2-3
Sys.Sys2 Volume .....	2-4
Cross Server Links .....	2-4

# Contents

## Section 3—Using EtherShare

Overview .....	3-1
Getting Started .....	3-2
Logging In .....	3-2
Creating an EtherShare Volume .....	3-3
Linking to a Volume .....	3-4
Using DOS Commands .....	3-5
Ending a Link .....	3-5
Logging Out .....	3-6
<b>EtherShare Applications</b> .....	3-6
Linking to Other Users' Volumes .....	3-6
Listing Volume Names .....	3-7
Using Purchased Software .....	3-7
Using WordStar .....	3-8
Using VisiCalc .....	3-9
<b>Managing EtherShare Users and Volumes</b> .....	3-11
Modifying a Volume .....	3-11
Erasing a Volume .....	3-11
Creating a New User Name .....	3-12
Modifying a User Name .....	3-12
Erasing a User Name .....	3-13
Displaying the User Directory .....	3-13
<b>Using Batch Files</b> .....	3-14
The LOGIN Batch File .....	3-15

**Section 4—EtherShare Commands**

Overview ..... 4-1

Selecting Commands ..... 4-1

Command Format ..... 4-2

    Prompted and Unprompted Form ..... 4-2

        Prompted Form ..... 4-2

        Unprompted Form ..... 4-3

The /NP Parameter ..... 4-3

Multiple Commands on One Line ..... 4-3

Cancelling Commands ..... 4-3

Format Notation ..... 4-4

ES CREATE Command ..... 4-5

ES DIR Command ..... 4-8

ES ERASE and ES DEL Command ..... 4-10

ES HELP Command ..... 4-11

ES LINK Command ..... 4-12

ES LOGIN Command ..... 4-15

ES LOGOUT Command ..... 4-17

ES MODIFY and ES RENAME Commands ..... 4-18

ES SDIR Command ..... 4-21

ES UCREATE Command ..... 4-23

ES UDIR Command ..... 4-25

ES UERASE and ES UDEL Commands ..... 4-27

ES UMODIFY Command ..... 4-29

ES UNLINK Command ..... 4-30

Command Summary ..... 4-32

# Contents

## Appendices

**Appendix A—Glossary** ..... A-1

**Appendix B—The LOGIN Batch File** ..... B-1

Diskette Drives ..... B-1

Batch File Description ..... B-1

The LOGIN Batch File ..... B-2

**Appendix C—Using Purchased Software** ..... C-1

**Appendix D—Semaphores** ..... D-1

Overview ..... D-1

Semaphore Operations ..... D-2

Semaphore Names ..... D-2

Multiple Server Networks ..... D-3

Semaphores ..... D-4

    Lock/Wait ..... D-4

    Lock/Return ..... D-5

    Unlock ..... D-6

**Appendix E—Upgrading to EtherShare 2.0** ..... E-1

Overview ..... E-1

Setting Drive Switches ..... E-1

Converting EtherShare Volumes for use with EtherShare 2.0 ..... E-2

    The Convert Batch File ..... E-2

**Appendix F—Error Messages** ..... F-1

## List of Figures

### Section 1

IBM PCs Sharing the Disk on a Server ..... 1-1

## List of Tables

### Section 2

The Relationship between Passwords and Volume Access ..... 2-2

# SECTION 1

## Introduction

---

### Overview

EtherShare lets you and other IBM Personal Computer users store information on a shared, hard disk. EtherShare divides this disk into volumes which are similar to the diskettes you use with your IBM Personal Computer. Using EtherShare commands, you create these volumes and link them to a drive specifier on your own computer. From this point on, you can use these volumes with DOS or application programs just as you normally would use diskettes or a fixed disk drive.

EtherShare gives you the benefits of a hard disk and more. By using the EtherShare disk rather than diskettes, you get faster loading of programs, quicker file access and improved reliability. In addition, storing files on a shared disk is more efficient. Programs and data can be designated as public so that one copy can be shared by many users thereby saving disk space. Private data bases can also be shared using passwords to control their use.

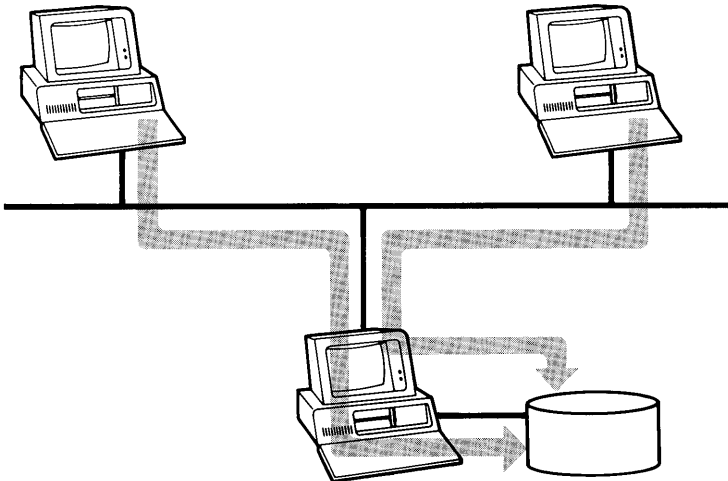


Figure 1-1 IBM PC's Sharing the Disk on a Server



# Introduction

EtherShare is a network service which allows IBM PC's on an Ethernet network to share a hard disk drive. The software controls the disk and responds to requests from PCs for access to volumes on the hard disk. Additional software can be added to provide more services to the network. For example, EtherPrint allows all network users to share printers connected to the network server, and EtherMail provides electronic mail.

EtherShare commands which run on each IBM Personal Computer connected to the Ethernet network are used to access the EtherShare disk. The hard disk may be the fixed disk on an IBM PC, or it may be a disk attached to a 3Com Network Server. These commands are described in this manual. See the EtherShare Administrator's Guide for a description of the server installation and all administrative functions.

## Functions

There are fifteen EtherShare commands which let you create and maintain EtherShare volumes and users from your IBM Personal Computer. Once your name has been added to EtherShare, you can use any of the commands. They let you:

- Log in and out of the EtherShare Server
- Create, modify, and delete EtherShare volumes
- Link to EtherShare volumes
- Create, modify and delete EtherShare users
- List a directory of users or volumes

The EtherShare commands are easy to use. You can select a command from a menu of command choices or enter your selection by typing the command name directly. EtherShare provides a HELP facility which describes each of the commands. This information is always available when you use EtherShare.

## Using this Manual

This manual is arranged in four sections:

Section 2 describes concepts and terminology used by EtherShare. Read this section for a general understanding before you begin.

Section 3 is designed to show you how to use EtherShare. Specific examples for creating volumes, establishing links and using DOS commands and application programs are described. Use the examples as models to adapt EtherShare to your current applications.

Section 4 describes each command and all of its parameters. Once you have gone through Section 2 you can use the reference section to answer questions about your specific application. A command summary is also included.

There are six appendices.

Appendix A is a glossary.

Appendix B describes the LOGIN batch file provided with the EtherShare software.

Appendix C lists other purchased software programs which can be used with EtherShare.

Appendix D explains the semaphore operations used with shared access EtherShare volumes.

Appendix E explains how to upgrade from EtherShare version 1.0 (used with DOS 1.0 or DOS 1.1) to EtherShare version 2.0 (used with DOS 2.0).

Appendix F lists all error messages.



## SECTION 2

# Concepts and Terminology

---

## Overview

EtherShare incorporates several concepts that you should understand before you begin creating and linking volumes. These concepts include logging in to a server, creating and using volumes on a shared disk and controlling volume access.

Read this section for an introduction to the concepts and a definition of the terms associated with them. You will see how to use them in the Using EtherShare section of this manual.

## Network Server

A computer on the network which manages resources such as disks and printers. It can be expanded with the addition of software to provide other network services such as electronic mail.

## Logging In

In order to use EtherShare, you must log in. Use the ES LOGIN command and the unique user name created for you. You may assign a password to your user name. This password is required each time you log in, thereby protecting your programs and data files from being read or changed by other users.

## EtherShare Volumes

EtherShare divides the server's disk drive into volumes that you can make any size from 64KB to 32MB. These volumes function like the diskettes you use with your IBM Personal Computer. After you have logged in to EtherShare, you link an EtherShare volume to a drive specifier on your computer. An IBM PC which has one or two diskette drives uses drive specifiers A: and B: to refer to the diskette drives, so you can use C:, D:, E:, and F: to link to EtherShare volumes. On a PC that has a fixed disk drive, C: is used for the disk, so you use D:, E:, F:, and G: for EtherShare volumes. If you have a second fixed disk, D: refers to that disk; therefore, EtherShare volumes are linked to the next four available drive id's, that is E:, F:, G:, and H:. Linking to a volume simulates inserting a diskette into the drive and closing the door.

A new EtherShare volume can be created by any user. When a new volume is created, space is allocated from the unused portion of the disk to the user requesting the volume. When you create a volume you name it, and if you wish, assign a password. In this manual, the creator of a volume is also called the owner. Volume size is limited by the available disk space on your server.

# Concepts and Terminology

## Volume Access

Access to an EtherShare volume is determined by its access type. This is either public, private or shared. Private volumes have exclusive read-write access. Only one user can access (be linked to) the volume at a time, and information can be written to the volume and read from it. Public volumes have shared read only access. Several users can access the volume at the same time, but information can only be read from the volume. A volume's owner, however, has a special capability. The owner of a public volume can write or update that volume, even when other users are linked to it. Shared volumes are similar to private volumes with one important difference. Multiple users can read from them and write to them at the same time.

When a volume is created, it is automatically given private access. After files have been written to the volume, you can change the access to public or shared. Public access is especially useful for volumes containing program or data files which many network users need. Once the access has been changed to public, the owner of the volume is the only user who can write to the volume.

Shared volumes allow many users to link and access a volume at the same time. For this reason, they should only be used with semaphores (locks) which can be used to control the access so that simultaneous changes to a file do not occur. Shared volume access should always be managed using the semaphores. Failure to do so could result in lost data and damaged disk directories.

## Volume Passwords

Passwords can be assigned to all volumes when they are created. While passwords are optional, one must be assigned to a private or a shared volume you want to share with other users.

Any user who wants to use any volume that has a password must supply it, unless that user is the volume's owner. A public volume without a password is unrestricted and may be used by anyone. A private or a shared volume without a password may be used only by its owner. Table 2-1 shows the relationship between volume access type and passwords.

<b>Volume type</b>	<b>Password Assigned</b>	<b>No Password Assigned</b>
<b>Private Volume</b>		
<ul style="list-style-type: none"><li>▪ Read-write</li><li>▪ One user at a time</li></ul>	All users (except the owner) must supply the assigned password	Only the volume owner can access the volume
<b>Public Volume</b>		
<ul style="list-style-type: none"><li>▪ Read only (except the owner)</li><li>▪ Multiple users at the same time</li></ul>	All users (except the owner) must supply the assigned password	Anyone can access the volume
<b>Shared Volume</b>		
<ul style="list-style-type: none"><li>▪ Read-write</li><li>▪ Multiple users at the same time</li></ul>	All users (except the owner) must supply the assigned password	Only the volume owner can access the volume

Table 2-1 The Relationship Between Passwords and Volume Access

## Batch Files

Your EtherSeries/DOS Diskette includes one batch file. A batch file contains a group of EtherShare commands which are commonly performed together. The batch file you are given, the LOGIN batch file, logs you in to a shared system volume and establishes a link to a shared printer.

Use the LOGIN batch file just as you would an EtherShare command by typing the batch file name and any parameters at the DOS prompt. Once the batch file name is entered, the commands are performed in the order they are given in the batch file. In this way, the LOGIN batch file provides a short cut to performing several EtherShare functions associated with logging in.

An example using this batch file is given in Section 2, and a complete listing is found in Appendix B of this manual.

# Concepts and Terminology

## Multiple Servers

There can be more than one server in an Ethernet network. For example, each department such as Sales, Marketing and Administration might have its own server. Each server has its own list of users who can log. You can log in to any server from any IBM Personal Computer on the network; you are not limited to a particular PC. You can also access any volume on any server, provided you supply the password if one is assigned.

## Server Names

Each server has a unique name. This name is established when the server is registered on the network. You can display a list of all servers with the EtherShare command `ES SDIR`.

## SYS.SYS2 Volume

When a network server is installed and registered on the network, a user is automatically created which has the same name as the server. For example, if the server's name is FINANCE, there is a user named FINANCE on the server. This is the login name that you use to create new users on a new server.

On every server, the user name SYS is a specially defined pseudonym. It always refers to that user with the same name as the server. After logging in to the server in the above example, using SYS is the same as using FINANCE when identifying one of FINANCE's volumes. If FINANCE.DATA is the full name for a volume called DATA which belongs to user FINANCE, you could also use SYS.DATA to identify the same volume.

Each EtherShare server has been configured with a volume named SYS2. It is owned by that user who has the same name as the server so it can be referenced by other users on that server as SYS.SYS2. This volume is a public volume. It contains DOS 2.0, the EtherSeries software including all batch files and any other program files which many network users need. For example, EtherMail is stored on this volume. You can log in and link to the SYS.SYS2 volume on your server in order to use EtherSeries/DOS from the shared disk rather than your computer's diskette.

## Cross Server Links

It is possible to link to a volume that is on another server. This is useful when a single volume is chosen to contain a master program or data file to be used by all PCs on the network. If you have multiple servers, one of them may be selected to keep any network-wide data volumes. For example, EtherMail distribution lists may be kept on one server in the volume FINANCE.DIST, yet accessed by all network users.

## SECTION 3

# Using EtherShare

---

## Overview

EtherShare lets you create and use volumes which are stored on a shared, hard disk on the server. EtherShare divides the disk into volumes which are similar to the diskettes you use with your IBM Personal Computer.

In order to use EtherShare volumes, you must first create and format them. Once this has been done, you use the EtherShare commands to link one of your drive specifiers (C:, D:, E:, or F: on an IBM PC with two diskette drives, and D:, E:, F:, and G: on a PC that also has a fixed disk) to the volume you want to use.

After linking, you use the volume as if it was a diskette inserted into a drive on your Personal Computer. It responds to all the DOS commands and works with your programs with only one major difference. Since it is a hard disk and is accessed through a fast network, it responds much more quickly than a diskette.

The examples are divided into four groups: Getting Started, EtherShare Applications, Managing Volumes and Users, and Using Batch Files. The Getting Started examples describe basic functions which you must perform before you can use EtherShare and EtherShare volumes. This includes things like logging in to EtherShare, linking and unlinking volumes and logging out. The EtherShare application examples explain how EtherShare volumes can be used with other application software such as the VisiCalc program. The third section shows how EtherShare commands manage EtherShare volumes and users. The LOGIN batch file is described in the last section.

The examples show how to perform specific operations. EtherShare commands and prompts are given, along with the responses you might enter. You should adapt these examples for your particular applications.



# Using EtherShare

## Getting Started

### Logging In

You must log in to EtherShare before you can use any of the EtherShare commands. You log in with a user name which has been created with the ES UCREATE command. If you do not have a user name, you can ask someone to create one for you.

A> **ES LOGIN ?** ←

Initiates the ES LOGIN command. By using a question mark (?) you receive all prompts.

Your name? **USER1** ←

The user name needed to log in to EtherShare.

USER1 logged in to SHARE1.

Your EtherShare drives are C: through F:

Confirms that you have been logged in to the EtherShare server named SHARE1, and shows the drive specifiers you may use to link to EtherShare volumes.

Once you have logged in, you can use any of the EtherShare commands.

## Creating an EtherShare Volume

EtherShare divides its disk into volumes. Use the ES CREATE command to create and automatically format an EtherShare volume.

A> <b>ES CREATE ?</b> ←	Initiates the ES CREATE command and prompts for all parameters.
Name? <b>VOLUME1</b> ←	Names the volume you are creating. The name can be up to eight characters long.
Password? (←)	Assigns a password to the volume. It is not displayed when you enter it. Press ← without typing any characters if you don't want to assign a password.
Size? <b>/1</b> ←	Specifies the volume size; /1 is equivalent to a single sided diskette.
<b>VOLUME1</b> created.	Confirms that the volume has been created.
Formatting ...	Indicates the new volume is being formatted.
<b>VOLUME1</b> formatted.	Confirms that the volume has been successfully formatted.

In this example, the logged in user creates a volume, VOLUME1. The volume has no password, and it is single sided. All volumes are created with private access. Private volumes have exclusive read-write access. This means that only one user can link to the volume at a time, and that user can write information to the volume and read information stored there. If the volume has a password assigned to it, any user supplying the password can access the volume. If no password is assigned, only the owner of the volume can access it.

# Using EtherShare

## Linking to a Volume

To use the volume you have created, you must link it to one of your computer's drive specifiers. Linking an EtherShare volume to a drive specifier simulates inserting a diskette into a diskette drive and closing the door. Usually, C:, D:, E:, or F: is used as the drive specifier. You can use C:, D:, E:, or F: on an IBM PC which has two diskette drives only, or D:, E:, F:, or G: on one that also has a fixed disk.

In most cases you'll insert the EtherSeries/DOS diskette in drive A: and link EtherShare volumes to C:, D:, E:, and F:.

- |                             |  |
|-----------------------------|--|
| A> <b>ES LINK ?</b> ←       | Initiates the ES LINK command.   |
| Drive id? <b>E:</b> ←       | The drive specifier to which you want to link an EtherShare volume.                          |
| Volume? <b>VOLUME1</b> ←    | The name of the EtherShare volume you want to link. You can use any volume you have created. |
| <b>VOLUME1</b> linked to E: | EtherShare confirms that the link has been established.                                      |

## Using DOS Commands

One of the first things you might do with a new EtherShare volume would be to copy the files from an existing diskette to it. Use the standard DOS COPY command to perform this function. Insert the source diskette which contains the files to be copied into drive A:, and enter the COPY command.

A> **COPY A:\*. \* E:** ← ↵ Copies all the files from the source drive A:, to the destination drive, E:.

Some other uses of DOS commands with EtherShare volumes are:

A> **COPY A:SALES E:** ← ↵ Copies the file SALES from A: to the EtherShare volume linked to E:.

A> **DIR E:** ← ↵ Lists all the files stored on the EtherShare volume linked to drive specifier E:.

## Ending a Link

Use the ES UNLINK command to end the link between an EtherShare volume and a drive specifier.

A> **ES UNLINK ?** ← ↵ Initiates the ES UNLINK command.

Drive id or volume? **E:** ← ↵ The drive or the volume name you want to unlink.

VOLUME1 unlinked from E: Confirms that the volume has been unlinked.

Since you can link only one volume at a time to a drive specifier, you must unlink the volume before you can link another.

# Using EtherShare

## Logging Out

You end your connection to EtherShare with the ES LOGOUT command. Logging out ends all existing links you have established with the ES LINK command.

A> **ES LOGOUT** ← Initiates the ES LOGOUT command.

USER1 logged out. Confirms the log out.

Rebooting your computer by pressing **Ctrl-Alt-Del** or turning the power off and on again will also log you out and end your links.

## EtherShare Applications

### Linking to Other Users' Volumes

With EtherShare you can link to any other users' volumes.

A> **ES LINK ?** ← Initiates the ES LINK command.

Drive id? **E:** ← The drive specifier to which you want to link the EtherShare volume.

Volume? **USER2.VOLUME2** ← The volume owner's name, USER2, and the volume name, VOLUME2. Separate the two with a period (.).

Password? (**MYPASS**) ← If the volume has a password, you are prompted for it.

USER2.VOLUME2 linked to E: Confirms the link.

For you to access another user's private or shared volume, the volume must have a password, and you must supply it. If the volume does not have a password, only its owner can link to it.

You may access any public volume that doesn't have a password simply by linking to it. If it has a password, you must know it in order to complete the link.

## Listing Volume Names

You can list the volumes linked to a drive specifier or list all EtherShare volumes with the ES DIR command.

A> **ES DIR /L** ←

Lists all your linked volumes and their associated drive specifiers.

A> **ES DIR** ←

Lists all EtherShare volumes you have created.

A> **ES DIR \*.\*** ←

Lists all EtherShare volumes present on all servers. DOS wild card characters (\* and ?) can be used to display groups of volumes.

## Using Purchased Software

EtherShare makes it possible to keep all of your data and information files for application software like WordStar or VisiCalc on EtherShare volumes.

Once the EtherShare links have been established, you can run the application as you normally would. In general you'll want to reserve diskette drive A: in your IBM Personal Computer for the application software.

If the software is self-loading, that is, you normally boot your computer to run the program, you should run the AUTOEXEC.BAT file directly instead. If you boot your computer, you are no longer logged in to EtherShare and you lose any existing links you have established.

# Using EtherShare

## Using WordStar

You can store your WordStar documents in an EtherShare volume. Log in to EtherShare and link to the volume. (Remember, you must first create the volume, link and format it before it can be used to store data.)

- |                         |  |
|-------------------------|--|
| A> <b>ES LINK ?</b> ←   | Initiates the ES LINK command.                                       |
| Drive id? <b>F:</b> ←   | The drive specifier to which you want to link the EtherShare volume. |
| Volume? <b>WSDATA</b> ← | The name of the volume which contains your WordStar documents.       |
| WSDATA linked to F:     | EtherShare confirms the link.  |

Once the EtherShare volume WSDATA has been linked, insert the WordStar diskette into drive A: and run the program.

- |                |                                      |
|----------------|--------------------------------------|
| A> <b>WS</b> ← | Loads and runs the WordStar program. |
|----------------|--------------------------------------|

To store and retrieve documents from the EtherShare volume, use the WordStar Preliminary Command "L" to change the logged disk drive to F: and show the directory of your EtherShare volume.

### Using VisiCalc

Normally you would have to boot or reset your IBM Personal Computer to run a self-loading application program such as VisiCalc. When you do this, all existing links to printers and EtherShare volumes are lost. You can avoid this by simply running the AUTOEXEC.BAT file directly without booting your PC.

Assume you want to begin using the VisiCalc program, which is self-loading, without losing existing links you have to EtherShare volumes. First you need to establish all links to any EtherShare volumes you may want to use with the VisiCalc program.

- |                           |   |
|---------------------------|---|
| A> <b>ES LINK ?</b> ←     | Initiates the ES LINK command.                            |
| Drive id? <b>E:</b> ←     | The drive specifier to which you want to link the volume. |
| Volume? <b>VISIDATA</b> ← | The name of the volume containing your VisiCalc reports.  |

Now you can load the VisiCalc program. Place the VisiCalc diskette in drive A:.

- |                      |                            |
|----------------------|----------------------------|
| A> <b>AUTOEXEC</b> ← | Runs the VisiCalc program. |
|----------------------|----------------------------|



## Using EtherShare

The VisiCalc program is loaded and the blank worksheet is displayed on the screen.

Now you can use it just as you normally would to create spreadsheet reports. After you have created the VisiCalc report, you can save it on the EtherShare volume by giving the drive specifier when you identify the storage file.

**/S S**

Initiates the SAVE option of the VisiCalc STORAGE command.

Storage: File for Saving  
**E:REPORT1** ←

Saves REPORT1 on the volume linked to E:.

You load VisiCalc reports from an EtherShare volume the same way:

**/S L**

Initiates the LOAD option of the VisiCalc STORAGE command.

Storage: File to Load  
**E:REPORT1** ←

Loads REPORT1 which is stored on the volume linked to E:.

## Managing EtherShare Users and Volumes

### Modifying a Volume

You can use the ES MODIFY command to change the name, access and password of any volume you have created. You cannot change the size of the volume.

A> <b>ES MODIFY ?</b> ←	Initiates the ES MODIFY command.
Volume? <b>VOLUME1</b> ←	The name of the EtherShare volume you want to modify.
New name? <b>VOLUME2</b> ←	The new name if you want to change it. Press ← to keep the existing name.
New password? ( <b>NEWPASS</b> ) ←	The new password is entered enclosed in parentheses. Press ← if you want to keep the existing password.
New access? <b>/PUB</b> ←	Changes the volume access to public. All volumes are created with private access (/PRIV).
<b>VOLUME1</b> modified.	EtherShare confirms that the volume has been modified.

You cannot modify a volume while it is linked to a drive specifier.

### Erasing a Volume

When you no longer need a volume, you should delete it from the EtherShare disk. Once it is deleted, the volume and any files it contains are permanently removed from the EtherShare disk.

A> <b>ES ERASE ?</b> ←	Initiates the ES ERASE command.
Volume? <b>VOLUME1</b> ←	The name of the volume you want to delete.
Are you sure (Y/N)? <b>Y</b> ←	EtherShare checks to be sure you want to remove the volume.
<b>VOLUME1</b> deleted.	EtherShare confirms that VOLUME1 has been erased.

# Using EtherShare

## Creating a New User Name

Anyone with a user name which allows them to log in to EtherShare can create other users on the same EtherShare server.

A> **ES UCREATE** ← Initiates the ES UCREATE command.

Name? **NEWUSER** ← The new user name.

Checking for NEWUSER on server SHARE1...

EtherShare checks that there are no other users with the name NEWUSER on SHARE1 or any other network server.

NEWUSER added.

EtherShare confirms that NEWUSER is now an EtherShare user name. The user with this name can now log in.

## Modifying a User Name

You can add a password to your user name or change that password with the ES UMODIFY command.

A> **ES UMODIFY ?** ← Initiates the ES UMODIFY command.

New password? **(FORGET)** ←

The new password is entered enclosed in parentheses. It is not displayed as it is typed. If you want to remove a password, enter empty parentheses ( ).

NEWUSER modified.

EtherShare confirms that the password has been changed.

## Erasing a User Name

You can remove a user from EtherShare with the ES UERASE command. You cannot remove a user name that owns EtherShare volumes; all volumes belonging to a user must be deleted before that name can be removed.

- |                                |   |
|--------------------------------|---|
| A> <b>ES UERASE ?</b> ←        | Initiates the ES UERASE command.                  |
| User? <b>ESUSER</b> ←          | The user name you want to remove from EtherShare. |
| Are you sure (Y/N)? <b>Y</b> ← | Confirms that the deletion is to be made.         |
| ESUSER deleted.                | Confirms that the user name has been deleted.     |

## Displaying the User Directory

You can display a list of all or some of the EtherShare users with the ES UDIR command. Users who are currently logged in are labeled "logged in". An arrow points to your user name in the list.

- |                        |  |
|------------------------|--|
| A> <b>ES UDIR</b> ←    | Lists all EtherShare users.                  |
| A> <b>ES UDIR M*</b> ← | Lists all users with names beginning with M. |

The DOS wild card characters (\* and ?) can be used to list groups of users as the example shows.

## Using EtherShare

### Using Batch Files

In addition to the EtherShare commands, your EtherShare/DOS Diskette contains a batch file, LOGIN. This batch file logs you in to EtherShare, links you to a shared system volume and links to a shared printer.

A batch file includes a group of EtherSeries commands which are commonly used together. When the batch file is used, the commands are performed in the order they appear. This happens automatically when you give the batch file name and its associated parameters. If you want to cancel a batch file once it has started, press the **Ctrl** and **Break** keys. DOS prompts you to confirm the request.

If any of the ES commands fails, the batch file automatically stops.

The LOGIN batch file was copied to your EtherSeries/DOS Diskette (or fixed disk) during software installation. Using the LOGIN batch file is explained here.

### The LOGIN Batch File

The LOGIN batch file contains the EtherSeries commands to log in a user, link SYS.SYS2 (the system volume containing DOS 2.0 and the EtherSeries software) to drive specifier D: make that the default drive and link to a printer on this server.

Use the batch file as you would any EtherShare or DOS command. Type the batch file name followed by any parameters. In the case of LOGIN, you give your user name.

A> **LOGIN CAROLR** ← Performs all commands found in the batch file.

The LOGIN batch file assumes you have purchased the EtherPrint software and have a printer connected to your server. If you do not have the software or a printer, you can edit the batch file to remove the command which links to the printer.

## SECTION 4

# EtherShare Commands

---

## Overview

Commands are your way of communicating with EtherShare. You can use EtherShare commands to:

- Log in and log out of EtherShare
- Create, modify and delete EtherShare volumes
- Link EtherShare volumes to your IBM Personal Computer
- Create, modify and delete EtherShare users
- List all EtherShare users and volumes

## Selecting Commands

You can select commands by choosing an option from a menu or by entering a command name at the A> prompt.

Type ES to display the version number and a menu of EtherShare commands.

```
A> ES ←
```

```
EtherShare n.n    © Copyright 3Com Corp 1982, 1983
```

```
EtherShare Commands:
```

- 1 - Login to the server. (LOGIN)
- 2 - Logout from the server. (LOGOUT)
- 3 - Link to an EtherShare volume. (LINK)
- 4 - Unlink from a volume. (UNLINK)
- 5 - List all volumes. (DIR)
- 6 - Create and format a new volume. (CREATE)
- 7 - Modify an existing volume. (MOD)
- 8 - Delete an existing volume. (DEL)
- 9 - List all users. (UDIR)
- 10 - Create a new user. (UCREATE)
- 11 - Delete an existing user. (UDEL)
- 12 - Modify your user password. (UMOD)
- 13 - List all servers. (SDIR)
- 14 - Receive help. (HELP)

```
Selection?
```

# EtherShare Commands

You can select a command by typing its number and pressing **←**. You are then prompted for the command parameters one at a time. Displaying this list of commands is useful when you first use EtherShare.

You can also select a command by entering the command name and parameters on a single line. Command names are made up of two words, ES followed by the name of a specific function such as LOGIN. Use both words when you enter a command name directly. For example:

```
A> ES LOGIN ←
```

## Command Format

All commands consist of the command itself and some parameters which provide additional information about the command. Each parameter must be separated by at least one space as shown in the examples in this section.

Some parameters are required and some are optional. In the command descriptions that follow, optional parameters are shown in square brackets.

Some optional parameters have default values that are assigned if you don't supply one. The description of each command gives the default values for optional parameters.

## Prompted and Unprompted Form

You can enter a command in either prompted or unprompted form.

### Prompted Form

The prompted form allows you to enter the command name without any parameters. To use the prompted form, type the EtherShare command followed by a space and a question mark (?). You are then prompted for the first parameter. You enter this parameter and are prompted for the second parameter, and so forth. For example:

```
A> ES CREATE ? ←  
Name? VOLUME1 ←  
Password? (XYZZY) ←  
Size? /2 ←
```

## Unprompted Form

The unprompted form allows you to enter the command and its parameters on one line. For example:

```
A> ES CREATE VOLUME1 (XYZZY) /2 ←
```

You will probably use the unprompted form once you are familiar with the commands. If you enter some, but not all of the required parameters on the command line, you are prompted for the required parameters you did not provide.

In the examples of the commands that follow, both the prompted and unprompted forms are given.

## Multiple Commands on One Line

You can give multiple EtherShare commands on one line by separating each command with a semicolon (;). For example,

```
A> ES LOGIN LYNNW; LINK D: SYS.SYS2 ←
```

## The /NP Parameter

/NP is a special parameter which can be used with any EtherShare command. This parameter (short for No Prompt) suppresses EtherShare prompts such as "Strike any key when ready" or "Are you sure (Y/N)?". It is used only with the unprompted form of a command and is useful when commands are executed from a batch file.

This parameter can be placed anywhere within the other command parameters and must be entered as /NP, including the slash (/) which is required.

## Cancelling Commands

If you initiate a command but do not want to complete it, press the **Ctrl** and **Break** keys simultaneously. This redisplayes the DOS prompt. With the prompted form, this can be done at any time before the last response has been entered; with the unprompted form it should be done before the command is entered with the ← key.



# EtherShare Commands

## Format Notation

The following notation is used to indicate the format of commands.

**CAPITAL LETTERS:** denote a keyword. Keywords must be entered exactly as shown, although you can use lower case if you prefer.

*Italics:* you must supply appropriate information for parameters shown in italics. For example, you would supply a specific volume name for the *volname* parameter.

[Square Brackets]: denote an optional parameter which you can omit. If you use the parameter, you do not type square brackets around it.

Slash (/) and Parentheses ( ): must be included in a parameter where shown.

## ES CREATE Command

Creates and formats a new EtherShare volume.

### Format

```
ES CREATE volname [(password)] [size]
```

### Parameters

<i>volname</i>	The name of the volume. The name can be up to eight characters long. Each volume you create must have its own unique name; however, different users may have volumes with the same name.
( <i>password</i> )	A word assigned to a volume to control its use. Anyone other than the owner of the volume must supply the password to use the volume. You must assign a password to private (/PRIV) and shared volumes (/SHAR) if you want to allow other users to be able to access them.
<i>size</i>	The volume size from 64 kilobytes to 32 megabytes.  <i>/1</i> Creates a single sided (/160KB) volume.  <i>/2</i> Creates a double sided (/320KB) volume.  <i>/numKB</i> The number of kilobytes, from 64 to 32000.  <i>/numMB</i> The number of megabytes, from 1 to 32.  If you do not indicate a size, <i>/1</i> is used. The maximum volume size depends on the current amount of space available on the server.

# ES CREATE Command

## Remarks

The ES CREATE command creates a new EtherShare volume. Each volume uses a portion of the server's disk.

Just like diskettes, volumes must be formatted. This happens automatically when you use the ES CREATE command.

All volumes are created with private access. Private access (/PRIV) is exclusive, read-write access. This means only one user can be linked to the volume at a time. The user can write information to the volume and can read information stored on it.

After you have formatted the volume and written information to it, you can change the access to public access (/PUB) or shared access (/SHAR) with the ES MOD command. Public access is shared, read only access for all users except the owner, who can write and read. Many users can read the volume at the same time; however, only the owner can change the information stored there. Public access is used mainly for program or data files which many network users need. Shared access allows multi-user read-write access. Many users can read from and write to a volume at the same time. This type of access is used for volumes which are changed by more than one user. Changes to data on shared volumes should always be coordinated with semaphores. More than one computer reading and writing the same volume at the same time can result in lost data or damaged disk directories. Programs that run concurrently and access the same volume should always set and check the semaphores to manage the simultaneous reads and writes.

On all volumes except those designated as /1, /2, /160KB, /180KB, /320KB, or /360KB the available disk space will be 16 kilobytes less than requested number to accommodate the disk directory which requires 16 kilobytes of space. These disk directories may contain up to 512 entries.

On volumes designated as /1, /2, /160KB, /180KB, /320KB, or /360KB the full 160, 180, 320, or 360 kilobytes are available. The number of directory entries is specified by DOS, 64 for a 160 kilobyte volume (a single-sided diskette) and 112 for a 320 kilobyte volume (a double-sided diskette).

## Examples

### Prompted

```
A> ES CREATE ? ←  
Name? REPORTS ←  
Password? (SECRET) ←  
Size? /200KB ←  
REPORTS created.  
Formatting ...  
REPORTS formatted.
```

Creates a volume called REPORTS. The volume has a password defined. Notice that passwords are not displayed when they are entered. This volume is 200 kilobytes in size (184 Kilobytes available for files), and has been formatted.

### Unprompted

```
A> ES CREATE REGION1 ←
```

Creates a volume called REGION1. Since no parameters are given, the volume takes on default values, single sided (/160 KB) with no password.

```
A> ES CREATE MEMOS (QUIET) ←
```

Creates a single sided volume called MEMOS. This volume has a password, QUIET. The password is entered enclosed in parentheses.

# ES DIR Command

## ES DIR Command

Lists EtherShare volumes.

### Format

```
ES DIR [[username.]volname] [/L] [/P] [/W]
```

### Parameters

<i>[username.]volname</i>	The name of the volume. If you do not own the volume, you must supply the owner's name as the <i>username</i> parameter. Use a period (.) to separate the user name from the volume name. If you do not specify a volume name, all of your volumes will be listed.
<i>/L</i>	Displays the volumes that are currently linked to your computer and the drive specifiers to which they are linked.
<i>/P</i>	Pauses the listing after a full screen has been displayed.
<i>/W</i>	Produces a wide listing. Several volumes are listed on one line. If you do not specify <i>/W</i> , one volume is listed on each line.

### Remarks

The listing shows which volumes are currently in use by you, or other EtherShare users on every server.

The DOS wild card characters (\* and ?) can be used to list specific groups of volumes.

## Examples

### Prompted

```
A> ES DIR ? ←
Volume? VISIDATA ←
VISIDATA          PRIV      160KB
```

Displays information about the volume requested.

### Unprompted

```
A> ES DIR /L ←
C: not in use
D: TESTPROG      PRIV      160KB
E: REPORTS       PUB       120KB
F: not in use
```

The /L parameter lists all available drive specifiers and all currently linked volumes.

```
A> ES DIR *.* ←

Server ADMIN:
ADMIN.SYS2      PUB      320KB   in use
BILLK.INBOX     PRIV      64KB
CAROLR.DATA     SHAR     620KB   in use
GREGS.SALES     PRIV     120KB
LYNNW.MEMOS     PRIV     320KB
MARKT.DATAMGR   PUB     1250KB

Server MARKET:
JEFFM.INBOX     PRIV     100KB
JOANL.VISIDATA  PRIV     160KB   in use
STEVEP.MEMOS    PRIV     160KB   in use
STEVEP.REPORTS  PRIV     360KB
```

Lists all EtherShare volumes on all network servers.

Use the DOS wild card characters (\*and?) to match any user name and volume name.

```
A> ES DIR STEVEP.*
STEVEP.MEMOS    PRIV     160KB   in use
STEVEP.REPORTS  PRIV     360KB
```

Lists all volumes owned by user STEVEP.

## ES ERASE and ES DEL Commands

### ES ERASE and ES DEL Commands

Permanently erases or deletes an EtherShare volume.

#### Format

```
ES ERASE volname
```

```
ES DEL volname
```

#### Parameters

*volname*

The name of the EtherShare volume to be deleted.

#### Remarks

ES ERASE deletes EtherShare volumes. Once you delete a volume it is permanently erased from the EtherShare disk. You cannot recover the information. Therefore, several checks are provided to help protect you from errors.

- Only the owner of a volume can delete it.
- A volume cannot be erased while it is linked to a drive specifier.
- Only one volume can be deleted at a time.
- You are asked to confirm a deletion.

When a volume is deleted, the disk space becomes available for new volumes.

#### Examples

##### Prompted

```
A> ES DEL ? ←  
Volume? LETTERS ←  
Are you sure (Y/N)? Y ←  
LETTERS deleted.
```

The volume LETTERS has been erased.

##### Unprompted

```
A> ES ERASE SALES ←  
Are you sure (Y/N)? N ←  
***Cancelled.
```

## ES HELP Command

Gives information about EtherShare commands.

### Format

```
ES HELP [commandname]
```

### Parameter

*commandname*

The EtherShare command about which you want information. If you do not give a specific command name, a list of all EtherShare commands and a brief description of their function is displayed.

### Remarks

The HELP command is organized in two levels. The first level displays a list of the EtherShare commands. The second level gives format and parameter information about individual commands. You can go directly to the second level by giving the command name.

### Examples

```
A> ES HELP ←
```

Displays a list of all EtherShare commands and a brief description of their use.

```
A> ES HELP LINK ←
```

Displays the LINK command format and a short description of its function.



# ES LINK Command

## ES LINK Command

Creates a link between an IBM Personal Computer drive specifier and an EtherShare volume.

### Format

```
ES LINK drive [username.]volname [(password)]
```

### Parameters

<i>drive</i>	Specifies the drive to which you want to link. You can link to any of four drive specifiers depending on the configuration of your IBM PC. It is usually C:, D:, E: or F:.
[ <i>username.</i> ] <i>volname</i>	The name of the EtherShare volume to which you want to link. The <i>username</i> parameter is the owner's name. The owner's name is required if the volume does not belong to you. Separate the username and the volume name with a period (.).
( <i>password</i> )	The password assigned to the EtherShare volume. A public volume (/PUB) created without a password may be linked by anyone. A private volume (/PRIV) or a shared volume (/SHAR) without a password may be linked only by its owner. The password must be given to use any volume that has one.

### Remarks

You must establish a link between a DOS drive specifier on your computer and an EtherShare volume before you can use files stored on the volume.

You can link an EtherShare volume to any of four drive specifiers. If you have a diskette-only system, you can link to drives C:, D:, E:, or F:. If you have a PC with a fixed disk, you can link to drives D:, E:, F:, or G:.

Only one volume can be linked to a drive specifier at a time. If you attempt to link a second volume before unlinking the first, you will be asked if it is OK to unlink the first volume. An affirmative answer will complete the command, a negative answer will abort it.

You cannot link a volume to a drive specifier which has been associated with another drive specifier using the DOS ASSIGN Command. You can, however, use the ASSIGN Command following a link.

You can link to any EtherShare volume on any server. If you did not create the volume, you must give the owner's name in addition to the volume name. You must also supply the password for any volumes you do not own, unless the volume has public access and does not have a password. A private or shared volume without a password can be accessed only by its owner.

A public volume is read only for all users except the owner; they cannot write to it. If you own a public volume, you have write access; you can add, delete, or change files at any time even when other users are linked to the volume for reading. If you are logged in at two computers and link to your public volume from both computers, only the first link has write access. The second has read only access. This ensures that no two users can simultaneously update the same file on a public volume and possibly destroy data on the disk. Access to shared volumes is controlled by setting and checking signals within programs called semaphores. These signals coordinate the access to a volume so that data is changed in an orderly way without risk of loss.

If you reset your computer by pressing **Ctrl-Alt-Del**, you are automatically logged out and lose all links to EtherShare volumes.

## Examples

### Prompted

```
A> ES LINK ? ←  
Drive id? E: ←  
Volume? REPORTS ←  
REPORTS linked to E:
```

Links the EtherShare volume REPORTS to drive specifier E:.

```
A> ES LINK ? ←  
Drive id? F: ←  
Volume? CAROLR.SALES ←  
Password? (CRP) ←  
CAROLR.SALES linked to F:
```

## ES LINK Command

Links the volume SALES created by another user, CAROLR, to drive specifier F:. This volume has a password which you must supply.

### Unprompted

```
A> ES LINK F: LYNNW.NEWS ←  
LYNNW.NEWS linked to F:
```

This example links an EtherShare volume, NEWS, owned by LYNNW, to drive specifier F:. This is a public volume with no password.

```
A> ES LINK E: JEFFM.TEST ←  
Password? (MYPASS) ←  
JEFFM.TEST is linked to E:
```

This links the volume TEST created by JEFFM to drive specifier E:. You are prompted for the password.

```
A> ES LINK E: BILLK.LETTERS ←  
Password? (XYZ) ←  
***JEFFM.TEST is linked to E: ... OK to unlink (Y/N)? Y ←  
BILLK.LETTERS linked to E:
```

Only one volume can be linked to a drive specifier at a time. Since the volume JEFFM.TEST was already linked to E: when the command was entered, it must be unlinked first. This is done automatically by typing Y after the message "OK to unlink?". The volume BILLK.LETTERS is then linked to E:.

```
A> ES LINK E: BILLK.LETTERS /NP ←  
Password? (XYZ) ←  
BILLK.LETTERS Linked to E:
```

Links the volume BILLK.LETTERS to drive specifier E: just as the previous example does. The /NP parameter, however, bypasses the confirmation prompts normally supplied.

## ES LOGIN Command

Establishes a connection with EtherShare.

### Format

```
ES LOGIN username [(password)]
```

### Parameters

<i>username</i>	The name which identifies you as an EtherShare user. This name is established with the ES UCREATE command.
( <i>password</i> )	A word which may be assigned to user names with the ES UMODIFY command. Passwords must be enclosed in parentheses when they are used.

### Remarks

The ES LOGIN command establishes a connection between your IBM Personal Computer and the server which has your username in its directory of users. You may log in from any IBM PC in the network, you are not restricted to using a particular computer.

You must log in before you can use any other ES commands except the ES HELP command.

Passwords prevent other users from gaining access to your EtherShare volumes.

Logging in automatically logs out any current users from the same computer; however, two persons using the same user name at different computers can be logged in at the same time.

If ES LOGIN cannot establish a connection to a server, it asks if you would like to try again. If the /NP parameter is used with ES LOGIN, the software automatically keeps trying. Press **Ctrl-Break** to end this loop.

# ES LOGIN Command

## Examples

### Prompted

```
A> ES LOGIN ? ←  
Name? STEVEP ←  
Password? (QUIET) ←  
STEVEP logged in to SHARE1.  
Your EtherShare drives are C: through F:
```

Gives user STEVEP access to EtherShare server SHARE1. The password is not displayed when it is typed. The log in message tells you that you can link EtherShare volumes to drive specifiers C:, D:, E: and F:.

### Unprompted

```
A> ES LOGIN LYNNW (SECRET) ←  
LYNNW logged in to ALPHA1.  
Your EtherShare drives are D: through G:
```

Logs in LYNNW. The password must be enclosed in parentheses. It is displayed when you use the unprompted form of the command. The log in message tells you that you can link EtherShare volumes to drive specifiers D:, E:, F: and G:.

### ES LOGOUT Command

Ends a connection to EtherShare.

#### Format

```
ES LOGOUT
```

#### Remarks

This command ends your connection to EtherShare established with the ES LOGIN command. It also ends all links to EtherShare volumes established with the ES LINK and EP LINK commands.

Rebooting your computer has the same effect as the ES LOGOUT command.

#### Examples

```
A> ES LOGOUT ←  
BILLK logged out.
```

The current user is logged out. No user name is required.

# ES MODIFY and ES RENAME Commands

## ES MODIFY and ES RENAME Commands

Changes the name, password and/or access of an EtherShare volume.

### Format

```
ES MOD[IFY] volname [newname] [(newpass)] [newaccess]
```

```
ES REN[AME] volname [newname] [(newpass)] [newaccess]
```

### Parameters

<i>volname</i>	The name of the EtherShare volume you want to modify.
<i>newname</i>	The new name you want to give the volume.
( <i>newpass</i> )	The new password you want to give the volume. This password must be enclosed in parentheses. (The end parenthesis is optional.) An empty parentheses ( ) removes an existing password.
<i>newaccess</i>	Volumes are created with private access. Private volumes can be used by only one user a time, and they have read-write access. Once a volume has been created and files have been loaded, you may want to change the access to public or shared.  Enter one of these parameters to change the current access.  /PUB Indicates public access.  /PRIV Indicates private access.  /SHAR Indicates shared access.

# ES MODIFY and ES RENAME Commands

## Remarks

Public access volumes can be linked by many users at once. They have read only access; the owner, however, can also write to the volume. Public volumes often contain program files which all network users need.

Shared volumes have read-write access and may be linked for use by many users at the same time. These volumes usually contain data which is changed by different users. Since several users can access the volume to change data at the same time, access must be synchronized by setting and checking "in use" status flags called semaphores. Programs must use these semaphores in order to prevent simultaneous access which could result in a loss of data.

This command has two forms, ES MODIFY (or ES MOD) and ES RENAME (or ES REN). You can use either form to change the volume name, the password and the access. The size of the volume cannot be changed.

You must be the owner of the volume to use the ES MODIFY or ES RENAME commands.

Volumes cannot be modified while they are linked to a drive specifier.

The ES MODIFY command is used to change the access of volumes from private to public or shared after the volume has been created and files have been loaded.

After a volume has been changed to public, the owner may still write to the volume. In this way, one person may change the files on a volume while others are linked to and using it. The owner of a public volume should use caution when modifying files on such a volume.



## ES MODIFY and ES RENAME Commands

### Examples

#### Prompted

```
A> ES MODIFY ? ←  
Volume? MEMOS ←  
New name? ←  
New password? ←  
New access? /PUB ←  
MEMOS modified.
```

Changes only the access. The name and password do not change. Even though you want to change only the access, EtherShare prompts you for all parameters. Press the ← key to keep the existing one and display the next prompt.

```
A> ES RENAME ? ←  
Volume? REPORTS ←  
New name? REGION1 ←  
New password? ←  
New access? ←  
REPORTS modified.
```

Changes the name of the EtherShare volume from REPORTS to REGION1.

#### Unprompted

```
A> ES MODIFY PROGRAMS /PUB ←  
PROGRAMS modified.
```

Changes the access to public. In general, only volumes which several EtherShare users need should be public.

```
A> ES MOD VOLUME1 ( ) ←  
VOLUME1 modified.
```

Removes the password from VOLUME1.

```
A> ES RENAME VOLUME1 VOL1 ←  
VOLUME1 modified.
```

Changes the name of the volume from VOLUME1 to VOL1.

## ES SDIR Command

Lists the names of all servers on the network.

### Format

```
ES SDIR [servername] [/W] [/P]
```

### Parameters

*servername*

The name assigned to server when it is installed. Each server has a unique name which is assigned using the Register function of the server's ADMIN program. You can use the DOS wild card characters (\* and ?) to list specific groups of servers.

If you do not give a specific server name, the names of all servers are listed.

*/W*

Produces a wide listing. Several servers are listed on one line. If you do not specify */W*, one server is listed on each line.

*/P*

Causes the listing to pause after a full screen has been displayed.

### Remarks

The ES SDIR command lists the names of all servers in an EtherSeries network. You can access EtherShare on any server in a network by having a user name in its directory so that you can log in. User names must be unique on the network; therefore, you need a different user name to log in to EtherShare on each server.

Anyone can access an EtherPrint printer on a server by providing the *servername* parameter in the EP LINK command.

# ES SDIR Command

## Examples

```
A> ES SDIR ←  
SALES  
ADMIN  
MRKT
```

Lists all servers in the network.

## ES UCREATE Command

Adds a new user to EtherShare.

### Format

```
ES UCREATE username
```

### Parameters

*username*

The name which will identify this person as an EtherShare user. The name can be up to eight characters in length. No two users on the network can have the same user name.

### Remarks

Any user can use the ES UCREATE command to add a new user name to EtherShare.

If your Ethernet network has more than one EtherShare server, you must use a name that is unique on all the servers. No two users can have the same user name, even if they are using different servers. When a new name is created, all servers are checked to be sure the name does not duplicate one already on the network before the new name is added.

Once a new name has been added to the directory, the user can log in and use the ES UMOD command to assign a password.

### Examples

#### Prompted

```
A> ES UCREATE ? ←  
Name? CAROLR ←  
Checking for CAROLR on server SHARE1...  
CAROLR added.
```

This example adds the name CAROLR to server, SHARE1.

# ES UCREATE Command

## Unprompted

```
A> ES UCREATE JEFFM ←  
Checking for JEFFM on server SHARE1...  
JEFFM added.
```

This example adds the name JEFFM to server SHARE1. This is the log in name for this user. EtherShare checks to be sure the name is not currently in use before accepting it.

## ES UDIR Command

Lists the names of all EtherShare users on the network.

### Format

```
ES UDIR [[server.]username] [/P] [/W]
```

### Parameters

<i>[server.]username</i>	The name of the user(s) about whom you are requesting information. You can use the DOS wild card characters (* and ?) to identify specific groups of users.  Use the server name parameter to list the users on a specific server or group of servers. If you do not give a server name, all users on the network are listed.
<i>/P</i>	Causes a pause when the directory fills the screen.
<i>/W</i>	Produces a wide listing. Several names are listed on one line. Only the names are listed; no other information is given.

### Remarks

ES UDIR lists EtherShare users. Users who are currently logged in to EtherShare are indicated by the message "logged in". The user requesting the listing is indicated by an → next to the user name.

# ES UDIR Command

## Examples

```
A> ES UDIR ←
```

```
Server MARKET:  
  BILLS  
  BOBP  
  FREDH  
  MARYS      logged in  
  MIKEP      logged in
```

```
Server SALES:  
→ CAROLR    logged in  
  JOHNH  
  NANCYV  
  STEVEP  
  WENDYK    logged in
```

Lists all users on all network servers.

```
A> ES UDIR M* /W ←
```

```
Server ADMIN:  
  *** No Match
```

```
Server FINANCE:  
  MARY  MIKE
```

By using the asterisk (\*) in the username parameter, you are able to list groups of users; for example, those whose names begin with M. Only the name is given on wide lists. If no user names on a server match the requested group, the message "\*\*\*\* No Match" is displayed.

```
A> ES UDIR MARKET.* ←
```

```
Server MARKET:  
  FRED  
  MARYS  
  JOEP      logged in
```

Lists all users on the server named MARKET.

## ES UERASE and ES UDEL Commands

Deletes a user name from EtherShare.

### Format

ES UERASE *username*

ES UDEL *username*

### Parameters

*username*

The name used to identify this person as an EtherShare user. This is the name used to log in to EtherShare.

### Remarks

ES UERASE removes a user name from the EtherShare directory. Once a name has been removed, the user cannot log in to EtherShare to create or link volumes.

Several checks are provided to protect against unintentional deletions.

- A user name cannot be deleted if that user has volumes stored on the EtherShare disk. (Volumes must be deleted first.)
- Only one name can be deleted at a time.
- The message "Are you sure (Y/N)?" is displayed. You must respond "Y" before the deletion is performed.



# ES UERASE and ES UDEL Commands

## Examples

### Prompted

```
A> ES UERASE ? ←  
Name? LYNNW ←  
Are you sure (Y/N)? Y ←  
LYNNW deleted.
```

This example removes the user name LYNNW from the list of EtherShare users. A confirmation is required before the name is deleted.

### Unprompted

```
A> ES UERASE STEVEP ←  
Are you sure (Y/N)? N ←  
*** Cancelled.
```

In this example the delete is cancelled. The name remains in the directory; the user can still log in to EtherShare.

```
A> ES UDEL CAROLR ←  
*** Volumes still exist.
```

You can not delete a user name while EtherShare volumes still exist.

## ES UMODIFY Command

Adds or changes the password assigned to your user name.

### Format

```
ES UMOD[IFY] (newpass)
```

### Parameters

(*newpass*)

Changes the password assigned to your user name. The password must be enclosed in parentheses. Use an empty parentheses ( ) to remove a password.

### Remarks

If you are a new user, you can assign a password to your name with this command. You can also change or remove an existing password.

You must enclose the password in parentheses when you use this command.

This command has two forms, ES UMODIFY and ES UMOD. You may use either form.

### Examples

#### Prompted

```
A> ES UMOD ? ←  
New password? (MINE) ←  
STEVEP modified.
```

Assigns or changes a password associated with an EtherShare username. This password must be given when you log in. The password is not displayed when it is entered.

#### Unprompted

```
A> ES UMOD (FORGET) ←  
USER2 modified.
```

Assigns or changes the password which belongs to the logged in user name.

# ES UNLINK Command

## ES UNLINK Command

Ends the link between a drive specifier and an EtherShare volume.

### Format

ES UNLINK *drive*

ES UNLINK [*username.*]*volname*

### Parameters

*drive*

The drive specifier to which the EtherShare volume is linked.

[*username.*]*volname*

The name of the EtherShare volume to which you are currently linked. The *username* parameter is the owner's name. The owner's name is required if the volume does not belong to you. Separate the user name and the volume name with a period (.).

### Remarks

Use the ES UNLINK command to end the link between the drive specifier and an EtherShare volume. This makes the drive available to link to another volume. It also releases private volumes for use by other EtherShare users.

You can unlink by identifying either the drive specifier to which an EtherShare volume is linked or by supplying the linked volume name.

You can unlink all volumes by specifying an \* in place of a drive specifier.

## Examples

### Prompted

```
A> ES UNLINK ? ←  
Drive id or volume? C: ←  
REPORTS unlinked from C:
```

Ends the link between the EtherShare volume REPORTS and drive specifier C:.

### Unprompted

```
A> ES UNLINK SALES ←  
SALES unlinked from D:
```

The volume SALES is no longer linked to drive specifier D:.

```
A> ES UNLINK * ←  
All volumes unlinked.
```

Unlinks all currently linked volumes.

# EtherShare Commands

## Command Summary

- ES CREATE** *volname* [(*password*)] [*size*]  
Creates and formats a new EtherShare volume.
- ES DEL** *volname*  
Permanently deletes an EtherShare volume.
- ES DIR** [[*username.*]*volname*] [*/L*] [*/P*] [*/W*]  
Lists EtherShare volumes.
- ES ERASE** *volname*  
Permanently deletes an EtherShare volume.
- ES HELP** [*commandname*]  
Gives information about EtherShare commands.
- ES LINK** *drive* [*username.*]*volname* [(*password*)]  
Creates a link between a drive specifier and an EtherShare volume.
- ES LOGIN** *username* [(*password*)]  
Establishes a connection with EtherShare.
- ES LOGOUT**  
Ends a connection to EtherShare.
- ES MO[DIFY]** *volname* [*newname*] [(*newpass*)] [*newaccess*]  
Changes the name, password and/or access of an EtherShare volume.
- ES REN[AME]** *volname* [*newname*] [(*newpass*)] [*newaccess*]  
Changes the name, password and/or access of an EtherShare volume.
- ES SDIR** [*servername*] [*/W*] [*/P*]  
Lists the names of all servers in the network.
- ES UCREATE** *username*  
Adds a new user to EtherShare.
- ES UDEL** *username*  
Deletes a user from EtherShare.

## EtherShare Commands

ES UDIR *[[server.]username]* *[/P]* *[/W]*  
Lists the names of EtherShare users.

ES UERASE *username*  
Deletes a user from EtherShare.

ES UMOD[IFY] *(newpass)*  
Adds or changes the password assigned to your user name.

ES UNLINK *drive*

ES UNLINK *[username.]volname*  
Ends the link between a drive specifier and an EtherShare volume.

(

(

(

# Appendix A

## Glossary

---

### Glossary

#### Access

The right or capability to use software or hardware. For example, in order to access EtherShare, you must login with a user name. Without the user name, you cannot access EtherShare to use the commands (software) or store volumes on the EtherShare disk (hardware). Access is also used to describe the attributes of private, public, and shared EtherShare volumes.

#### Batch File

A file containing a group of EtherShare and DOS commands commonly used together. By entering the batch file name, you are able to perform all commands contained in the file as if you had typed them directly.

#### Boot

Load software into the computer memory. When you boot, either by pressing **CTL-ALT-DEL** or turning the power OFF/ON, you are automatically logged out from your server; therefore, you lose all existing communication links such as links to EtherShare volumes.

#### Drive Specifier

The DOS name used to identify a diskette drive or a device with similar data storage capability. With EtherShare you can assign up to four drive specifiers. If your IBM PC has two diskette drives, they are C:, D:, E:, and F:. On a PC with one fixed disk, you can use D:, E:, F:, and G: to link to EtherShare volumes. If your PC has two disk drives, E:, F:, G:, and H: can be linked to EtherShare volumes.

#### Link

Establish a connection across the network between a DOS drive specifier or a printer name on your IBM Personal Computer and a volume or printer on a server.

#### Log in

A procedure performed by using the ES LOGIN command that controls your ability to use (access) EtherShare. When you log in, you give your EtherShare user name. The EtherShare program will find your server (if several exist on the network) and connect you to it. Use the ES CREATE command to add a new user name to the list of users.



# Glossary

## Password

A private word which can be assigned to both user names and EtherShare volume names. Assigning passwords limits access to EtherShare in general and to specific volumes. This makes the information you have stored on EtherShare volumes as secure as possible.

## Private Volume

A type of access which you can assign to an EtherShare volume. Private access is assigned when you create a volume. Private volumes can be used by one user at a time and can be written to as well as read. If users other than the owner want to access a private volume, the volume must have a password which those users must supply when they link to the volume.

## Public Volume

A type of access which you can assign to an EtherShare volume. Public volumes can be shared by many EtherShare users at the same time. Users other than the owner can only read files or programs from the volume. The owner can both read and write. A public volume without a password may be linked by any user. User's must supply the password if a public volume has one.

## Semaphore

A semaphore is a flag that can be unlocked or locked to indicate that a shared resource, for example a file, is currently available or not available for use by other programs. All programs that will access a shared file must cooperate by checking to see if the corresponding semaphore is locked or unlocked before accessing it.

## Shared Volume

A type of access which you can assign to an EtherShare volume. Shared volumes can be linked by many users at the same time to be both written to and read from. Writing to shared volumes should be coordinated by using the semaphores to protect against the potential loss of data caused by many users writing to a file simultaneously. Users other than the owner must supply the volume password when they link to a shared volume.

## **User Name**

The name you use to log in to EtherShare. This name gives you the ability to use all EtherShare functions. User names can be created by any user who is logged in.

## **Volume**

Similar to a diskette you use with your IBM personal computer. EtherShare divides the hard disk into various sized areas which you specify when you create a volume. These areas are assigned a name, access type, password and size with the ES CREATE command. From this point, you can link it to a drive specifier on your IBM Personal Computer and use it like a diskette or fixed disk drive.

(

(

(

## Appendix B

# The LOGIN Batch File

---

## The LOGIN Batch File

One batch file, LOGIN, is provided with EtherShare. The contents of this file and its functions are described in this appendix.

LOGIN is part of your EtherSeries Software User Diskette. It is copied onto your EtherSeries/DOS diskette during software installation.

You can create your own batch files or modify LOGIN with the DOS editor, EDLIN, or the EtherMail editor, MED.

## Diskette Drives

Use the available drive specifiers as follows, depending on the configuration of your IBM PC.

Drive A: The EtherSeries/DOS diskette

Drive B: Available for an actual diskette

Drive C: EtherShare volumes

Drive D: EtherShare SYS.SYS2 volume used for EtherSeries/DOS, EtherShare software, EtherMail software and distribution lists.

Drive E: EtherShare volumes

Drive F: EtherShare volumes

## Batch File Description

In the following, the /NP parameter (No Prompt) suppresses confirmation prompts while the batch file is running. If you want to cancel a batch file that has started, press the **Ctrl** and **Break** keys simultaneously.

# EtherShare Batch Files

## The LOGIN Batch File

### Format

LOGIN *username*

### Function

Logs you in to EtherShare, links you to the public EtherSeries/DOS system volume and establishes a link to a shared printer connected to your EtherShare server.

Once you have logged in with the LOGIN batch file, D:, which is linked to the shared system volume, SYS.SYS2, becomes your default drive, and PRN: (or LPT1:) is linked to the printer connected to your server. When you are finished, you should change the default drive back to A:, and log out with the ES LOGOUT command. If your server does not have a SYS.SYS2 volume, refer to the EtherShare Administrator's Guide for further information.

### Listing

ECHO OFF	Turns off the display of batch commands as they are read from the batch file.
ES LOGIN %1; LINK D: SYS.SYS2 /NP	Initiates the ES LOGIN command. The name supplied for the username parameter is substituted for the %1 variable. Links the EtherShare volume SYS.SYS2 to drive specifier D:.
IF ERRORLEVEL 1 GOTO FAIL	Tests for errors. If there was an error, the GOTO is performed and the batch file stops. If there were none, the next batch file command is used.
D:	Changes the default drive to D:
EP LINK /1	Establishes a link to printer /1 connected to the server.
:FAIL	In the case of errors, the batch file stops.

## Using Purchased Software

---

### Using Purchased Software

There are many purchased software programs which can be used with the network. These programs are used in the normal way, except that you have the added advantage of being able to access data files on an EtherShare volume and print files on a shared printer.

Examples of loading and using purchased programs with EtherShare are given in Section 3.

Table C-1 lists purchased software which can be used with EtherShare and shows how you would run the program.

To run these programs, establish any links you require, insert the software diskette in drive A: (your default drive) and type the program name given in table C-1. If the program is self-loading, you can use the AUTOEXEC.BAT file directly to load the software without breaking network links. Refer to "Using VisiCalc" in Section 3 for more information on using self-loading programs.

<b>Program</b>	<b>Program Name</b>	<b>Self-Loading</b>
VisiCalc	VC80	Yes (AUTOEXEC)
SuperCalc	SC	No
WordStar	WS	No
EasyWriter 1.1	EW	Yes (AUTOEXEC)
pfs: FILE	FILE	Yes (AUTOEXEC)
pfs: REPORT	REPORT	Yes (AUTOEXEC)
pfs: GRAPH	GRAPH	Yes (AUTOEXEC)
VisiDesktop/Plan	BASIC MENU	Yes (AUTOEXEC)
VisiFile	VF	Yes (AUTOEXEC)

Table C-1. EtherShare Compatible Software

## Using Purchased Software

### Using Purchased Software

These and any other programs which meet the following criteria can be used with EtherShare:

- Must use IBM PC DOS Version 2.0, or MSDOS Version 2.0
- Must use the standard diskette driver and/or the standard printer driver
- Must be relocatable
- When loaded into memory, the program and data must leave approximately 5400 bytes available for the Ethernet drivers
- Must not depend on linking to EtherShare volumes while the program is running. All data to be accessed must be linked before running the application program.

Purchased software programs which are known not to meet these criteria are:

- EasyWriter 1.0
- Visitrend/Plot 1.0
- VisiDex 1.0
- VisiSchedule
- Time Manager

For information on EtherShare compatibility with software not listed here, call the 3Com customer support number, (415)964-5561.

## Appendix D

# Semaphores

---

### Overview

EtherShare allows you to share files among individual Personal Computers on a network. You can share files on both a read-only and a read-write basis. Allowing many users to read a common file causes no problems; however, writing to a common file is potentially dangerous and can result in a loss of data. For this reason, semaphores are provided. They allow you to designate which files and records are being changed to ensure that only one PC is updating a file at any given time.

Programs must cooperate with one another to ensure file system integrity when you are updating shared files. Programs can control multiple accesses to common files with semaphore operations. These operations must programmatically bracket shared file accesses with lock and unlock semaphore calls to ensure that only one user is updating a file at a time. If the programs accessing a shared file are not cooperating, multiple writes to the same record of a file can result in lost information since the last write could overwrite previous ones. By locking a file or record during an update operation, any other cooperating program which wants that file or record will wait until it is unlocked. When the blocked program is able to lock, it can then read the data to ensure it has a current copy of it, modify it, write it back and then unlock it. *Existing programs will have to be modified to use semaphores before they can be used with shared access volumes.*

### EtherShare Volume Access

EtherShare volumes can have three kinds of access: private, public or shared. All EtherShare volumes are created with private access. After files have been loaded, the access may be modified to public or shared.

Each of these volume types has different access restrictions associated with it. Private volumes are read-write but may be accessed by only one user at a time. Public volumes may be shared by many users at the same time, but they have read-only access. Only shared volumes can be accessed by many users at the same time with both read and write capability. For this reason, semaphores are provided for use with shared access volumes and provide a means to protect against the loss of data that may occur when multiple programs update the same file.



# Semaphores

## Semaphore Operations

Three semaphore operations are provided by EtherShare servers: LOCK/WAIT, LOCK/RETURN, and UNLOCK. These operations are used to programmatically bracket shared file access operations. If a file or record is locked before it is updated, any other cooperating program which wants it has to wait until it is unlocked.

In order to properly access shared volumes using semaphores, your programs should:

- lock the semaphore
- read the file and/or record
- write the new and/or changed data
- flush the buffer
- unlock the semaphore

Any existing programs must be modified to include semaphores if they will update files in EtherShare volumes with shared access.

All three semaphore operations are implemented using software interrupt 60H with the appropriate command code in register AH. The status of the operation is returned in register AL. All registers except AX are preserved.

## Semaphore Names

A semaphore name is any ASCII string up to 31 bytes long. The name must be terminated with byte containing a zero regardless of its length. The maximum string is 32 bytes, including the zero byte. There are no predefined strings; however it is helpful if cooperating programs follow a naming convention. For example, the name of the application might be the first part of the string so that different applications using the same network server would not have the same semaphore names. *It is up to the cooperating programs to define and adhere to the convention.*

You can use an asterisk (\*) as a match character in semaphore names to match none or more occurrences of all characters. The asterisk (\*) cannot, however, occur in the first eight characters of the name in order to

prevent an application from inadvertently locking out all semaphores. Only one pattern match character can occur in a semaphore name and it must be the last character in the string. For example, "filename\*" matches "filenamexxx". Therefore, an attempt to lock "filename\*" when "filenamexxx" is locked will fail as would an attempt to lock "filenamexxx" if "filename\*" is locked.

The pattern match capability allows record and file locking to be easily supported. If the convention to lock a record is to use a semaphore name made up of the filename and the record number, that is "filename123" locks record 123 of file "filename", then you can lock the entire file by issuing a lock on "filename\*". The attempt to lock "filename\*" will fail as long as any record is locked. When all records are unlocked and "filename\*" locks, any attempt to lock an individual record will fail as long as the file lock "filename\*" remains in effect.

## Multiple Server Networks

There are three ways to identify the server which is managing the specified semaphore. First, you can use the drive id to which the volume is linked. Secondly, you can give an Ethernet address. Thirdly, if you do not specify either of the others, the server to which you are logged in is used. If the logged in server is used, a lock on the wrong server may occur if the link is to a volume on a different server.

AL =     The drive id to which the EtherShare volume containing the data is linked. It must be an EtherShare drive and must not have been assigned by the DOS ASSIGN command.  
          (1 = A, 2 = B, etc.)

AL = 0 if not used

ES:SI =  A pointer to the Ethernet address of the server which is managing the semaphore. (Used if AL = 0)

SI = 0 if not used

If the explicit Ethernet address is passed in ES:SI, it should be declared in byte order, that is, if the address is 02608C010203, it should be declared as:

```
          eaddr   db    02H,60H,8CH,01H,02H,03H
```

If AL = 0 and SI = 0, the logged in server is used.

# Semaphores

## Semaphores

Use INT 60H with the function code in AH as follows:

### LOCK/WAIT

Locks a semaphore. If the lock is successful, it returns a status code immediately. If it is unsuccessful, it keeps trying until the lock can be performed, or the timeout value supplied has expired.

#### Call:

AH = 11H

AL = Drive id or 0 if not used

DS:BX = Pointer to name (semaphore)

ES:SI = Pointer to Ethernet address or SI = 0 if not used

If AL and SI both equal 0, then use the address of the server to which you are logged in.

DX = Number of seconds to wait for lock

#### Return Status Code in AL:

0 = Operation successful

1 = Timeout

2 = Server not responding

3 = Invalid semaphore name (Name must have at least one character and no more than 31; there must not be an asterisk (\*) in the first eight characters.)

4 = Semaphore list is full

5 = Invalid drive id (The drive is either not an EtherShare drive, or it has been assigned.)

6 = Invalid Ethernet address (It cannot be multicast or broadcast.)

7 = Not logged in (Attempt to use default logged in server when not logged in.)

8 = Write to network failed

9 = Semaphore already locked by this PC

## LOCK/RETURN

Locks a semaphore. Returns a status code immediately whether the lock is or is not successful.

### Call:

AH = 12H

AL = Drive id or 0 if not used

DS:BX = Pointer to name (semaphore)

ES:SI = Pointer to Ethernet address or SI = 0 if not used.

If AL and SI both equal 0, then use the address of the server to which you are logged in.

### Return Status in AL:

0 = Operation successful

1 = Semaphore currently locked

2 = Server not responding

3 = Invalid semaphore name (Name must have at least one character and no more than 31; there must not be an asterisk (\*) in the first eight characters.)

4 = Semaphore list is full

5 = Invalid drive id (The drive is either not an EtherShare drive, or it has been assigned.)

6 = Invalid Ethernet address (It cannot be multicast or broadcast.)

7 = Not logged in (Attempt to use default logged in server when not logged in.)

8 = Write to network failed

9 = Semaphore already locked by this PC

# Semaphores

## UNLOCK

Unlocks a currently locked semaphore.

### Call:

AH = 13H

AL = Drive id or 0 if not used

DS:BX = Pointer to name (semaphore)

ES:SI = Pointer to Ethernet address or SI = 0 if not used

If AL and SI both equal 0, then use address of the server to which you are logged in.

### Return status in AL

0 = Operation successful

1 = Semaphore not locked

2 = Server not responding

3 = Invalid semaphore name (Name must have at least one character and no more than 31; there must not be an asterisk (\*) in the first eight characters.)

4 = Semaphore list is full

5 = Invalid drive id (The drive is either not an EtherShare drive, or it has been assigned.)

6 = Invalid Ethernet address (It cannot be multicast or broadcast.)

7 = Not logged in (Attempt to use default logged in server when not logged in.)

8 = Write to network failed

## Remarks

If you plan to have several programs running concurrently and reading and writing to files on the same volume, you should be familiar with the way DOS allocates file space, uses the File Allocation Table (FAT) and directories, and buffers sub-block reads and writes. (See Appendixes B, C, and D of the IBM Disk Operating System Manual.)

Shared files should be fixed length, and if they are to change size, you should preallocate the space. This is necessary to ensure that Personal Computers sharing the same files have a valid copy of the File Allocation Table (FAT). DOS keeps a copy of the File Allocation Table in each Personal Computer. This table keeps track of all disk blocks, for example, which blocks currently belong to a file and which ones are free. The table is read from the disk when a file is opened and is rewritten when a file is closed. By preallocating space for shared files, you ensure that all PCs sharing those files will have a valid copy of the FAT.

A request to lock a semaphore initiates a search of the list of those currently locked. If no match is found, the named semaphore is entered into the list of locked semaphores. The list in each server can contain up to 50 names. If a match is found, then the status "semaphore currently locked" is returned. Alternatively, the program can request to wait until the lock succeeds.

Programs using semaphore operations to lock records or files should do so for the shortest time possible so that other programs are not blocked.

## Semaphores

When using the LOCK/RETURN function, care should be taken to ensure that the operation, if unsuccessful, is not immediately tried again. Your program should delay before retrying the operation. Otherwise, you will “flood” the network server with requests which must be processed. Rapid retransmission of lock requests may cause the server to be less available for processing other IBM PC’s requests for disk or printer access.

If a Personal Computer has a lock in effect and is turned off or goes down, the lock remains in effect and can block other programs. Locks that have been set can be cleared by:

- using the UNLOCK function
- logging out from the server
- logging in as a new user
- rebooting your IBM Personal Computer
- using the Administration functions from a server (See the EtherShare Administrator’s Guide)

Each lock is associated with the Ethernet address of the Personal Computer that requested the lock. You must request the unlock from that same PC unless you use the Administration functions from a server.

# Appendix E

## Upgrading to EtherShare 2.0

---

### Overview

If you are currently using EtherShare version 1.0 with DOS 1.0 or 1.1 and are upgrading to EtherShare version 2.0 with DOS version 2.0, you must follow the two procedures described in this appendix. First, you must change the switch settings on your IBM Personal Computer's system board, and secondly, you must convert your existing EtherShare volumes for use with version 2.0.

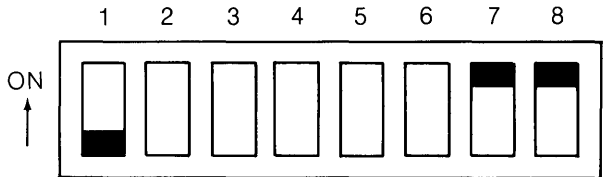
### Setting the Drive Switches

Remove the cover of your IBM Personal Computer to change switch 1 to reflect the actual number of drives that your computer contains.

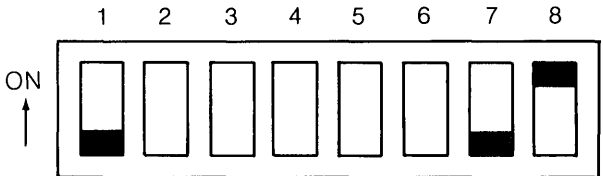
Refer to Installation section of your EtherLink User's Guide, version 1.0, for instructions on removing the system unit cover (pages 2-8 and 2-9) and locating the switch on the system board (page 2-14).

Set switch positions 1, 7 and 8 as indicated. Do not change the positions of switches 2, 3, 4, 5 or 6.

If you have one drive:



If you have two drives:



Return to your EtherLink User's Guide, version 1.0, for instructions on replacing the system unit cover and reconnecting the cables and power.



## Upgrading to EtherShare 2.0

### Converting EtherShare 1.0 Volumes for Use with EtherShare 2.0

All EtherShare volumes created with DOS version 1.1 as double sided (/2) with EtherShare version 1.0 must be converted for use with DOS 2.0 and EtherShare version 2.0. A batch file, CONVERT.BAT, and the program E CONVERT.COM are provided on your EtherSeries User Software Diskette, version 2.0 for this purpose. They have *not* been copied onto your EtherSeries/DOS Software Diskette during software installation.

Single sided volumes (/1 or 160KB) do not need to be converted.

#### The Convert Batch File

Converts an EtherShare 1.0 double sided volume to an EtherShare 2.0 volume.

#### Format

```
CONVERT oldvol newvol
```

#### Function

Links you to the current volume (oldvol), creates a new double sided volume (newvol) and links that volume. The batch file then copies the old volume to the new volume converting it in the process and lists the contents of the new one to make sure it is as expected. The old volume is then deleted and the new volume is renamed to the old volume name.

#### Listing

```
ECHO OFF
```

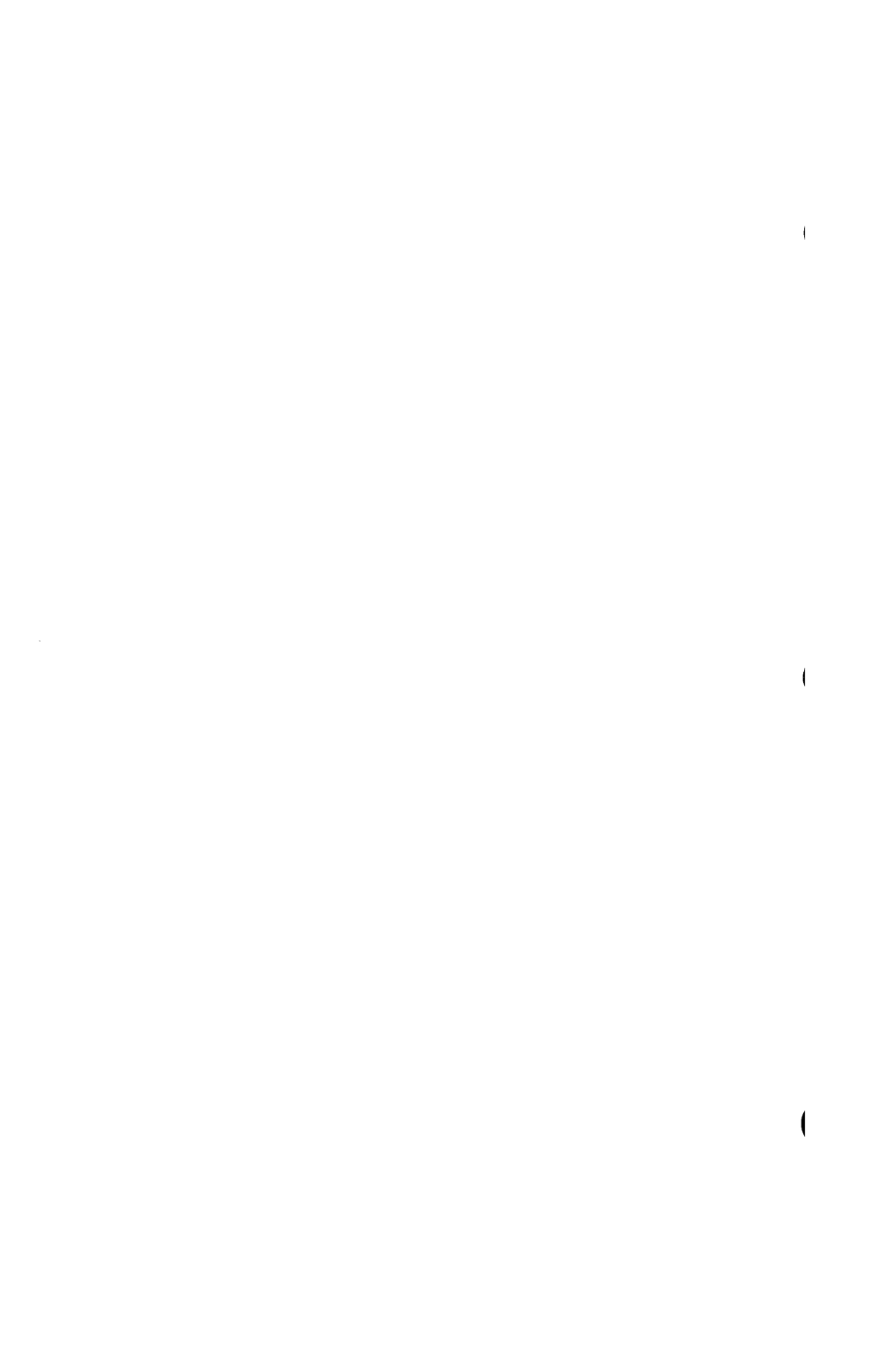
Turns off the display of DOS commands as they are read from the batch file.

```
ES CREATE %2 /2; LINK E: %1; LINK F: %2
```

Creates the new volume and links it to drive specifier F:. Links the existing volume to E:. The name supplied for the new volume is substituted for the %2 variable; the name supplied for the old or existing volume is substituted for the %1 variable.

## Upgrading to EtherShare 2.0

IF ERRORLEVEL 1 GOTO FAIL	Tests for an error. If an error occurs, the GOTO is performed. If no errors occur, the next command is performed.
ECONVERT E: F:	Converts the old volume to the new volume.
CHKDSK F:	Uses the DOS CHKDSK command to check the new volume.
DIR F: /P	Lists the contents of the new volume for you to verify.
PAUSE	Suspends the batch file and displays the message: "Strike any key when ready ..."
ES UNLINK E;; UNLINK F;; DEL %1 /NP; RENAME %2 %1	Unlinks the old volume from drive specifier E;; unlinks the new volume from drive specifier F;; deletes the old volume; renames the new volume to the old volume. The name supplied for the old volume is substituted for the %1 variable; the name supplied for the new volume is substituted for the %2 variable.
:FAIL	If errors occur, the batch file stops.



# Appendix F

## Error Messages

---

### Error Messages

EtherShare error messages are displayed in the form of **\*\*\*Error message.** This appendix lists these messages alphabetically, explains the message and recommends recovery action.

The words VOLUME, USER and SERVER represent any volume name, user name or server name. The actual volume name, user name or server name is substituted when the message is displayed.

<b>Error Message</b>	<b>Meaning/Action</b>
A value must be supplied.	A parameter value is required. No default is assigned.
Bad character.	An illegal character has been typed for this parameter.
Bad server.user name format.	A user name can be an optional server name and a period followed by a user name.
Bad user.volume name format.	A volume name can be an optional user name and period followed by a volume name.
Can't find user USER.	The specified user could not be found on any server on the network.
Can't link to an assigned drive.	You cannot link to any drive id which has been redefined using the DOS ASSIGN command.
Caution: Overlaying default drive X:	You are requesting to link a volume to your default drive. This can get you into trouble.
Caution: At least one server did not respond, so a duplicate user name may result. Add user anyway (Y/N)?	When adding a new user, all EtherShares are checked for that user name. If one of the EtherShares does not respond, it is possible the user already exists on that server. If you are sure the user is unique, go ahead. Otherwise, cancel the operation, and try again later.

# Error Messages

<b>Error Message</b>	<b>Meaning/Action</b>
Cross server access failed.	There was a failure in a request to access a server other than the one to which you are logged in.
#CROSS is a reserved user name.	#CROSS is used by EtherShare internally and is not available for general use.
Drive X: in use... OK to unlink (Y/N)?	The requested drive has a volume linked to it. You are asked if the volume can be unlinked.
Enter only one value.	More than one value has been entered for a command parameter. Remember, use a space to separate parameter values.
Enter /P for pause.	In a directory listing, /P is used to request a pause.
Enter /PUB, /PRIV, or /SHAR.	These are the acceptable values for the access parameter.
Enter /W for a wide listing.	In a directory listing, /W is used to display several entries on one line.
Enter /1 or /2, /64KB - /32000KB, or /1MB - /32MB.	Volume size options. /1 is single sided; /2 is double sided. You can also indicate the size in kilobytes (KB) or megabytes (MB).
Ethernet driver not loaded.	You must boot using the EtherSeries/DOS diskette.
Failure formatting volume.	There was a write error while automatically formatting the volume being created. Delete and recreate the volume. If failure continues, you are possibly out of disk space on your server. Use the server ADMIN functions to remove unnecessary undelivered mail and files waiting to be printed, and restart the EtherSeries software.
Maximum users logged in.	No more users can log in to EtherShare. Someone needs to log out before you can log in.

<b>Error Message</b>	<b>Meaning/Action</b>
Max of 2 characters.	More than two characters have been given for a drive id value such as C: or D:.
Max of 8 characters.	A server, user or volume name can contain a maximum of eight characters.
No match.	No name matches the request.
Not enough disk space, numKB remain.	Not enough disk space to create the volume requested.
Nothing to modify.	You must include at least one of the parameters in the ES MODIFY command.
No volumes linked.	You are requesting to list currently linked volumes with the ES DIR /L command. There are none, or you are attempting to "unlink*" and there are no volumes linked.
No volume linked.	No volume is currently linked to the drive specifier given.
Password incorrect.	The password given is not correct. Try again. Be sure you have typed the correct password.
Passwords must be enclosed in parens.	Enter the password enclosed in parentheses ( ). The right parenthesis is not required.
Please log in first.	You must log in to use any EtherShare commands.
Selection must be 1-14.	Select a command by typing the number next to the command option. Only 1-14 can be used.
Semicolon (;) must be followed by a space.	There must be at least one space after each semicolon (;) to separate multiple EtherShare commands entered on one line.

## Error Messages

<b>Error Message</b>	<b>Meaning/Action</b>
Server not ready.	The EtherShare server is not responding. It may be too busy or not operating. Try a few more times, then check the EtherShare.
Server not ready ... Correct login name?	No server is responding to your log in request. It may be an unknown user name, or the server may be too busy or not operating. If you are sure the log in name is correct, try again.
Server SERVER not ready.	The server named SERVER is either not operating or too busy.
Unknown command.	EtherShare commands are used in the form ES COMMAND. It must be one of the 15 defined commands.
Use /L or a volume name, not both.	You can list volumes or linked volumes, not both. Use either ES DIR /L or ES DIR volname.
USER already exists on server SERVER.	The user name you want to add to EtherShare already exists on the server named SERVER. User names must be unique on the entire network.
USER unknown.	The user name you want to delete does not exist on the EtherShare to which you are logged in.
Value must be X: through X:.	You can link EtherShare volumes to the drive specifiers shown only.
Values ignored from XXX.	Too many parameters have been given. The command has been executed, but all values including XXX have been ignored.
VOLUME already exists.	Each volume you create must have its own unique name.
VOLUME has no assigned password.	You cannot access another user's volume unless a password has been assigned and you give that password.

<b>Error Message</b>	<b>Meaning/Action</b>
VOLUME is a private volume and already in use	Private volumes have exclusive access. Once a private volume has been linked, no other user can link it.
VOLUME is linked.	You cannot modify or erase a linked volume. You must first unlink the volume using ES UNLINK and make sure no one else has it linked.
VOLUME is linked to X: ... OK to unlink (Y/N)?	The requested drive is currently linked to VOLUME. Confirm if it is all right to unlink VOLUME.
VOLUME not linked.	When requesting an ES UNLINK for VOLUME, it is not currently linked.
VOLUME space is full.	All EtherShare disk space has been used. An EtherShare volume must be deleted before space will be available.
VOLUME unknown.	There is no EtherShare volume with this name. Check the spelling. Make sure you include the owner's name if it is not your volume.
Write to network failed.	Your IBM Personal Computer cannot access the network probably because the network itself has a problem. Consult the EtherLink User's Guide for help in finding the problem.





# Index

---

## A

### Access

- definition, 2-2, A-1
- private access, 3-3
- relationship between passwords and access, 2-2

### Applications, EtherShare, 3-6

### AUTOEXEC.BAT

- using with purchased software, 3-7, C-1
- using with the VisiCalc program, 3-9

## B

### Batch Files

- AUTOEXEC.BAT, 3-7, 3-9
- CONVERT, E-2
- definition, 2-3, A-1
- using, 3-14

### Batch File Description, B-2

- The LOGIN batch file, B-2

### Boot, definition, A-1

## C

### Cancelling Commands, 4-3

### Commands

- ES CREATE
  - reference, 4-5
  - using, 3-3
- ES DEL
  - reference, 4-10
- ES DIR
  - reference, 4-8
  - using, 3-7
- ES ERASE
  - reference, 4-10
  - using, 3-11
- ES HELP
  - reference, 4-11

### ES LINK

- reference, 4-12
- using, 3-4
- using with other user's volumes, 3-6
- using with VisiCalc, 3-9
- using with WordStar, 3-8

### ES LOGIN

- reference, 4-15
- using, 3-2

### ES LOGOUT

- reference, 4-17
- using, 3-6

### ES MODIFY

- reference, 4-18
- using, 3-11

### ES RENAME

- reference, 4-18

### ES SDIR

- reference, 4-21

### ES UCREATE

- reference, 4-23
- using, 3-12

### ES UDEL

- reference, 4-27

### ES UDIR

- reference, 4-25
- using, 3-13

### ES UERASE

- reference, 4-27
- using, 3-13

### ES UMODIFY

- reference, 4-29
- using, 3-12

### ES UNLINK

- reference, 4-30
- using, 3-5

### Command Summary, 4-32

### Command Format, 4-2

### Concepts and Terminology, 2-1

### COPY Command

- using with EtherShare volumes, 3-5

# Index

Copying the LOGIN Batch File, 3-14  
Creating an EtherShare Volume, 3-3  
Creating a New User Name, 3-12  
Cross Server Links definition, 2-4

## D

DIR Command  
    using with EtherShare, 3-5  
Displaying the User Directory, 3-13  
DOS Commands  
    COPY, 3-5  
    DIR, 3-5  
DOS Wild Card Characters, 3-13, 4-8,  
    4-21  
Drive Specifier(s)  
    definition, A-1  
    linking a volume, 3-3, 4-12  
    unlinking a volume, 3-5, 4-30

## E

Ending a Link, 3-5  
Erasing a User Name, 3-13  
Erasing a Volume, 3-11  
Error Messages, F-1  
ES, 4-1  
ES CREATE Command  
    reference, 4-5  
    using, 3-3  
ES DEL Command  
    reference, 4-10  
ES DIR Command  
    reference, 4-8  
    using, 3-7  
ES ERASE Command  
    reference, 4-10  
    using, 3-11  
ES HELP Command  
    reference, 4-11  
ES LINK Command  
    reference, 4-12  
    using, 3-4  
    using with other user's volumes,  
        3-6  
    using with VisiCalc, 3-9  
    using with WordStar, 3-8  
ES LOGIN Command  
    reference, 4-15  
    using, 3-2  
ES LOGOUT Command  
    reference, 4-17  
    using, 3-6  
ES MODIFY Command  
    reference, 4-18  
    using, 3-11  
ES RENAME Command  
    reference, 4-18  
ES SDIR Command  
    reference, 4-21  
ES UCREATE Command  
    reference, 4-23  
    using, 3-12  
ES UDEL Command  
    reference, 4-27  
ES UDIR Command  
    reference, 4-25  
    using, 3-13  
ES UERASE Command  
    reference, 4-27  
    using, 3-13  
ES UMODIFY Command  
    reference, 4-29  
    using, 3-12  
ES UNLINK Command  
    reference, 4-30  
    using, 3-5  
EtherSeries/DOS Diskette  
    EtherShare batch files, 3-14  
EtherShare  
    commands, 4-1  
    concepts and terminology, 2-1  
    functions, 1-2  
    introduction, 1-2  
    using, 3-1

# Index

- EtherShare Applications, 3-6
- EtherShare Commands, 4-1
  - cancelling commands, 4-3
  - format notation, 4-4
  - prompted and unprompted forms, 4-2
  - /NP parameter, 4-2
  - overview, 4-1
  - selecting commands, 4-1

- EtherShare Users
  - creating new users, 3-12, 4-23
  - managing users 3-11

- EtherShare Volumes
  - creating, 3-3, 4-5
  - definition, 2-1, A-2
  - deleting, 4-10
  - ending a link, 3-5
  - erasing, 3-11
  - linking, 3-4, 4-12
  - managing, 3-11
  - modifying, 4-18, 3-11
  - renaming, 4-18
  - unlinking, 4-30, 3-5

## F

- Format Notation, 4-4

## G

- Getting Started, 3-2
- Glossary, A-1

## H

- Help, 4-11

## L

- Link
  - definition, A-1
- Linking to Other Users' Volumes, 3-6
- Linking to a Volume, 3-4
- Listing Volume Names, 3-7
- LOCK/RETURN Semaphore, D-5

- LOCK/WAIT Semaphore, D-4

- LOGIN Batch File
  - description, 2-3, B-1
  - using, 3-14

- Logging In, 3-2
  - definition, 2-1, A-1

- Logging Out, 3-8, 4-17

## M

- Managing EtherShare Users and Volumes, 3-11

- Modifying a Volume, 3-11

- Modifying a User Name, 3-12

- Multiple Commands on One Line, 4-3

- Multiple Server Networks
  - using with Semaphores, D-3

- Multiple Servers, definition, 2-3

## N

- Names

- Semaphore, D-2
  - User, 4-23
  - Volume, 4-5

- Network

- overview, 1-2

- Network Server

- definition, 2-1
  - multiple servers, 2-3
  - SDIR Command, 4-22

- /NP Parameter, 4-3

## O

- Operations

- Semaphores, D-2

# Index

## P

- Password
  - assigning, 4-29
  - changing, 4-29
  - definition, A-2
  - modifying a user name, 3-12, 4-29
  - relationship between passwords and access, 2-2
- Private Access, 3-3
- Private Volume
  - definition, 2-2, A-2
  - linking, 3-6
- Prompted Form, 4-2
- Public Volume
  - definition, 2-2, A-2

## R

- Read Only Access, 2-2
- Read-Write Access, 2-2
- Read-Write Access
  - Semaphores, D-1

## S

- Selecting Commands, 4-1
- Self-loading Software, 3-7, 3-9, C-1
- Semaphores
  - definition, A-2
  - EtherShare volume access, D-1
  - LOCK/RETURN, D-5
  - LOCK/WAIT, D-4
  - multiple server networks, D-3
  - names, D-2
  - operations, D-2
  - overview, D-1
  - UNLOCK, D-6

## Servers

- definition, 2-1
  - listing server names, 4-21
  - multiple servers, 2-3
  - server names, 2-3
- ## Shared Disk
- overview, 1-1
- ## Shared Volumes
- definition, 2-2
  - using with semaphores, D-1
- ## SYS.SYS2 Volume
- definition, 2-4, B-1
- ## SYS.SYS2
- definition, 2-4
  - the LOGIN batch file, B-2

## U

- UNLOCK Semaphore, D-6
- Unprompted Form, 4-3
- Upgrading to EtherShare 2.0
  - CONVERT batch file, E-2
  - converting EtherShare volumes, E-1
  - setting drive switches, E-1
- User Names
  - creating, 3-12, 4-23
  - definition, A-2
  - erasing, 3-13, 4-27
  - listing, 3-10, 4-25
- Using Batch Files, 3-14
- Using EtherShare, 3-1
- Using DOS Commands, 3-5
- Using Purchased Software, 3-7, C-1
- Using VisiCalc, 3-9
- Using WordStar, 3-8

# Index

## V

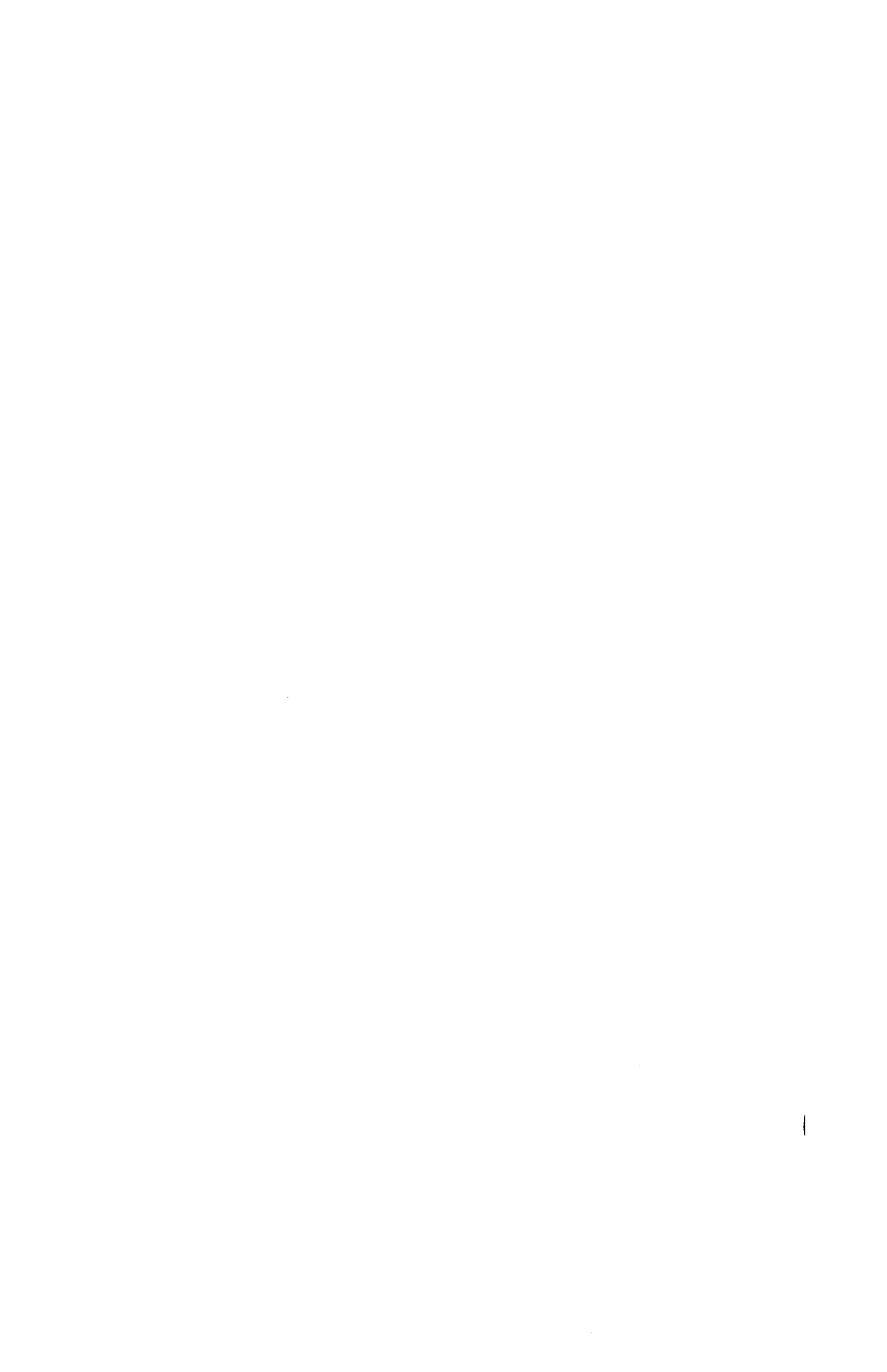
VisiCalc  
    using with EtherShare volumes,  
        3-9

Volumes  
    access, 2-2  
    creating, 3-3, 4-5  
    deleting, 4-10, 3-11  
    definition, 2-1, A-2  
    erasing, 3-11, 4-10  
    linking, 3-4, 4-12  
    listing, 3-7, 4-8  
    managing, 3-11  
    modifying, 4-18, 3-11  
    overview, 1-1  
    passwords, 2-2, 4-18, 3-11  
    renaming, 4-18  
    unlinking, 4-30, 3-5

## W

Wild Card Characters  
    to display user directory, 3-13,  
        4-8  
    to display server names, 4-21

WordStar  
    using with EtherShare, 3-8



# **EtherPrint User's Guide**

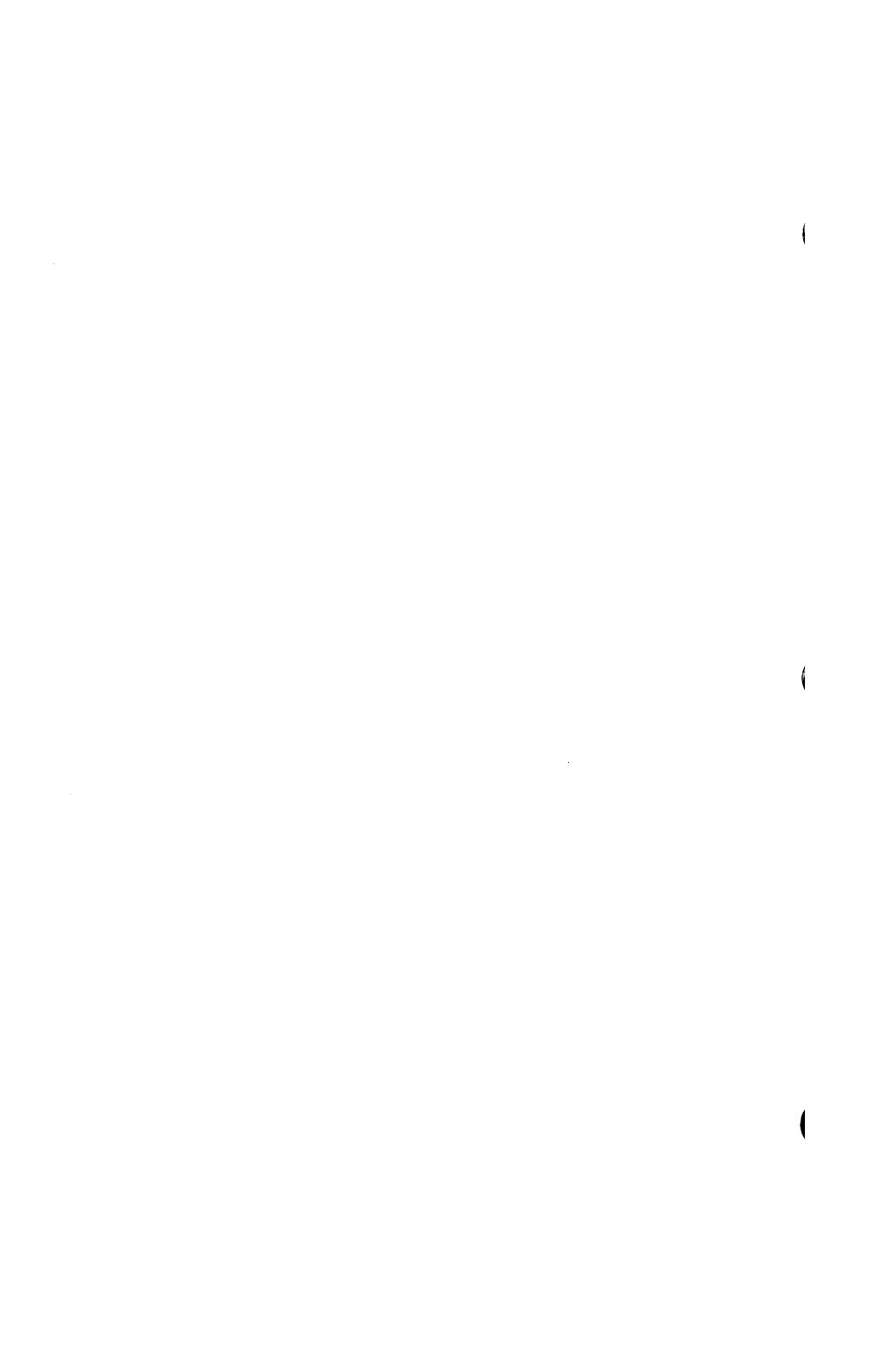
Software by: Greg Shaw

User's Guide by: Joan Lasselle  
Carol Ramsay

Version 2.0 July 1983

Copyright © 1982, 1983, 1984 by 3Com Corporation  
1365 Shorebird Way  
P.O. Box 7390  
Mountain View, California 94039  
USA





# Contents

---

## Section 1—Introduction

Overview .....	1-1
Features .....	1-2
EtherPrint Commands .....	1-2
Using this Manual .....	1-3

## Section 2—Using EtherPrint

Overview .....	2-1
Linking to a Printer .....	2-2
Establishing a Print Link .....	2-2
Printing a File .....	2-3
Selecting an Alternate Printer .....	2-5
Using Purchased Software .....	2-6
Establishing Links .....	2-6
Running the VisiCalc Program .....	2-7
Printing a VisiCalc Report .....	2-7
Printing Multiple Pages .....	2-8
Ending the Print Link .....	2-8
Hold Printing .....	2-9

## Section 3—EtherPrint Commands

Overview .....	3-1
Selecting Commands .....	3-1
EP DIR Command .....	3-3
EP HELP Command .....	3-5
EP LINK Command .....	3-6
EP UNLINK Command .....	3-10
Command Summary .....	3-12

## Appendices

Appendix A—Glossary .....	A-1
Appendix B—Error Messages .....	B-1

## List of Figures

IBM PCs Connected to a Server with a Printer .....	1-1
--	-----



# SECTION 1

## Introduction

---

### Overview

EtherPrint lets any IBM Personal Computer in the network send files or program output to a printer connected to a Network Server. These files are automatically stored at the server until they can be printed. This means many computers can send information to be printed at the same time; even though only one request can actually be printed at a time. Sharing a single printer eliminates the need to have a printer connected to each personal computer.

Two printers can be connected to a server to give you additional printing options. Through the use of EtherPrint commands, you can select the printer best suited for each printing job. Letter quality printers can be used for letters and final reports; higher speed printers can be used for program listings and draft documents. In addition, printers can be placed in different locations to serve separate departments.

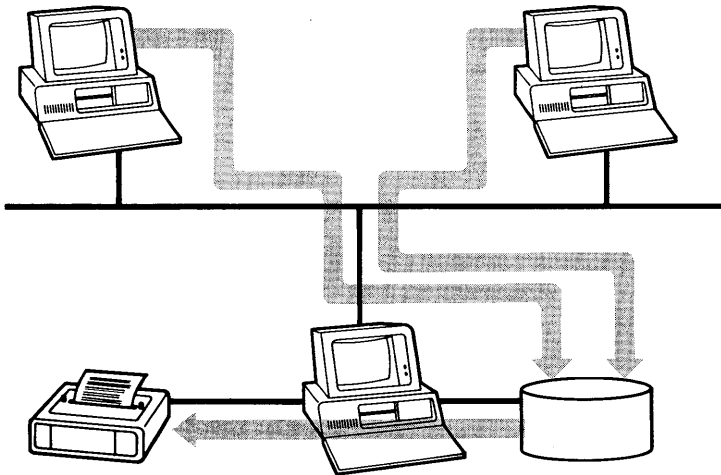


Figure 1-1 IBM PC's Connected to a Server with a Printer

In order to use EtherPrint, you establish a link between your IBM Personal Computer and a printer connected to an EtherPrint server. From this point on, you use the printer as if it was connected directly to your computer. Use standard DOS commands to copy a file to the printer, or use the **PrtSc** key to print the screen display. Additionally, programs can send output directly to the printer.

# Introduction

## Features

### Shared Resources

- Expensive letter quality and high speed printers can be shared by all IBM Personal Computers in an Ethernet network

### Automatic Queued Printing

- Files are stored on a server and printed on a first come first served basis

### Compatible with Other Software

- Once a link is established, you can print files just as if the printer was connected directly to your IBM Personal Computer

## EtherPrint Commands

The EtherPrint commands are found in the program EP which is supplied with your EtherLink card. It is contained in the file EP.COM on your EtherSeries/DOS Software Diskette or on your fixed disk.

## Using this Manual

This manual is divided into three sections.

Section 2 gives examples which show you how to use the EtherPrint commands to establish a print link to an EtherPrint Server. Read this section first. It is designed to get you started with EtherPrint.

Section 3 describes each EtherPrint command in detail. Each command parameter is described followed by a remarks section which provides information on using the command. In addition, examples of both the prompted and unprompted forms of the command are given. A command summary is also included.

There are two appendices:

- Appendix A is a glossary
- Appendix B lists all EtherPrint error messages

## SECTION 2

# Using EtherPrint

---

## Overview

EtherPrint can be used with either a 3Com Network Server or an IBM Personal Computer which is acting as an EtherPrint Server. In either case, the printing capabilities are the same when viewed from the IBM PCs on the network. EtherPrint provides these functions:

- Multiple users can print at once. Printing requests can be sent from many IBM Personal Computers to an EtherPrint server at the same time, even though only one request can actually be printed at a time.
- Two printers can be attached to a server. You choose the one you want to do your printing.
- Programs run faster. Any time you print with EtherPrint, the data is sent to the server at the speed of the network, not the speed of the printer.

To use a printer connected to a server, you need to:

- establish a link between your computer and a printer connected to a server,
- then use DOS commands, application programs or the **PrtSc** key to print files just as if you had a printer connected to your own personal computer.

When you establish a link, files that would normally be printed on a printer connected to your IBM Personal Computer are stored in temporary files or “spooled” on the server. When the printer you’ve selected is available, your work is automatically printed.

This section gives you examples for using EtherPrint. They show how to establish and end a print link, use DOS commands to print a file, and print a report generated by a popular application program, VisiCalc. The examples are designed to serve as models for ways to use EtherPrint with your own applications to expand your printing options.

The examples used in this section A: as the default drive; therefore the prompt A> is shown. If you have an IBM Personal Computer with a fixed disk, you will use C:; therefore, the prompt you will use is C>.

# Using EtherPrint

## Linking to a Printer

Insert your EtherSeries/DOS Software Diskette into diskette drive A: on your IBM Personal Computer. This diskette contains the EtherPrint program. If you have a fixed disk, set your default drive to C:. Remember to boot your computer with this diskette or from your fixed disk, otherwise the software you need to use EtherPrint is not available.

## Establishing a Print Link

In order to use EtherPrint, you need to establish a link between a printer device name on your IBM Personal Computer and a printer connected to a server. Use the EP LINK command to do this.

A> **EP LINK ?** ←

Establishes a link between your IBM Personal Computer and a printer connected to a server. Entering a question mark after the command specifies that you want to be prompted for all responses.

Your printer id? ←

The printer device name you want to link to the server's printer. Your choices are PRN:, LPT1:, LPT2:, and LPT3:. If you do not give a printer device name, PRN: is automatically used.

To whom? **SHARE1** ←

The name of the server whose printer you want to use. This name can be any server in the network. You must supply a server name if you are not logged in.

Your name? **CAROLR** ←

Your EtherShare user name. This name identifies anything you print. The name is printed on a blank page which separates your printed output from that of other users.

SHARE1 linked to PRN: ←

Confirms that a print link has been established.

If you are already logged in to EtherShare, EtherPrint assumes certain predefined or default values. For example, you do not need to supply the server name in response to the “To whom?” prompt; the link is automatically made to your current server. In addition, you are not prompted for your name. Your login user name identifies your printed output.

## Printing a File

When you link to an EtherPrint printer, you can print anything you would normally print such as files, your screen display, program listings, text files or reports. Files can be copied to the printer from diskettes or from EtherShare volumes. (If you want to print from an EtherShare volume, be sure you have logged in and linked to that volume with the ES LOGIN and ES LINK commands.)

**A> COPY REPORT PRN:** ←

Copies the file REPORT to a server for printing.

**A> COPY E:MEMO PRN:** ←

Sends the file MEMO, which is on an EtherShare volume linked to drive E:, to the server for printing.

**Shift (⇧) PrtSc**

Pressing ⇧ and **PrtSc** prints your current screen display on the printer connected to an EtherShare server.

**Ctrl PrtSc**

Hold down **Ctrl** and press **PrtSc** to print everything that displays on your screen to the printer connected to the server. Pressing the keys again stops printing the screen display.

The information to be printed is now stored in a special, temporary file on the server. It automatically begins printing, or is queued for printing, 30 seconds after your last print request.



## Using EtherPrint

You can print formatted text files with the BASIC PRINT program which is supplied on your EtherSeries/DOS Diskette. This program adds basic formatting features to text files you create with the DOS editor, EDLIN, or the EtherMail editor, MED. Text files printed with the BASIC PRINT program have these features:

- 1 inch top and bottom margins
- 8 character left margin
- centered page numbers except on page 1

In addition, the program formats pages so that first lines of paragraphs are not placed at the end of a page, just as last lines of paragraphs are not placed at the beginning of a page.

A> **BASIC PRINT**                      Runs the BASIC PRINT program and displays the message:

NOTE: To abort printing, press Ctrl-Break; then type "system"

Enter file name to be printed: **B:MEMO.TXT** ←  
Prints the file MEMO.TXT which is on a diskette in drive B:.

Printing page 1                      Indicates the page which is currently printing.

Done                                      Confirms that printing is complete.

## Selecting an Alternate Printer

EtherPrint allows two printers to be connected to each server. You can select the printer which best suits your printing job when you establish the EtherPrint link. Printer alternatives are identified with the /1 and /2 parameters of the EP LINK command. If you don't know which printer is designated by /1 and /2, you can use the EP DIR command. You must supply an EtherShare server name to use the EP DIR command if you are not logged in.

If you are already logged in to EtherShare, you can omit the server name; EP supplies it for you. If you want to list the printers on another server in the network, you must supply the name of that server.

A> **EP DIR SHARE1** ← Lists the printers connected to the server named SHARE1.

Printer(s) supported by the server:

1—DRAFT QUALITY      The printers connected to the server.  
2—LETTER QUALITY

You select alternate printers with the EP LINK command. From that point on, everything you print goes to the printer you've selected until you end the link with the EP UNLINK command, or until you use the EP LINK command a second time.

A> **EP LINK /2** ← Selects the printer identified as 2. This printer is connected to the server to which you are logged in.

A> **EP LINK SHARE2** ← Selects the default printer name (PRN:) and printer (1) connected to the server named SHARE2. Even if you are logged into one server, you can link to any other server in the network.

## Using EtherPrint

### Using Purchased Software

Most software which runs on the IBM Personal Computer using DOS can also be used with EtherPrint, for example, the VisiCalc program. You can run the VisiCalc program at your computer and use data files stored in EtherShare volumes. You can also print on a printer connected to any server in the network.

In order to print reports created with the VisiCalc program on an EtherPrint printer, you must first establish all EtherPrint and EtherShare volume links before running the VisiCalc program.

### Establishing Links

Log in to EtherShare and use the ES LINK and EP LINK commands to establish your print and volume links.

**A> ES LOGIN CAROLR ←**

Logs in a user called CAROLR.

**A> ES LINK E: VISIDATA ←**

Links the user's EtherShare volume containing the VisiCalc report to be printed to drive specifier E:.

**A> EP LINK ←**

Establishes a print link with the server to which you are logged in. Since no printer device name is given, PRN: is used.

## Running the VisiCalc Program

Once you have established your print and volume links, you can run VisiCalc or any other software application programs by entering the program name. First, insert the VisiCalc diskette in drive A: of your computer.

**A> VC80 ←** Runs the VisiCalc program.

Although the VisiCalc program is self-loading, you cannot run it by booting (inserting the diskette and pressing **CTRL-ALT-DEL**) since this cancels any existing links. (See Appendix C, Using Purchased Software, in the EtherShare User's Guide for information on running other programs with EtherPrint.)

## Printing a VisiCalc Report

Printing a VisiCalc report on a printer connected to a server is the same as using a printer connected to your own computer. First, load the report from the EtherShare volume.

**/S L** Selects the LOAD option of the VisiCalc STORAGE command.

Storage: File to Load  
**E:SALES ←** Loads the report SALES which is stored on the EtherShare volume VISIDATA linked to drive specifier E:.

Once the report you want to print has been loaded, position the cursor to the upper left cell or the portion of the worksheet you want to print.

**/P P** Selects the PRINTER option of the VisiCalc PRINT command.

At this point you can use any setup sequences you normally would, for example, compressed mode. However, you must be sure the printer to which you are linked supports them.

Move the cursor to the lower right cell of the worksheet or area of the worksheet you want to print and press **←** to print the report on the EtherPrint printer to which you are linked.

# Using EtherPrint

## Printing Multiple Pages

You can print several reports or one very large report by using the SETUP option of the VisiCalc program's PRINT command to force each report or section of a report to be printed on a new page.

Be sure the cursor is positioned in the top left cell of the worksheet or the portion of the worksheet that you want to print.

<b>/P P</b>	Selects the PRINTER option of the VisiCalc PRINT command.
<b>”</b>	Selects the SETUP option.
<b>^CL ←</b>	Sends a form feed to the printer before this worksheet is printed. You can follow this with any other setup sequences you normally use.

Move the cursor to the lower right corner of the worksheet or worksheet area you wish to print and press **←**. Repeat these steps for subsequent pages or other reports.

## Ending the Print Link

After you have finished using VisiCalc, you can end the print link with the EP UNLINK command.

<b>A&gt; EP UNLINK ←</b>	Initiates the EP UNLINK command.
<b>SHARE1 unlinked from PRN:</b>	Confirms that the print link has been ended.

## Hold Printing

Normally, EtherPrint prints anything you have sent to it whenever there is a break of 30 seconds or longer between print requests. If you want to save everything you have sent for printing so that it is all printed at one time, use the /HOLD parameter of the EP LINK command. This is useful when printing a series of small reports which you want to link together to be printed at one time.

The /HOLD parameter can be used only with the unprompted form of the EP LINK command. To use the unprompted form of the command, enter the command name and all parameters on the same line.

A> **EP LINK SHARE1 /HOLD** ←

Establishes a print link between PRN: (the default printer name) and the printer identified as 1 connected to server, SHARE1. The /HOLD parameter delays printing until you request it.

Now you can print as you normally would using DOS commands, the **PrtSc** key or from a program; however, nothing is printed until you end the print link.

A> **EP UNLINK** ←

Ends the link between the printer device name on your computer and the printer connected to a server.

Any files you have held for printing begin printing or are placed in a queue until the printer you have selected is available. This happens automatically; you don't have to do anything.



## SECTION 3

# EtherPrint Commands

---

## Overview

The EtherPrint commands let you use a printer connected to a 3COM Network Server or an IBM Personal Computer acting as an EtherPrint server. These commands give you the ability to:

- establish a link between your IBM Personal Computer and a printer connected to a server.
- end a link between your computer and a server
- list the printers connected to a server
- get information about the EtherPrint commands at any time

This section describes each command in detail. The format of the command is given, followed by a description of each parameter, additional remarks and examples. Further examples of some typical uses of EtherPrint are given in the Using EtherPrint section.

The EtherPrint commands are found on the EtherSeries/DOS Software Diskette or your fixed disk.

## Selecting Commands

You can select an EtherPrint command from a menu of command possibilities. Type EP to display the EtherPrint Command menu.

```
A> EP ←
```

```
EtherPrint N.N (c) Copyright 3Com Corp 1982
```

```
EtherPrint Commands:
```

- 1 - Link to a print server (LINK).
- 2 - Unlink from a print server (UNLINK).
- 3 - List printers supported by the server (DIR).
- 4 - Receive help (HELP).

```
Selection?
```

To select a command, type the number next to the command at the Selection? prompt and press ←. You are then prompted for all parameters necessary to complete the command.



## EtherPrint Commands

You can also select a command by simply typing the command name next to the DOS prompt, A>. For example:

```
A> EP LINK ←
```

EtherPrint commands follow the same format as EtherShare commands. Use the general description of the command format and format notation in the EtherShare Commands section of the EtherShare User's Guide for information about how to use the EtherPrint commands. This includes using the prompted and unprompted forms, default values, the /NP parameter and cancelling a command.

### EP DIR Command

Lists the printer(s) connected to a server.

#### Format

```
EP DIR [servername]
```

#### Parameters

<i>servername</i>	The name of the server whose printers you wish to list. If you do not give a server name, the name of the server to which you are logged in is used as the default value.
-------------------	---

#### Remarks

The EP DIR command lists the printers connected to a server. Two printers can be connected to each server. You can select printer 1 with the /1 parameter of the EP LINK command; /2 selects printer 2.

If you do not give a specific server name, the server to which you are logged in is used as the default value.

You can list the names of all servers on the network with the ES SDIR command.

# EP DIR Command

## Examples

### Prompted

```
A> EP DIR ? ←  
Server name?  
Printer(s) supported by the server:  
1 - DRAFT QUALITY
```

Lists the printer connected to the server to which you are logged in. This server has only one printer described by the name DRAFT QUALITY. This description is established when a printer which is connected to a server is installed and configured. DRAFT QUALITY is only one possibility. Printers that are placed in different geographical locations might be described in terms of the departments they serve, for example SALES or ADMINISTRATION.

```
A> EP DIR ? ←  
Server name? SHARE2  
Printer(s) supported by the server:  
1 - EPSON MX-100  
2 - DIABLO
```

Lists the printers connected to the server named SHARE2. You can specify printer 1 with the /1 parameter and printer 2 with the /2 parameter of the EP LINK command.

### Unprompted

```
A> EP DIR ←  
Printer(s) supported by the server:  
1 - DRAFT QUALITY
```

Lists the printer connected to the server to which you are logged in.

```
A> EP DIR SHARE3 ←  
Printer(s) supported by the server:  
1 - SALES  
2 - FINANCE
```

Lists the printers connected to the server named SHARE3.

## EP HELP Command

Provides information about the EtherPrint commands: EP LINK, EP UNLINK, EP DIR and EP HELP.

### Format

```
EP HELP [commandname]
```

### Parameters

*commandname* The EP command about which you want information.

### Remarks

The HELP information is displayed in levels. The first level lists the EtherPrint command choices and the second level gives the format and describes the parameters for each EP command. You can go directly to the second level by using the *commandname* parameter.

### Examples

```
A> EP HELP ←
```

Displays a list of the EtherPrint commands.

```
A> EP HELP LINK ←
```

Displays the command format and describes the parameters for the EP LINK command.

# EP LINK Command

## EP LINK Command

Establishes a link between your computer and a printer connected to a Network Server.

### Format

```
EP LINK [printer] [servername] /1 /2 [/HOLD] [/PLOT]
```

### Parameters

*printer* The printer device name you use to link to a server's printer. This name can be any device name DOS uses to identify printers: PRN: (also called LPT1:), LPT2: and LPT3:. If you do not give a printer name, the name PRN: is used as the default value.

*servername* The name used to identify the server to which the printer is connected. (Use the ES SDIR command to list the names of all servers in the network.) If you are already logged in to EtherShare, the server to which you are logged in is used as the default *servername*.

/1 Identifies the printer you want to use.  
/2 It can be either of two printers connected to a server.

/1 selects the printer identified as one;  
/2 selects the printer identified as two.

If you do not specify a printer, /1 is used as the default value.

<i>/HOLD</i>	Delays printing until the EtherPrint link is ended by using the EP UNLINK command, or a new EP LINK command is issued for this printer.
<i>/PLOT</i>	Same as <i>/HOLD</i> except that no banner is printed between print requests. Printing is delayed until another EP LINK or EP UNLINK occurs.

### Remarks

This command links your IBM Personal Computer to a printer connected to a Network Server. Once you have linked a printer device name to a remote printer, you can perform any normal printing function by referring to the printer name, for example, PRN:.

The EP LINK command can be used with the EtherPrint Server Software running on a 3Com Network Server or an IBM Personal Computer. In both cases, the printing capabilities are the same functions: print spooling and the choice between two printers.

If you are not logged in to an EtherShare Server, you are prompted for a user name. This does not log you in; rather it establishes the name which appears on the blank page which separates anything you print from the other users' printing.

Each server can have two printers connected to it. You identify which printer you want to use with the /1 or the /2 parameter. (Use the EP DIR command to list the printers connected to each server.)

## EP LINK Command

EtherPrint allows many PC users to be linked to the same EtherPrint printer at once. Each user's data is stored in a separate temporary file on the server's disk. When complete, the file is released for printing. Since only one file can actually be printed at a time, others are placed in a queue until the printer is free.

Normally printing begins approximately 30 seconds after the last print request has been completed. However, if the */HOLD* or */PLOT* option is specified, the print requests are appended to the temporary file until an *EP UNLINK* or another *EP LINK* command is issued. At this point, the temporary file is printed or queued for printing.

You can initiate printing in any of the following ways:

- use the *EP LINK* command again; this automatically closes the first link and reopens it a second time
- use the *EP UNLINK* command
- pause for 30 seconds between print requests except when */HOLD* or */PLOT* has been used
- log out from EtherShare
- Issue an *INT 17H* with *AH = 9* and the printer number (0, 1, 2) in *DX*.

If you send multiple PC files to be printed without ending the link or pausing for 30 seconds between each file, they are printed all at once without any page ejects or space between them. You can start new files at the top of a page by sending a *CTRL-L* (displayed as *^L* on your screen) to the printer between each file.

You can cause a temporary file to be queued for printing immediately by issuing on *INT 17H* after the file. This is not easily done using DOS commands; however, any program sending output to a printer can be instructed to issue on *INT 17H* through an assembly language subroutine. Set *AH = 9* and *DX = 0, 1, or 2*, depending on the printer that is linked.

EtherPrint provides one-way communication from your computer across the network to a shared device. For this reason, you cannot sense device status from a shared printer or plotter. Programs that must sense device status have to be used with plotters or printers connected directly to your computer.

## Examples

### Prompted

```
A> EP LINK ? ←  
Your printer id? LPT2: ←  
To whom? SHARE2 ←  
Your name? CAROLR ←  
SHARE2 linked to LPT2:
```

Links to a printer connected to the server named SHARE2. In this example you are prompted for a user name because you are not logged in to a server.

If you are already logged in to a server, you are not prompted for your name. Your user name is automatically used.

### Unprompted

```
A> EP LINK /HOLD ←  
SHARE1 linked to PRN:
```

Links to the printer connected to the server, SHARE1. Any further reference to PRN: prints to the printer attached to this server. PRN: is the default printer name; SHARE1 is the default server name because it is the server to which you are logged in. The /HOLD parameter causes printing to be delayed until the EP UNLINK command is used.

```
A> EP LINK /2 ←  
SHARE1 linked to PRN:
```

Links to printer 2 which is connected to the server, SHARE1. PRN: is the default printer name.

```
A> EP LINK SHARE2 ←  
SHARE2 linked to PRN:
```

Links to a printer connected to a server named SHARE2. Since no printer name or number is given, PRN: and 1 are used as default values.

```
A> EP LINK LPT1: SHARE2 /2 /PLOT  
SHARE2 linked to LPT1:
```

Links to a plotter or graphics printer designated as printer 2 connected to a server named SHARE2. The /PLOT parameter suppresses the banner and causes printing to be held until the EP UNLINK command is used.



## EP UNLINK Command

### EP UNLINK Command

Ends the link between your IBM Personal Computer and a printer connected to a server. Printing requests stored in a temporary file on the server are released to be printed.

#### Format

```
EP UNLINK [printer]
```

#### Parameters

*printer*

The printer device name you linked to with the EP LINK command. The printer name can be any device name that DOS uses to identify printers: PRN:, LPT1:, LPT2:, or LPT3:. If you do not give a printer device name, PRN: is used.

#### Remarks

This command ends a link between your personal computer and a printer connected to a server. (You can also unlink by logging out from EtherShare.)

If you use the */HOLD* or */PLOT* parameter when you establish a print link, you must unlink before your files are printed.

Files on a 3Com Network Server that are waiting to be printed, can be deleted or assigned a priority status. Files that are waiting to be printed on an IBM PC acting as an EtherPrint server can be deleted. (See the EtherPrint Administrator's Guide for further instructions.)

Remember that rebooting your system breaks all links to all servers.

## Examples

### Prompted

```
A> EP UNLINK ? ←  
Printer id? LPT1: ←  
SHARE1 unlinked from LPT1:
```

Ends the link between your IBM Personal Computer and a printer connected to the server, SHARE1.

### Unprompted

```
A> EP UNLINK ←  
SHARE1 unlinked from PRN:
```

Ends the link to the printer to which you are currently linked.

```
A> EP UNLINK LPT2: ←  
SHARE2 unlinked from LPT2:
```

Ends the link to the printer LPT2:

# EtherPrint Commands

## Command Summary

EP DIR [servername]

Lists the printer(s) connected to a server.

EP HELP [commandname]

Gives summary information about the EtherPrint commands.

EP LINK [printer] [servername] /1 [/HOLD] [/PLOT]  
/2

Establishes a link between your IBM personal computer and a printer connected to a server.

EP UNLINK [printer]

Ends the link between your IBM Personal Computer and a printer connected to a server.

# Appendix A

## Glossary

---

### Glossary

#### Boot

Resets your computer, loading new software from the diskette in drive A: or the fixed disk. Turning the power off and on is a hard boot; pressing **Ctrl-Alt-Del** is a soft boot. The ES BOOT command also causes a soft boot without ending existing links to EtherShare volumes or printers.

#### Drive Specifier

A single letter identifier followed by a colon to refer to your computer's diskette drive(s). On a two-drive system, the left drive is A: and the right drive is B:. With EtherShare, you can also use C: or D: to link to the EtherShare Network Server.

#### Ethernet

The DEC-INTEL-XEROX (DIX) standard network communications system, Version 1.0, September 30, 1980.

#### EtherPrint Server

An IBM Personal Computer or a 3Com Network Server which is attached to the network and is running the EtherPrint Server software. An EtherPrint Server can have one or two printers attached to it. You can send data to the printers connected to the server by linking to the server with the EP LINK command.

#### EtherSeries/DOS Software Diskette

A diskette containing a special version of the DOS operating system, and the EtherSeries software, used for booting your computer.

#### Log in

A procedure performed by using the ES LOGIN command that controls your ability to use (access) EtherShare. When you log in you give your EtherShare user name.

# **Glossary**

## **Network**

A collection of computers connected by a common coaxial cable, allowing communication and shared resources.

## **Network Server**

A computer in the network which manages all resources such as printers, and stores all EtherShare volumes thereby allowing you to share information and applications with other EtherShare users.

## **Remote Printer**

A printer which you can access through the EtherPrint server software. The printer is connected to the network through a Network Server or an IBM Personal Computer. The printer is not physically connected to your computer, but it is used as though it were.

## **Spool File**

A temporary file stored on the server which holds files that have been sent to the server to be printed. This temporary spool file holds the information until the printer to which it has been directed is available.

## **User Name**

The name you use to log in to EtherShare.

# Appendix B

## Error Messages

---

### Error Messages

EtherPrint error messages are displayed in the form of **\*\*\*Error message**. This appendix lists these messages alphabetically, explains the message and recommends recovery action.

<b>Error Message</b>	<b>Meaning/Action</b>
A value must be supplied.	A required parameter was omitted when requested. When you are prompted again, supply a value or use <b>Ctrl-Break</b> to cancel the command.
Address must be 12 hex digits.	An Ethernet address (using #123456789ABC notation) was supplied instead of a server name, but was not exactly 12 digits long. You must pad with zeros if necessary, and use exactly 12 hexadecimal digits.
Bad /HOLD option.	A /HOLD option was expected, but something else was supplied.
Bad character.	A user name or server name was expected and a character which is not legal in name was encountered. Names can be up to eight characters long (letters, digits and some special characters).
Bad printer number; value must be 1 or 2.	An attempt was made to select a remote printer other than /1 or /2.
Cannot use a printer name.	An attempt was made to use a printer name (PRN:, LPT1:, LPT2:, LPT3:) where a user or server name was expected. Supply your user name or the name of the PC server you want to use.
Enter only one value.	When prompted for a value, more than one word was entered, that is, a separator appeared in the middle of the value. Enter only one word in response to this prompt.

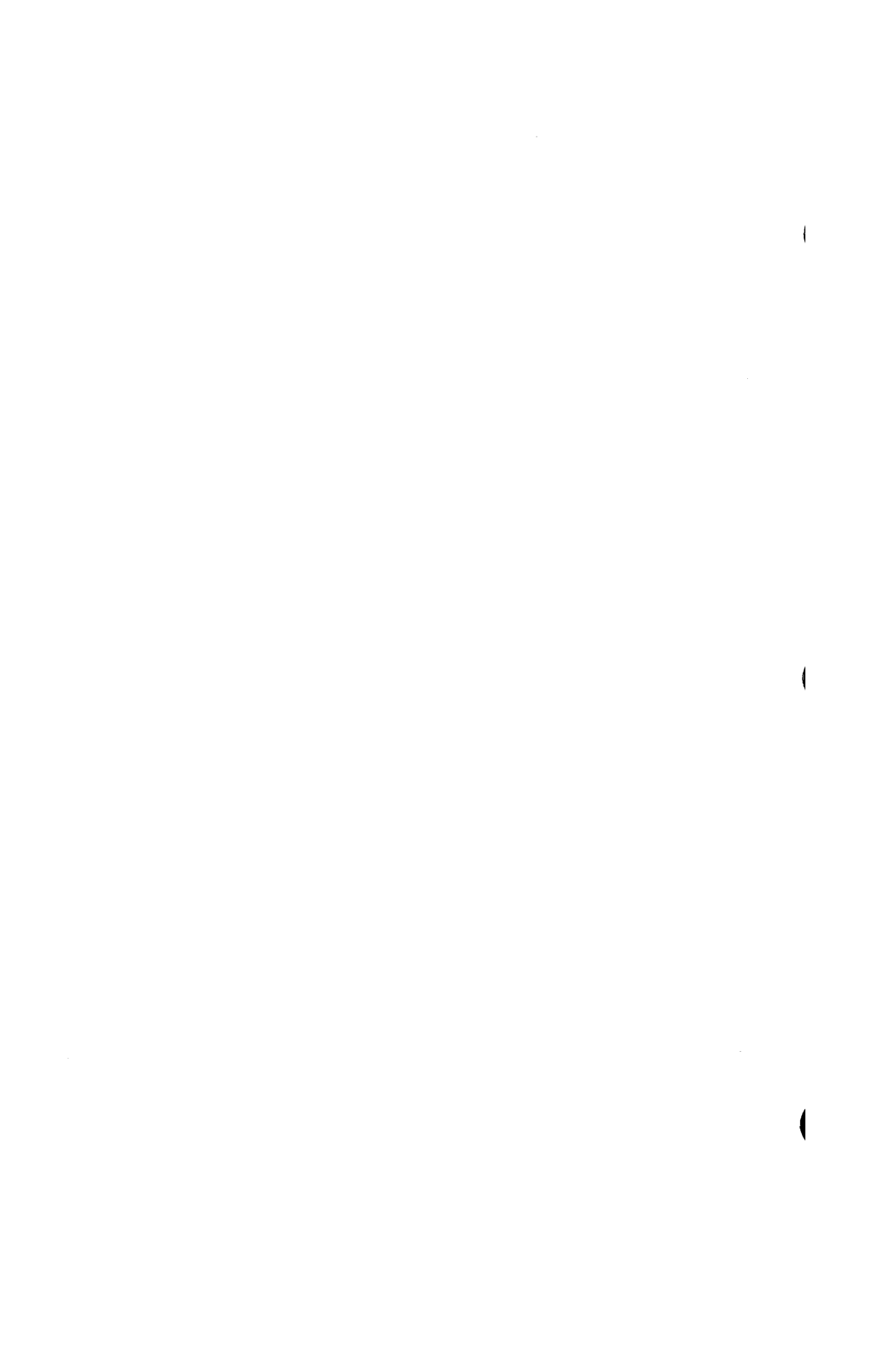
## Error Message

Error Message	Meaning/Action
Ethernet driver not loaded.	The system was booted from a diskette that did not contain the EtherPrint software. You must reboot from the EtherSeries/DOS diskette before using any EtherPrint commands.
Hexadecimal value required.	An attempt was made to specify an Ethernet address (using #123456789ABC notation) in place of a server name. This address contained a non-hexadecimal digit. Use only digits 0-9 and letters A-F.
Link unexpectedly broken.	A print server received an EP UNLINK command when there was no printer linked. This could happen by interrupting and restarting a PC server using <b>Ctrl-Break</b> , or restarting an EtherShare printer server by reinstalling or reconfiguring.
Max of 4 characters.	The printer name is too long. Enter PRN, LPT1, LPT2 or LPT3, optionally followed by a colon.
Max of 8 characters.	A user or server name longer than eight characters was used. Enter a name up to eight characters long.
Maximum users using EtherPrint.	Too many users attempted to print on an EtherShare at once. Try again later.
Must supply server name when not logged in to EtherShare.	The EP LINK command (without a servername parameter) was used while not logged in to EtherShare. If you are not logged in, you must supply a server name.
No parameters for this command.	Parameters were supplied for a command that has none.

## Error Message

<b>Error Message</b>	<b>Meaning/Action</b>
Out of paper.	When connected to an EtherShare printer, this message has three possible meanings: something is wrong with the spool file, the EtherShare hard disk is full, or EtherPrint has been reconfigured while you are linked.
Printer access failed.	Indicates that the spool file could not be created on an Ether Share. This may be caused by running out of disk space on the EtherShare.
Printer not available.	An attempt was made to link to a server with insufficient printing resources. Try again later.
Printer not linked.	An attempt was made to unlink a printer that was not linked.
Printer not supported.	An attempt was made to link to printer /2 on a server that supports only one printer.
Selection must be 1-N.	An attempt was made to select a menu item outside the range of menu items displayed.
Unknown command.	The command name following EP is not a recognized keyword. Type EP HELP to display available commands.
Unlinked anyway.	When EP UNLINK was entered, there was a problem with the server. The message indicates that the link was ended in spite of this problem.
Value must be /1 or /2.	A printer selection was expected. Enter /1 or /2.
Value must be PRN, LPT1, LPT2 or LPT3.	A printer name was expected. Enter PRN, LPT1, LPT2 or LPT3 optionally followed by a colon.
Values ignored from XXX.	Too many parameters were supplied for this command. XXX and any following values were ignored.





# Index

---

## A

Alternate printers, selecting, 2-5

## B

BASIC Print Program, 2-4

Boot, definition, A-1

## C

Commands

EP DIR,  
reference, 3-3  
using, 2-5

EP HELP  
reference, 3-5

EP LINK  
reference, 3-6  
using, 2-2, 2-5, 2-9

EP UNLINK  
reference, 3-10  
using, 2-8, 2-9

## D

Default values, 2-2

DOS Commands  
COPY command, 2-3

Drive Specifier  
definition, A-1

## E

Ending the Print Link, 2-8

EP DIR Command  
reference, 3-3  
using, 2-5

EP HELP Command  
reference, 3-5

EP LINK Command  
reference, 3-6  
using, 2-2, 2-5, 2-9

EP UNLINK Command  
reference, 3-10  
using, 2-8, 2-9

Ethernet, definition, A-1

EtherPrint  
commands, 1-2, 3-1  
features, 1-2  
overview, 1-1  
using, 2-1

EtherPrint Printer  
EtherPrint commands, 3-1  
establishing a link, 2-3  
printing a VisiCalc report, 3-1

EtherSeries/DOS Software Diskette  
definition, A-1  
using, 2-2, 2-4

EtherShare Volumes  
printing, 2-3  
using purchased software, 2-6

Error Messages, B-1

Establishing a Print Link, 2-2

Establishing Links to EtherShare  
Volumes, 2-6

## F

Fixed Disk  
default drive, 2-2

## G

Glossary, A-1

## H

Help, 3-5

Hold Printing, 2-9  
/HOLD parameter, 3-7

# Index

## L

Linking to a Printer, 2-2  
Log in, definition, A-1

## N

Network, definition, A-2  
Network Server  
    definition, A-2  
    overview, 1-1

## P

Print Link  
    ending, 2-8  
    establishing, 2-2  
    overview, 2-1  
Printing a File, 2-3  
Printing a VisiCalc Report, 2-7  
Printing to a Plotter  
    EP LINK command, 3-6  
    /PLOT parameter, 3-7

## Q

Queued Printing, 1-2

## R

Remote Printer  
    definition, A-2  
Running the VisiCalc Program, 2-7

## S

Selecting an Alternate  
    Printer, 2-5  
Self-loading software, 2-7  
Server  
    Network Server, A-1, 1-1  
Spool file  
    definition, A-2  
    overview, 2-1  
Summary of Commands, 3-12

## U

Unlink a Printer  
    EP UNLINK command, 3-10  
    Using EP UNLINK, 2-8, 2-9  
Using EtherPrint, 2-1  
User Name, definition, A-2  
Using Purchased Software, 2-6  
Using the EtherPrint User's Guide, 1-3

## V

VisiCalc  
    overview, 2-1  
    linking to a report, 2-6  
    printing a report, 2-7  
    printing multiple pages 2-8  
    running VisiCalc, 2-7

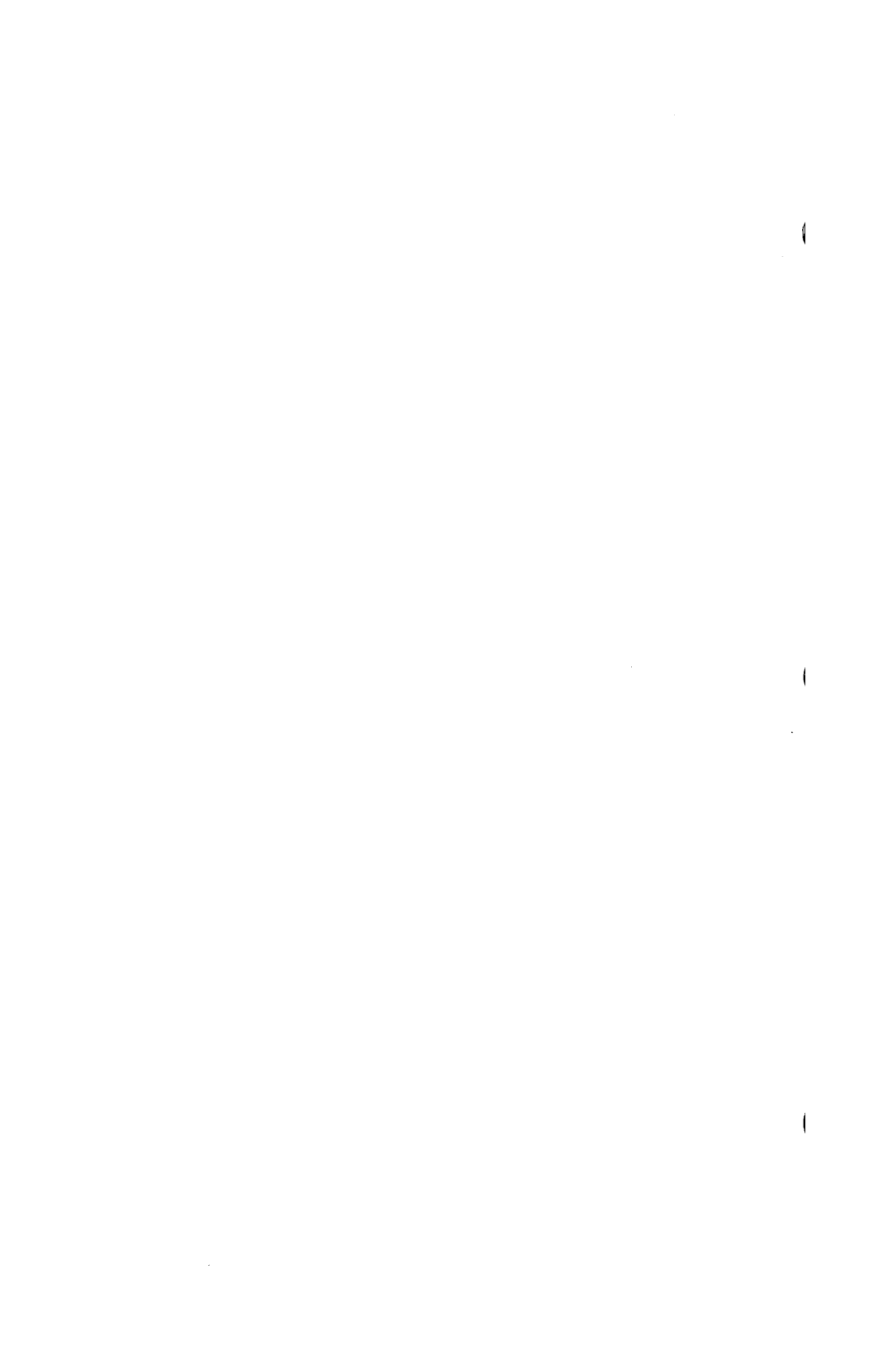
# **EtherMail User's Guide**

Software by: Lynn Welge  
Mike Bonnain

User's Guide by: Joan Lasselle  
Carol Ramsay

Version 2.0 July 1983

Copyright © 1982, 1983, 1984 by 3Com Corporation  
1365 Shorebird Way  
P.O. Box 7390  
Mountain View, California 94039  
USA



# Contents

---

## Section 1—Introduction

Overview .....	1-1
Features .....	1-1
Requirements .....	1-2
Using this Manual .....	1-2

## Section 2—Concepts and Terminology

Overview .....	2-1
EtherMail .....	2-1
Network Server .....	2-1
Logging in .....	2-2
User Names .....	2-2
Mail Folder .....	2-2
Distribution Lists .....	2-2
EtherMail Displays .....	2-2
Attachments .....	2-4
The Message Editor .....	2-4
Batch Files .....	2-5

## Section 3—Getting Started

Overview .....	3-1
Running EtherMail .....	3-1
Main Display .....	3-2
Folder Contents .....	3-3
Status Line .....	3-3
Getting Help .....	3-3
Getting New Mail .....	3-4
Selecting a Message .....	3-5
Reading a Message .....	3-6
Reading the Next Message .....	3-6
Returning to the Main Display .....	3-7
Leaving EtherMail .....	3-7

# Contents

## Section 4—Sending a Message

Overview .....	4-1
Composing a New Message .....	4-1
Message Header .....	4-1
The New Message Header .....	4-2
Entering Message Text .....	4-4
Leaving the Message Editor .....	4-5
Sending a Message .....	4-6
Replying to a Message .....	4-8
Reply Message Header .....	4-8
Forwarding a Message .....	4-10
Forward Message Header .....	4-10
Additional Message Text .....	4-11

## Section 5—Your Mail Folder

Overview .....	5-1
Printing a Message .....	5-1
Deleting a Message .....	5-2
Saving a Message in Progress .....	5-2
Editing a Message in Progress .....	5-3
Filing a Message or Attachment .....	5-4
Classifying Your Messages .....	5-6

## Section 6—The Message Editor

Overview .....	6-1
Using the Editor with EtherMail .....	6-1
Function Keys .....	6-3
Entering Text .....	6-4
Word Wrap .....	6-4
Wrap Point .....	6-5
Backspace .....	6-5
Margins .....	6-6
Tabs .....	6-6

<b>Editing Text</b> .....	6-7
Positioning the Cursor .....	6-7
Inserting Text .....	6-9
Deleting a Character .....	6-9
Deleting a Word .....	6-10
Replacing Text .....	6-11
Deleting a Line .....	6-12
Deleting to the End of a Line .....	6-13
Filling Text .....	6-14
Inserting Blank Lines .....	6-14
Splitting Lines and Paragraphs .....	6-15
Joining Lines and Paragraphs .....	6-16
TYPE-OVER .....	6-17
<b>Block Operations</b> .....	6-19
Marking Text .....	6-19
Copying Text .....	6-20
Moving Text .....	6-21
Deleting Text .....	6-22
Moving or Copying Indented Text .....	6-23
<b>Running the Editor as a Separate Program</b> .....	6-24
Running the Editor .....	6-24
Leaving the Editor .....	6-25
Saving the File .....	6-25

## **Section 7—Distribution Lists**

<b>Overview</b> .....	7-1
<b>Using a Distribution List</b> .....	7-1
Sending a Distribution Message .....	7-2
<b>Creating a Distribution List</b> .....	7-2
Running the Editor .....	7-2
Entering Names .....	7-3
Leaving the Editor .....	7-3
Saving the File .....	7-3
<b>Editing a Distribution List</b> .....	7-4



# Contents

## Appendices

### Appendix A—The EtherMail Program

Running the Mail Program .....	A-1
--------------------------------	-----

### Appendix B—EtherMail Batch Files

Diskette Drives .....	B-1
Batch File Descriptions .....	B-1
The EXECMAIL Batch File .....	B-2
The LOGIN Batch File .....	B-4
The NEWINBOX Batch File .....	B-5
The RENUMBER Batch File .....	
The RUNMAIL Batch File .....	B-6
Making Your Own Batch File .....	B-7

### Appendix C—Error Messages

## List of Figures

### Section 2

The Network Server Post Office .....	2-1
An EtherMail Display .....	2-3
Function Keys .....	2-4

### Section 3

The Main Display .....	3-2
Getting New Mail .....	3-4
Selecting a Message .....	3-5
Reading a Message .....	3-6

### Section 4

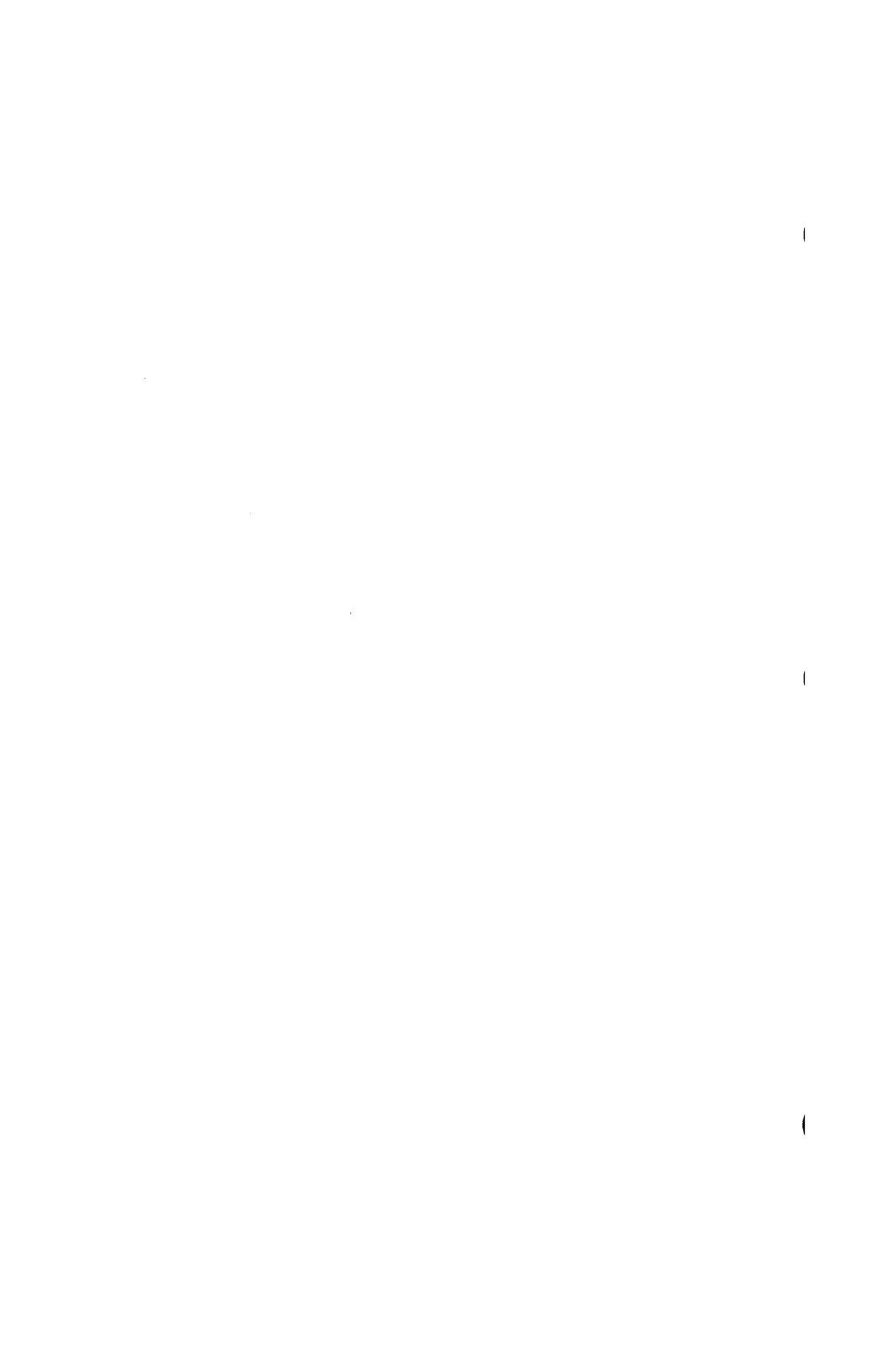
Composing a New Message .....	4-3
Entering Message Text .....	4-5
Replying to a Message .....	4-9
Forwarding a Message .....	4-11

### Section 5

In Progress Message .....	5-3
Classifying Messages .....	5-6

### Section 6

EtherMail Message Editor Display .....	6-1
The Backspace Key .....	6-5
Cursor Positioning Keys .....	6-7
The Ins Key .....	6-17
The Message Editor Display .....	6-24



## SECTION 1

# Introduction

---

## Overview

EtherMail is an electronic mail system for IBM Personal Computers that have access to a network server in an Ethernet network. It allows you to exchange electronic messages with other users in the network, facilitating communications and greatly reducing the time and effort involved in composing, copying and distributing memos on paper.

Once you have entered a message, EtherMail takes care of sending it to your addressees. It is distributed immediately so that recipients find your message waiting the next time they check their mailbox. You can also create distribution lists which allow you to send a message to many people by simply giving the name of the list.

## Features

The EtherMail program provides interactive display screens which allow you to choose the operations you want to perform. From these displays you can:

- Get your new mail
- Read a message
- Compose a new message
- Reply to a message
- Forward a copy of a message
- Send a message
- File a message
- Print a message
- Save a message in progress
- Delete a message

On all displays, a Help key is available to provide you with information about the current operation.

A screen-oriented message editor allows you to enter and edit the text of a message. The message editor can be used independently of EtherMail to create distribution lists, documents, programs, batch files and other text-related files.

You can also attach DOS files (for example, text, program or data files) to an EtherMail message. These attachment files are delivered to all addressees along with the message.

# Introduction

## Requirements

To use EtherMail, you need:

- An IBM Personal Computer with at least 192K of memory, at least one diskette drive, and an 80 character color or monochrome display.
- An EtherLink card installed in your computer and connected to the network.
- A network server installed on your network.
- An EtherShare user name so that you can log in to the network server.
- The EtherSeries/DOS diskette (including the LOGIN batch file).

## Using this Manual

Section 2 explains some concepts and terminology with which you should become familiar before using EtherMail.

Sections 3 through 5 give step-by-step instructions on using all of EtherMail's features. This includes a brief introduction to the message editor.

Section 6 describes all functions of the message editor and gives examples of entering and editing text.

Section 7 shows you how to use distribution lists with an EtherMail message and how to create and edit a distribution list.

Appendix A explains the structure of the EtherMail program and the format of the MAIL command.

Appendix B describes the EXECMAIL, LOGIN, NEWINBOX, RENUMBER and RUNMAIL batch files.

Appendix C lists the EtherMail error messages.

This user's guide assumes an operating environment for EtherMail that takes full advantage of the network server, both for sending and receiving mail and for storing mail messages on EtherShare volumes after you have received them. The examples given depend on this use of EtherMail with EtherShare volumes. If you are familiar with DOS and EtherShare, you have considerable flexibility in your operating environment and can modify batch files and command parameters for your specific needs.

## SECTION 2

# Concepts & Terminology

---

## Overview

This section describes some basic concepts and procedures which you should understand before using EtherMail.

## EtherMail

The EtherMail program is divided into two parts: one part runs on your personal computer and is used for composing, sending, receiving, and reading electronic messages. The other part runs on the Network Server which acts as a “post office” for your EtherMail.

## Network Server

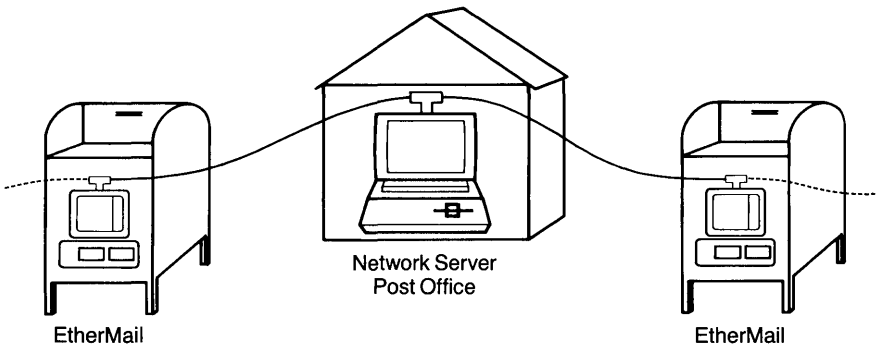


Figure 2-1. The Network Server Post Office

The EtherMail software on the network server has two functions:

- It accepts the messages you send. If there are multiple servers in your network, each one is responsible for its own users. Since this is automatic, there's no need for you to worry about who uses which server.
- It accepts messages addressed to you and holds them at the post office until you ask to have them transferred to your personal mail folder where they are stored and are available for reading.

# Concepts & Terminology

## Logging in

Before you can send and receive messages, you must log in to your network server. This is the process of identifying yourself to EtherShare with your user name.

## User Names

You must supply your user name when you log in. EtherMail messages sent to you are addressed to your user name which uniquely identifies you on the network. EtherMail uses this name to collect messages directed to you. When you send a message, you must provide the EtherShare user names of your addressees.

## Mail Folder

Each time you run the EtherMail program, you are told if you have new mail waiting at your EtherMail post office. You can then transfer this mail to your personal mail folder which stores the messages you have received. Each message is stored in a DOS file and your folder is the EtherShare volume or diskette where these files are kept. You can read the messages in this folder at any time.

## Distribution Lists

Distribution lists are lists of EtherShare user names to whom you frequently send messages. Instead of entering the same names on the messages you send, you can compile these names into a list and supply the name of the list instead. A distribution list name can be used as an addressee anywhere that a user name is appropriate. Distribution lists are stored in DOS files and are created and maintained using the EtherMail message editor.

## EtherMail Displays

EtherMail uses display screens which provide information and allow you to perform different operations. You communicate with the EtherMail program through the function keys on your IBM Personal Computer. An example of an EtherMail display is shown in figure 2-2.

## Concepts & Terminology

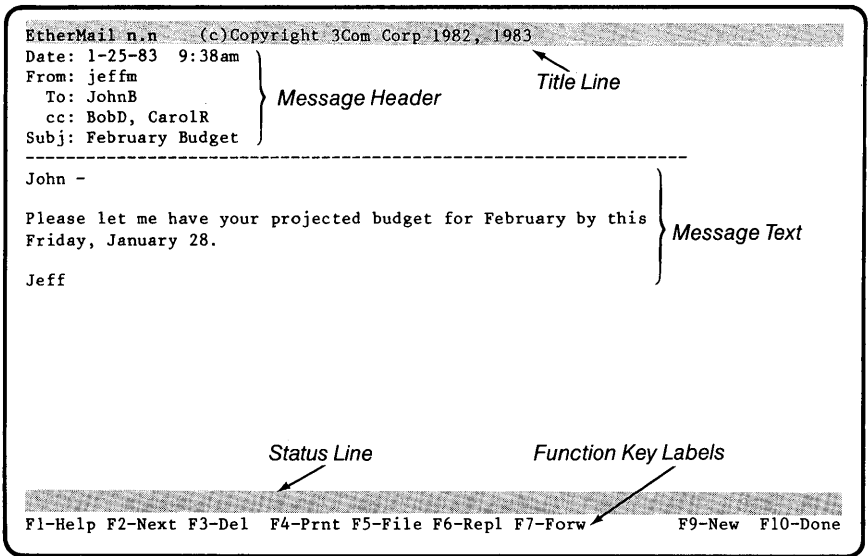


Figure 2-2. An EtherMail Display

**The Title Line** tells you the version number of EtherMail and gives copyright information.

**The Message Header** is divided into several fields (Date: From: To: cc: and Subj:). This tells you the date and time the message was sent, the sender and addressees, and the subject of the message. If there is an attachment to a message, an Attach: field is also shown, giving the file name of the attachment.

**The Message Text** is entered with EtherMail's message editor.

**The Status Line** displays information to you. It reports errors, indicates activity and provides instructions and information. For example, when you run EtherMail, the status line tells you if you have new mail waiting to be delivered.

The status line tells you when EtherMail is busy carrying out your instructions by flashing a message such as **\*\*\* Busy ... please wait \*\*\***. When EtherMail is ready to continue, the message stops flashing.



# Concepts & Terminology

**The Function Key Labels** allow you to select an operation by pressing a function key on the left of your keyboard.

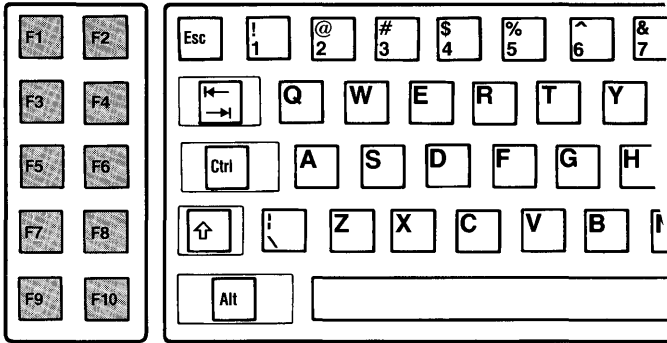


Figure 2-3. Function Keys

For example, if you want to print the message, you press function key **F4** on the keyboard; to reply to the message, press **F6** and so forth. On all displays, **F1** provides help with the current functions.

## Attachments

You can attach any DOS file (for example, text, program or data files) and send it along with an EtherMail message. To do this, enter the file name when prompted for the Attach: field in the message header. You can attach as many as 26 files to any EtherMail message.

## The Message Editor

The message editor is used to enter the text of a message and provides simple text entry and many useful editing features. You use the message editor when you compose a new message, reply to a message, or forward a copy of a message.

You can also run the message editor as a separate program, independent of EtherMail, to create and edit distribution lists and text files.

The message editor is described in Section 6 and distribution lists in Section 7.

### Batch Files

A batch file is a text file containing a set of commands that perform a specific operation. By using a batch file, you can initiate several commands by providing the name of the file instead of entering each individual command. The batch files you will use with EtherMail log you in to EtherShare, create a new mail folder, run the Mail program and renumber your messages. These are fully described in Appendix B.



## SECTION 3

# Getting Started

---

## Overview

This section explains running the Mail program using the LOGIN, NEWINBOX and RUNMAIL batch files. The first time you use EtherMail, you will need a new mail folder and must use all three commands. If you have already created a mail folder, you can omit the NEWINBOX command.

The EtherMail main display is then described, followed by the procedures for getting your new mail and reading a message.

Before you begin, be sure you have booted your system with the EtherSeries/DOS diskette. If you have a fixed disk, be sure you have booted from it. In the following examples, your prompt will be C> instead of A> and you will be running the commands from your fixed disk. Refer to the EtherSeries and EtherShare User's Guides for further information.

## Running EtherMail

1. Before you can send or receive messages, you must log in to the server with your EtherShare user name. If you don't have a user name, ask another EtherShare user to create one for you.

Type the LOGIN command followed by your user name. For example:

```
A> LOGIN FREDJ ←
```

LOGIN is a batch file which includes commands that are used in preparation for running the Mail program.

2. If you are using EtherMail for the first time, you must now create a mail folder which will be used to store the messages you receive. Otherwise, omit this step.

Type:

```
D> NEWINBOX ←
```

This command file creates and formats a new volume which will be used as your mail folder.

Some messages are displayed to tell you that the INBOX volume has been created and formatted, then the D> prompt is displayed again.

# Getting Started

3. You can now run the EtherMail program by typing:

```
D> RUNMAIL ←↵
```

4. If you are using a new mail folder, you are asked:

```
*** Drive E: does not contain a mail directory.  
Create one (Y/N)?
```

Type Y and press ←↵. EtherMail now creates a directory which it will use to keep track of messages sent to you.

After you run EtherMail, the main display is shown on your screen.

## Main Display

This lists all messages currently in your folder and provides information about each one.

If you have more messages than fit on one screen, use the **PgUp** and **PgDn** keys to see the entire display.

Figure 3-1 illustrates a folder which already contains mail. If your folder is empty, this display will be blank.

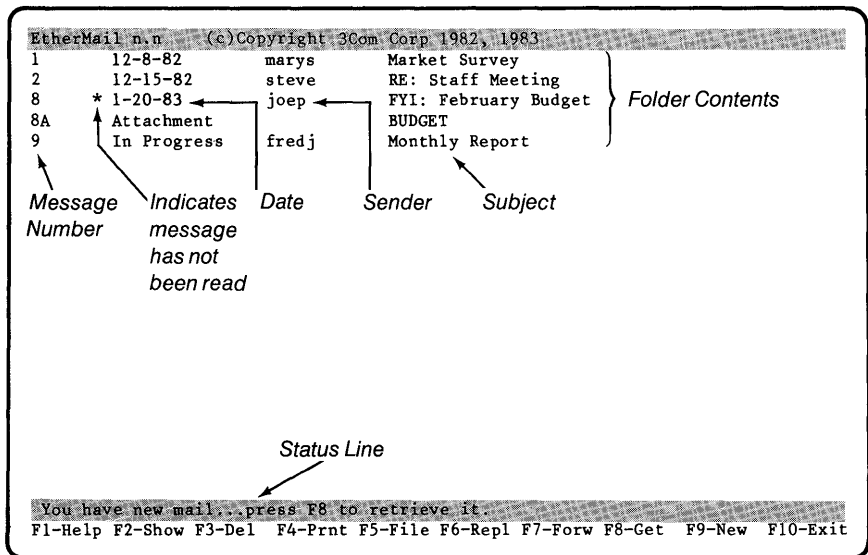


Figure 3-1. The Main Display

## Folder Contents

This display lists all the messages currently in your folder. For each message, the following information is given:

**Message number:** this number is for identification and is assigned by EtherMail to each message received.

**Date:** the date the message was sent. An asterisk before the date indicates that you have not read the message.

**Sender:** the user name of the person who sent the message.

**Subject:** the subject of the message. RE: before the subject indicates that this is a reply to a message of the same subject. FYI: indicates that a copy of a message has been forwarded for your information.

**In Progress:** indicates that you have temporarily saved this message in your folder before sending it. This is the only case when an unsent message appears on this display; all other messages have been sent to you.

**Attachment:** a letter after the message number indicates that this is an attachment to the message (for example, 8A is an attachment to message number 8). Any DOS file can be attached and sent with a message.

## Status Line

When you first run EtherMail, the status line indicates either “You have new mail” or “No new mail”. This only tells you whether or not you have new mail waiting on the network server to be delivered. To transfer the mail to your folder, you must press **F8** to retrieve it. Watch the status line for instructions or error messages when you are using EtherMail.

## Getting Help

On all EtherMail displays, the **F1** key is labeled Help. Press this key at any time to display information on how to use the current functions. After displaying the help information, press any key to return to EtherMail.

# Getting Started

## Getting New Mail

When you first run EtherMail, the status line on the main display tells you if the network server has new mail for you. Before you can read a new message, you must first transfer the mail from EtherShare to your folder.

Press **F8** (Get) to get your new mail. The status line flashes "Retrieving next message ..." and the display is updated as each message is retrieved. When the mail has been transferred, the status line displays "Message(s) retrieved". You are only told if you have new mail when you first run EtherMail. However, **F8** (Get) can be used at any time to check the network server for new mail and transfer it to your folder. If you press **F8** at a time when you have no new mail, the status line displays a message to this effect.

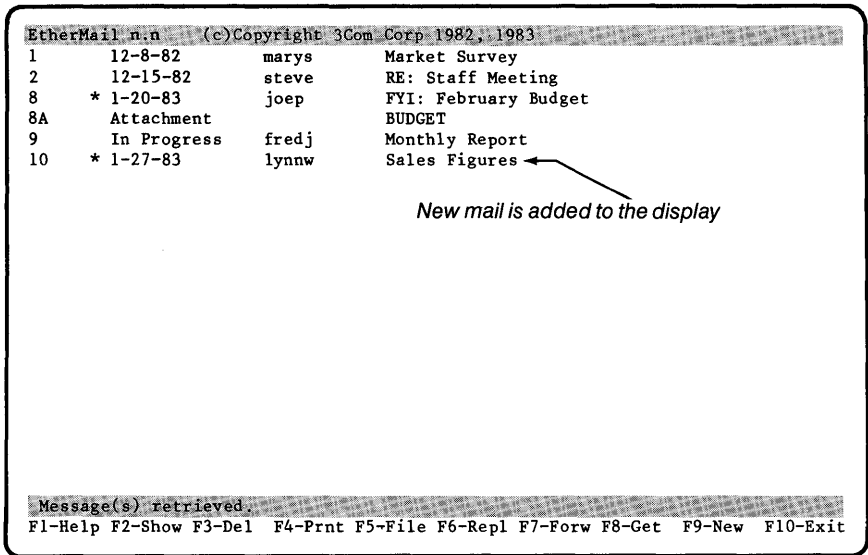


Figure 3-2. Getting New Mail

## Selecting a Message

To select a message from the main display, use the  $\uparrow$  or  $\downarrow$  key to position the cursor to the appropriate message. The cursor is the underscore shown below one of the message numbers.

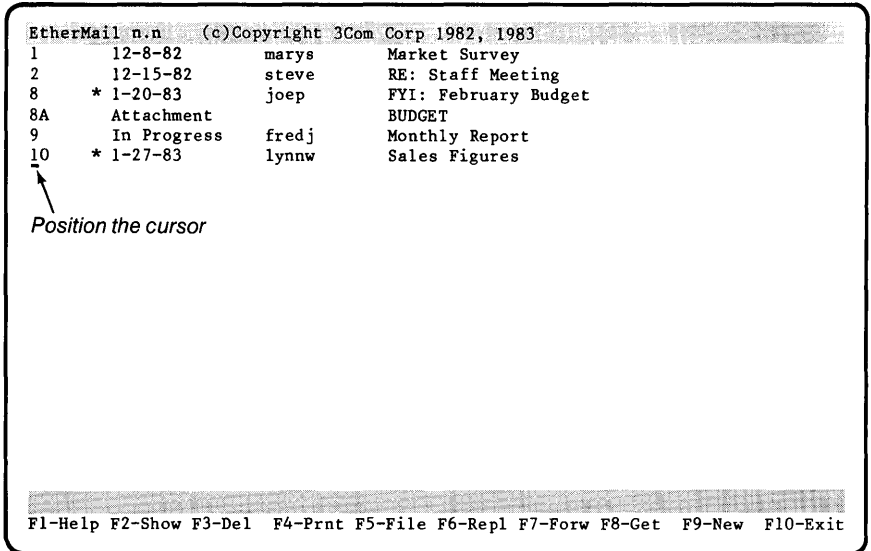


Figure 3-3. Selecting a Message

When you have selected a message, you can show, delete, print, file, forward, or reply to it.



# Getting Started

## Reading a Message

To show the text of a message on your screen:

1. Use the arrow keys (  $\uparrow\downarrow$  ) to position the cursor to the message you want to read.
2. Press **F2** (Show). "Reading..." flashes briefly in the status line, then the text of the message is shown on your screen.

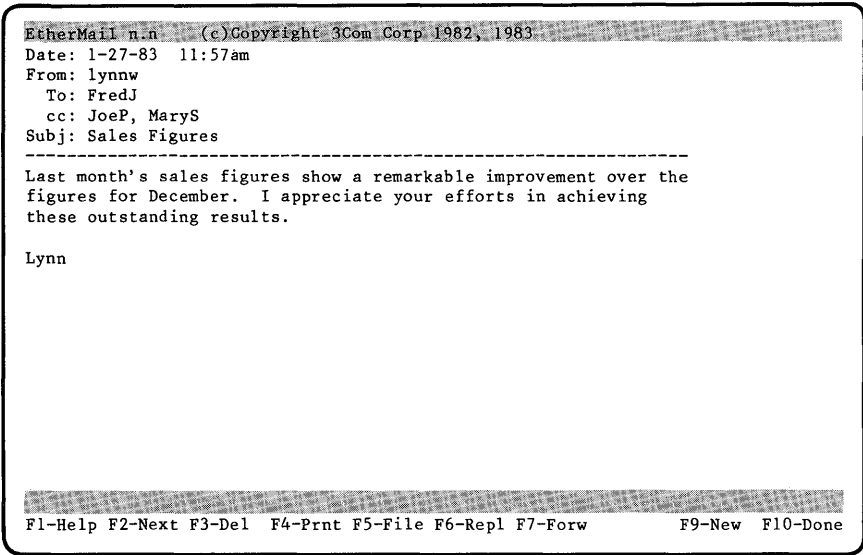


Figure 3-4. Reading a Message

When you have read the message, you can delete, print, file, reply to, or forward a copy of it. After a message has been read, the asterisk (\*) is removed from its listing on the main display.

## Reading the Next Message

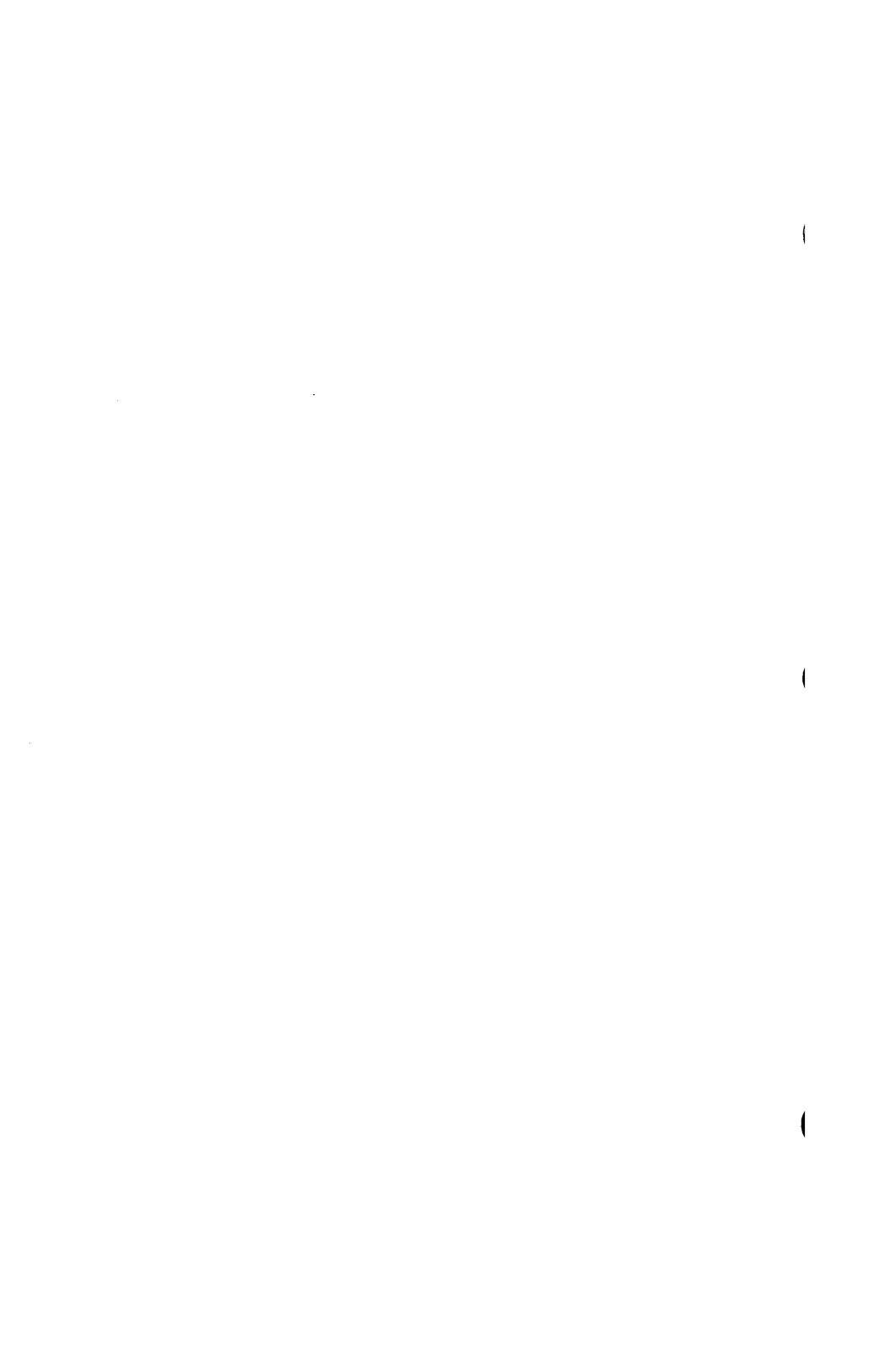
To read the next message in your folder, press **F2** (Next) to display the message on your screen. If you press **F2** after reading the last message, you are told that there is "No next message".

### Returning to the Main Display

Press **F10** (Done) when you want to return to the main display from another EtherMail display. **F10** always takes you back to the main display except when you are using the editor to enter the text of a message.

### Leaving EtherMail

Press **F10** (Exit) on the main display when you want to leave the EtherMail program and return to DOS.



## SECTION 4

# Sending a Message

---

## Overview

There are three occasions when you will send a message:

- Composing a new message
- Replying to a message
- Forwarding a copy of a message

The sending procedure is the same in each case, but the message header and text that you supply varies.

This section shows you how to compose and send a new message, including filling in the header and entering simple text with the message editor. The variations for replying to and forwarding a message are then described.

## Composing a New Message

Press **F9** (New) to specify that you want to create a new message. You are first prompted for the message header and then enter the text of the message using the message editor.

## Message Header

Message headers contain mailing information about the message. EtherMail fills in some fields for you and prompts you for others, depending on the type of message you are sending. To omit an optional field, press **←** when you are prompted for it and the field will not appear in the message. If you need to enter more than one line of information in a field, end the line with a comma or semicolon and press **←** to start a second line for the same field.

When you are entering the header information, you can correct a typing mistake by using the **Backspace** key ( **←** ) to go back and retype from the point of the error. To erase the entire line and start over, press the **Esc** key. Pressing **Esc** again aborts this message and returns you to the main display. If you want to modify the header after you have entered it, refer to Editing Text in Section 6.

# Sending a Message

## The New Message Header

The From: field is already filled in with your user name and the cursor is first positioned at the To: field.

```
EtherMail n.n (c)Copyright 3Com Corp 1982, 1983
From: fredj
To: _
```

The To: field is required. Enter the user names of your addressees here. If you enter more than one name, separate them with a comma (,) or semicolon (;). You can also enter distribution list names here. When you have entered these names, press **←** and you are prompted for the cc: field.

```
EtherMail n.n (c)Copyright 3Com Corp 1982, 1983
From: fredj
To: JoanL
cc: _
```

The cc: field is optional. To use it, follow the steps for filling in the To: field. You can send a copy of the message to yourself by entering your user name here. Enter these names and press **←**. You are then prompted for the Subj: field.

```
EtherMail n.n (c)Copyright 3Com Corp 1982, 1983
From: fredj
To: JoanL
cc: BillK, SteveP
Subj: _
```

The Subj: field is optional. Enter the subject of the message here and press **←**. You are then prompted for the Attach: field.

```
EtherMail n.n (c)Copyright 3Com Corp 1982, 1983
From: fredj
To: JoanL
cc: BillK, SteveP
Subj: Monthly Report
Attach: _
```

## Sending a Message

The Attach: field is optional. Enter the name(s) of the DOS file(s) you want to attach here and press **←**. You can attach up to 26 files to a message by separating the file names with a comma (,) or semicolon(;). Be sure to include the drive specifier, file extension and pathname if necessary.

This completes the message header. The status line flashes **\*\*\* Busy ... please wait \*\*\*** for a moment, then the cursor moves below the header where you can enter the text of the message.

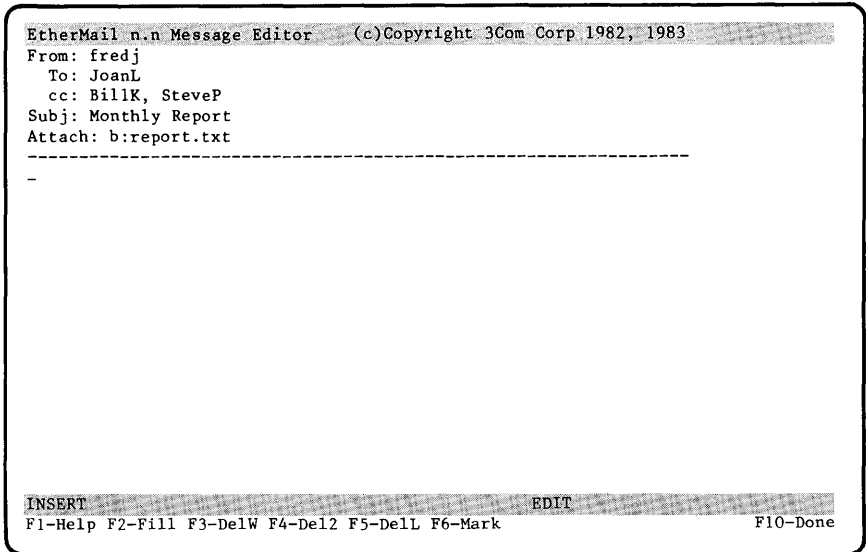


Figure 4-1. Composing a New Message

The function keys on this display are the message editor function keys which allow you to revise the text of your message.

# Sending a Message

## Entering Message Text

You type the message text just as you would on a typewriter, except that the message editor makes it easier.

Simple text entry and correction are described here. The message editor offers many other useful editing features which are described in detail in Section 6.

1. Since the editor provides automatic word wrap, do not end each line with the **Enter** key. When you reach the right margin, words that would normally go beyond the margin are wrapped around to the next line. This means you can type your message quickly and easily without worrying about where the lines should end.
2. If you inadvertently break a line with the **Enter** key, press the **Backspace** key ( **←** ) to erase the keystroke.
3. If you make a typing mistake, back up with the **Backspace** key ( **←** ) and correct the error. Since backspacing deletes characters, retype the text from the point of the correction. More advanced text revision is described in Section 6.
4. To end a paragraph and start a new one, press the **Enter** key twice. This creates a deliberate line ending and leaves a blank line between paragraphs.

Figure 4-2 shows an example of entering message text.

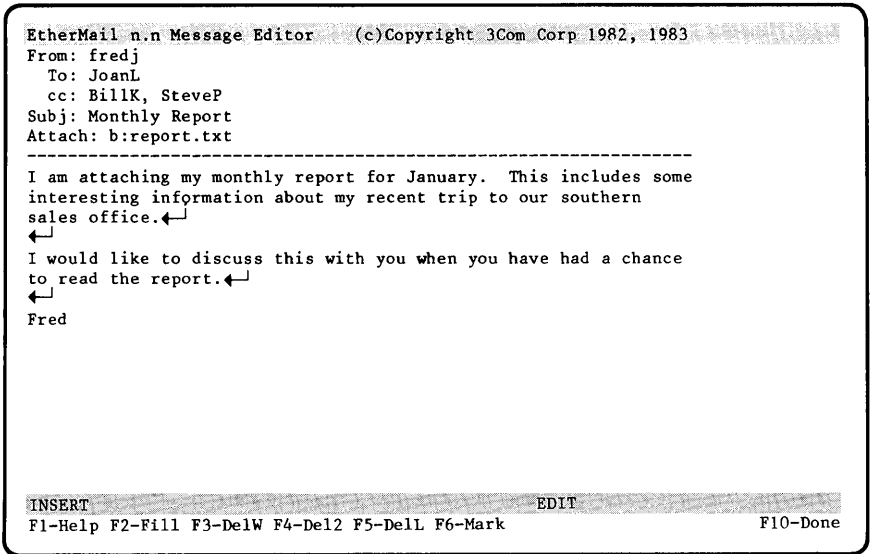
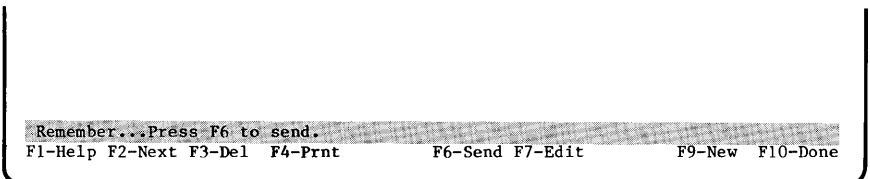


Figure 4-2. Entering Message Text

## Leaving the Message Editor

When you have entered the message text, press **F10** (Done) to leave the editor. The message **\*\*\* Busy... please wait \*\*\*** flashes in the status line, then the function keys change to allow you to print, send or edit the message.





## Sending a Message

### Sending a Message

Whether you have composed a new message, or are replying to or forwarding an existing message, the sending operation is the same.

Press **F6** (Send). The messages "Checking ..." and "Sending message..." flash in the status line as EtherMail locates all the users in the To: and cc: fields of the message header. When the message has been sent to all addressees, the status line displays "Message sent" and you are returned to the main display.

Once a message has been sent, you can no longer access it for printing or further editing. If you want to keep a copy of the message, be sure to include your user name in the cc: list.

There are two cases when a message is not sent:

1. If you have not filled in the header correctly, the status line displays an error message telling you what is wrong. You should then press **F7** (Edit) to return to the editor and correct the problem. You *cannot* make a change to the message until you return to the editor by pressing **F7**.
2. If any of the user names in the To: or cc: field are spelled incorrectly, are not valid user names, or are users on a network server that is not responding, a list of the unlocated user names and unresponsive servers (if any) is displayed. For example:

```
*** Server(s) not responding:  
SHARE1
```

```
*** Can't locate:  
BILLK
```

If *no* recipients were located, you are asked to press any key to continue; if *some* were located, you can ignore the errors and send the message to those found. In this case, the status line asks:

```
Can't find all recipients ... Go ahead and send anyway (Y/N)?
```

## Sending a Message

You can type Y and press **↵** to send the message to all valid addressees and ignore those not found. The To: or cc: field still contains these names, although they will not receive a copy of the message. If you respond N, you can proceed with either of the options described below.

- Press **F7** (Edit) to go to the message editor where you can correct the names in the To: or cc: fields. You may have made a spelling error in a name, or not used a valid EtherShare user name. After correcting the error, you can leave the editor and send the message.
- Press **F10** (Done) and you are asked:

Message not sent ... Do you want to save it (Y/N)?

Type Y to save the message or N if it is not to be saved and press **↵**. If you respond Y, the message is saved in a numbered file as indicated in the status line. You are returned to the main display where that message number is shown as being In Progress. If you respond N, the message is deleted and you cannot return to it later.

## Sending a Message

## Replying to a Message

You can reply to any message that has been sent to you by choosing the Reply function. This can be done while the message is displayed on your screen, or you can position the cursor to the message on the main display. In either case, press **F6** (Repl) to reply to the message. You are prompted only for the Attach: field of the message header and can then enter the text of the reply using the message editor.

## Reply Message Header

```
EtherMail n.n    (c)Copyright 3Com Corp 1982, 1983
From: fredj
  To: lynnw
  cc: joep, marys
Subj: RE: Sales Figures
In Reply To: message from lynnw of 1-27-83
Attach: _
```

When you reply to a message, all of the header fields except Attach: are filled in for you. These are:

From: your user name.

To: the sender of the original message.

cc: everyone who received the original message.

Subj: the subject of the original message, preceded by RE: to indicate a reply.

In Reply To: the sender and date of the original message. These fields are accumulated; that is, if you reply to a reply, another In Reply To: field is added.

## Sending a Message

The cursor is positioned at the Attach: field. This field is optional. Enter the name(s) of the DOS file(s) you want to attach here and press **←**. You can attach up to 26 files to a message by separating the file names with a comma (,) or semicolon (;). Be sure to include the drive specifier, file extension and pathname if necessary.

The status line flashes **\*\*\* Busy...please wait \*\*\*** for a moment, then the cursor moves below the header where you can enter the text of your reply.

```
EtherMail n.n Message Editor      (c)Copyright 3Com Corp 1982, 1983
From: fredj
  To: lynnw
  cc: joep, marys
Subj: RE: Sales Figures
In Reply To: message from lynnw of 1-27-83
-----
-

INSERT                                EDIT
F1-Help F2-Fi11 F3-De1W F4-De12 F5-De1L F6-Mark          F10-Done
```

Figure 4-3. Reply to a Message

You can now enter the text of your reply as described in Entering Message Text.

After you have entered the text, leave the editor by pressing **F10** (Done) and send the message by pressing **F6** (Send). Refer to the paragraphs on Sending a Message for more information.

# Sending a Message

## Forwarding a Message

You can forward a copy of any message you have received by choosing the Forward function. This can be done while the message is displayed on your screen, or you can position the cursor to the message on the main display. In either case, press **F7** (Forw) to forward a copy of the message. You are prompted for the appropriate header fields and can then enter additional message text using the message editor.

## Forward Message Header

```
EtherMail n.n (c)Copyright 3Com Corp 1982, 1983
From: fredj
To: _
```

The From: field is already filled in with your user name and the cursor is positioned at the To: field.

The To: field is required. Enter the user names of your addressees here. If you enter more than one name, separate them with a comma (,) or semicolon (;). You can also enter distribution list names here. When you have entered these names, press **←** and you are prompted for the cc: field.

```
EtherMail n.n (c)Copyright 3Com Corp 1982, 1983
From: fredj
To: BillK
cc: _
```

The cc: field is optional. To use it, follow the steps for filling in the To: field. You can send a copy of the forwarded message to yourself by entering your user name here. Enter these names and press **←**.

```
EtherMail n.n (c)Copyright 3Com Corp 1982, 1983
From: fredj
To: BillK
cc: Sales
Subj: FYI: Sales Figures
Attach: _
```

The Subj: field is filled in for you. This is the subject of the original message, preceded by FYI: to indicate that you are forwarding a copy of the message for information. You are then prompted for the Attach: field.

## Sending a Message

The Attach: field is optional. Enter the name(s) of the DOS file(s) you want to attach here and press **←**. You can attach up to 26 files to a message by separating the field names with a comma (,) or semicolon (;). Be sure to include the drive specifier, file extension and pathname if necessary.

This completes the message header. The status line flashes **\*\*\* Busy...please wait \*\*\*** for a moment, then the cursor moves below the header. The original message is included in the new message.

```
EtherMail n.n Message Editor      (c)Copyright 3Com Corp 1982, 1983
From: fredj
  To: BillK
  cc: Sales
Subj: FYI: Sales Figures
-----
-

----- Forwarded Message -----
Date: 1-27-83  11:57am
From: lynnw
  To: FredJ
  cc: JoeP, MaryS
Subj: Sales Figures
-----
Last month's sales figures show a remarkable improvement over the
figures for December.  I appreciate your efforts in achieving
these outstanding results.

Lynn

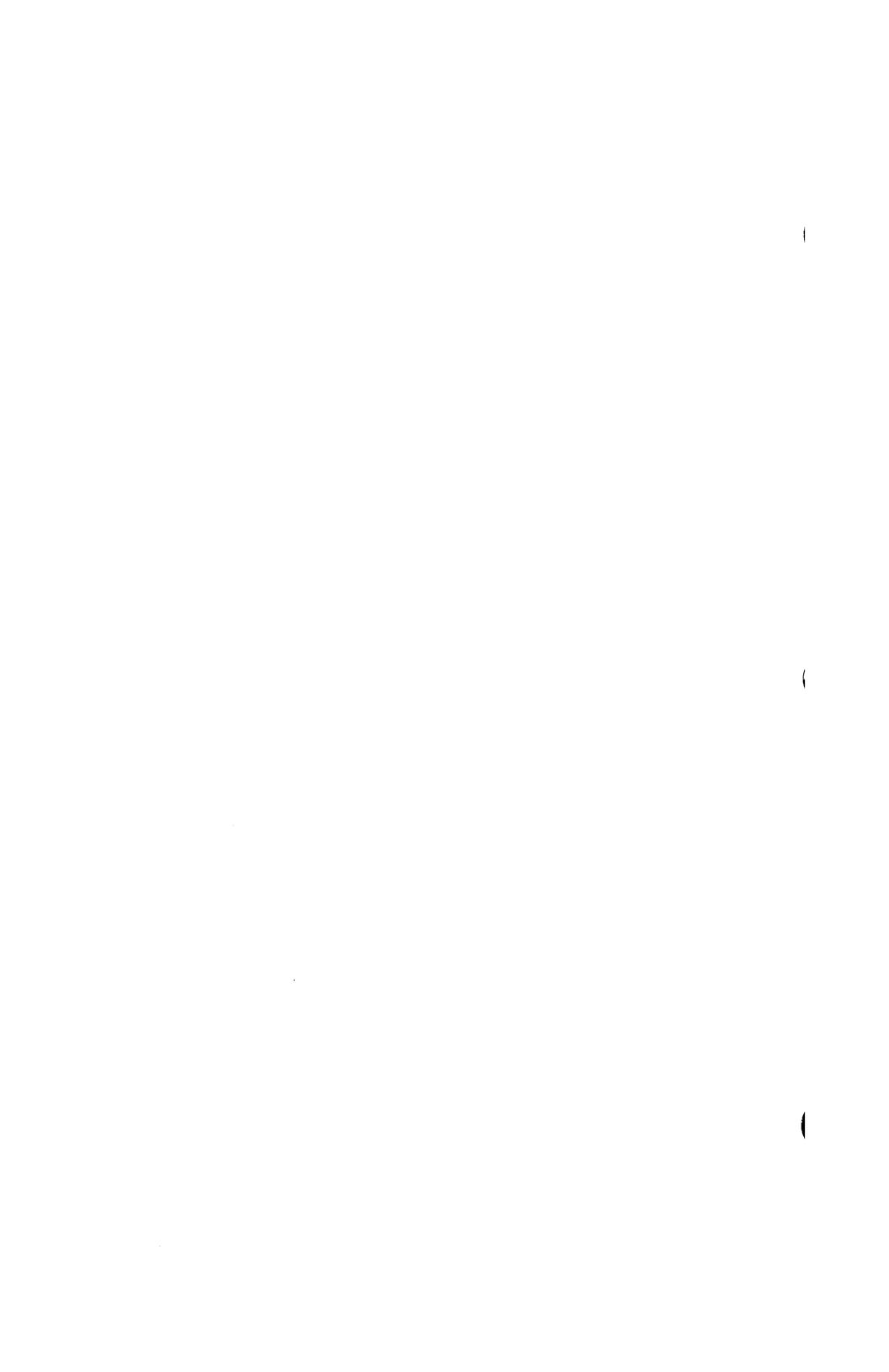
INSERT                                EDIT
F1-Help F2-Fill F3-De1W F4-De12 F5-De1L F6-Mark                                F10-Done
```

Figure 4-4. Forwarding a Message

### Additional Message Text

Some blank lines are provided between the message header and the beginning of the forwarded message. You can enter additional text here. For example, you might want to add an explanatory note to the person(s) who will receive the message. To do this, enter the text using the message editor as described in Entering Message Text.

Press **F10** (Done) to leave the editor and then **F6** (Send) to send the message. Refer to the paragraphs on Sending a Message for further information.



## SECTION 5

# Your Mail Folder

---

## Overview

All messages you receive are stored in your mail folder which is an EtherShare volume that is identified for you by the RUNMAIL command. You can print a copy of a message, delete a message from your folder, or file a message or attachment in a separate DOS file. You can also save an "In Progress" message in your folder and return to finish or send it later.

## Printing a Message

You might want to print a copy of a message or attachment for traditional filing purposes, or to take with you to read at another time.

Messages are printed on the EtherPrint shared printer which is automatically linked for you when you enter the LOGIN command. If you do not have an EtherPrint shared printer, the message is printed on your parallel port printer, PRN:. The entire text of the message is always printed, even if it occupies more than one screen when displayed.

You can print a message by selecting it from the main display, or you can print the message that is currently displayed on your screen. In either case, press **F4** (Prnt) to print the message.

The status line flashes the message "Printing ...", followed by "Printed" when printing is complete.



## Your Mail Folder

### Deleting a Message

Eventually, your folder will fill up with messages. You can always create a new folder and save your old messages in it, but you can also make space in the existing one by deleting messages you no longer require.

You can delete a message by selecting it from the main display, or you can delete the message that is currently displayed on your screen. In either case, press **F3** (Del) to delete the message.

You are asked to confirm the deletion by pressing **F3** again. Press **F3** to delete the message or any other key to cancel the deletion. When deleted, the message is removed from your folder and from the listing on the main display.

If your folder is a single-sided volume, it can contain up to 62 messages; anything larger than a single-sided volume can contain up to 110 messages. As each new message is put in your folder, it is given the next available message number. The highest possible message number is 999. When no further message numbers are available, you will receive an error message. You should then renumber your messages with the RENUMBER batch file. This is described in Appendix B.

### Saving a Message in Progress

If you have to stop entering a message before you have finished or sent it, you can save it as a message "In Progress" which you can complete and send at a later time. You may have been interrupted or need to check some user names before sending the message.

1. When you are using the message editor to enter the message text, press **F10** (Done) to leave the editor.
2. Press **F10** (Done) again and you are asked:

Message not sent ... Do you want to save it (Y/N)?

Type Y to save the message. It is placed in a numbered file, as indicated in the status line. If you respond N, the message is deleted and is not available for later use.

When you save a message, it is shown on the main display as "In Progress". You can go back and finish the message or send it at any time.

## Editing a Message in Progress

1. On the main display, position the cursor at the message you left "In Progress".
2. Press **F2** (Show) to display the message on the screen.

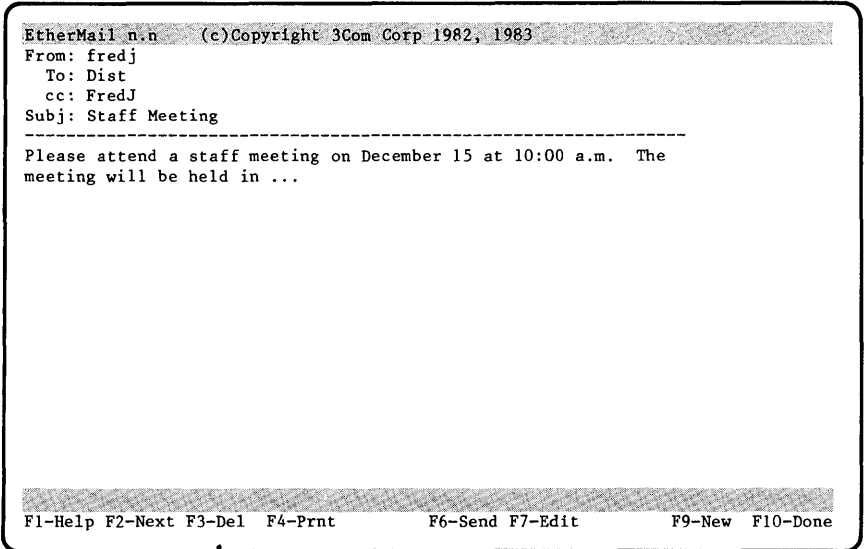


Figure 5-1. In Progress Message

When you show a message that you left in progress, you can delete, print, send or edit it.

3. To edit the message, press **F7** (Edit) to go to the message editor. The message remains on the screen and the function keys become the editor function keys. The cursor is positioned at the beginning of the message text.
4. You can now complete or revise the message text or header using the message editor.
5. Press **F10** (Done) to leave the editor. You can then press **F6** to send the message. Refer to Section 4 for more information on sending a message.

## Your Mail Folder

### Filing a Message or Attachment

EtherMail assigns a number to each message and attachment in your folder. The file extension .MSG is used to identify all mail messages (for example, 3.MSG and 99.MSG are messages, 13A.MSG is an attachment). Each message and attachment is stored in a DOS file which can be used like any other DOS file.

Any message or attachment in your folder can be filed in a separate DOS file with the File function. By giving another drive specifier and/or DOS pathname along with the file name, you can copy a message or attachment to another EtherShare volume or diskette, or to a fixed disk.

If you give only a drive specifier and/or pathname without giving a file name, you can automatically file the message or attachment in another folder. The next time you run EtherMail, you can give this drive specifier and/or pathname as a parameter of the MAIL command. If the DOS directory does not contain an EtherMail folder directory, you are asked if you want to create one. In this way, you can keep multiple folders in addition to your INBOX folder and use them like a filing cabinet. For more information on the MAIL command, refer to Appendix A.

You can file a message or attachment when it is displayed on your screen or by selecting it from the main display. In either case, press F5 (File) and the status line displays:

File name?

Type the DOS file name here. You must include the drive specifier if you don't want to save the file on the current folder drive. You must also include a pathname if you don't want to use the current directory for this drive. For example:

File name? **B:REPORT**

Files a copy of the message in a file called REPORT on drive B:.

File name? **B:\ARCHIVE\REPORT**

Files a copy of the message in a file called REPORT in the directory ARCHIVE on drive B:.

File name? **B:\ARCHIVE\**

Files a copy of the message under the next available message number in the folder in the \ARCHIVE\ directory on drive B:. If you want to use the \ARCHIVE\ folder, run EtherMail using MAIL B:\ARCHIVE\.

If you press **←** without supplying anything, the message is given the next available message number (for example, 50.MSG) and filed under that name in your current folder.

When the message or attachment has been filed, the status line tells you:

Message filed in B:REPORT.

The file name you assigned can now be used with DOS commands, application programs, or in the Attach: field of an EtherMail message header.

# Your Mail Folder

## Classifying Your Messages

On the main display, EtherMail shows an asterisk (\*) beside each unread message. When the message has been read, the asterisk is removed. EtherMail also allows you to use your own system for classifying your messages by entering a letter, number or special character in this position.

Move the cursor to the desired message on the main display and type the appropriate character which is then displayed to the left of the date. To remove a character, type a space.

In this way, you can categorize messages for your own particular needs. You might type an R for messages that need a reply, use ! for very important messages, or D for messages that can be deleted when you need space in your folder. For example:

```
EtherMail v. n (c)Copyright 3Com Corp 1982, 1983
1 ! 12-8-82 marys Market Survey
2 D 12-15-82 steve RE: Staff Meeting
8 R 1-20-83 joep FYI: February Budget
8A Attachment BUDGET
9 ! In Progress fredj Monthly Report
10 R 1-27-83 lynnw Sales Figures

F1-Help F2-Show F3-Del F4-Prnt F5-File F6-Repl F7-Forw F8-Get F9-New F10-Exit
```

Figure 5-2. Classifying Messages

If you replace an asterisk with another character, you must use your own notation if you want to indicate read and unread messages. If you do not replace it, the asterisk is still used to indicate unread messages.

Unlike the asterisk, characters that you use to indicate the status of a message are not erased when you read the message.

## SECTION 6

# The Message Editor

## Overview

EtherMail provides a message editor which you use to enter and edit the text of a message or modify the message header. You can also run the editor as a separate program and use it to create and edit distribution lists, programs or any kind of text file. It is used in the same way for all text entry and editing, regardless of the particular operation. The editor is screen-oriented which means that you can go back and edit text by simply positioning the cursor and making revisions.

This section describes using the editor to enter and edit text, then shows how it can be used as a separate program to create a text file. Distribution lists are covered in Section 7.

## Using the Editor with EtherMail

While using EtherMail, you are prompted for the appropriate message header when you press any of the following function keys:

- F6** (Repl) to reply to a message
- F7** (Forw) to forward a copy of a message
- F9** (New) to create a new message

After you enter the header, the message editor display and function keys are shown.

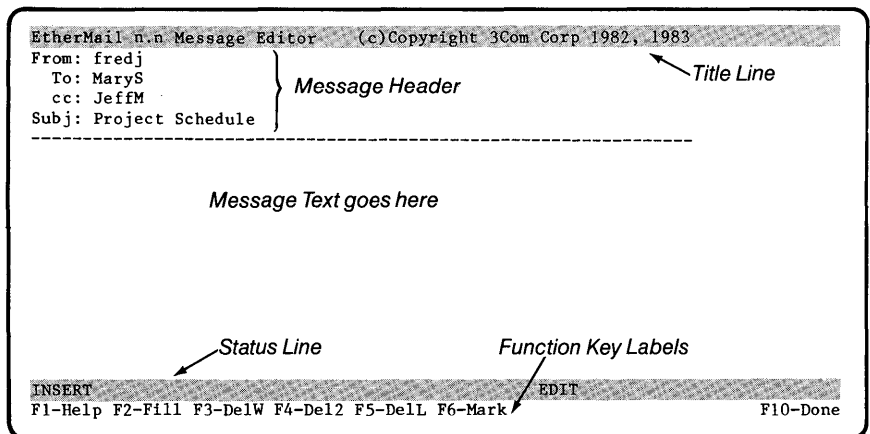


Figure 6-1. EtherMail Message Editor Display

## The Message Editor

**The Title Line** tells you the version number of the message editor and gives copyright information.

EtherMail prompts you for the appropriate fields in the **Message Header**. The different message headers are described in Section 4.

If you need to modify the header after you have entered it, position the cursor and make the change as described in Editing Text later in this section.

**The Message Text** is entered and edited by you using the editor, as described in Entering Text later in this section.

**The Status Line** gives you the following information:

- INSERT or TYPE-OVER mode: the editor is normally in INSERT mode which means that text is inserted wherever it is typed. Any existing text moves to the right when new text is inserted. In TYPE-OVER mode, text replaces the existing text wherever it is typed. When you are marking a block of text (for moving, copying or deleting), the mode changes to MARK.
- EDIT or CREATE mode: you are always in EDIT mode when you use the message editor with EtherMail. When you use the editor as a separate program, you are in CREATE mode when creating a new file and EDIT mode when revising a file.
- File name: the name of the file you are editing. The EtherMail file name for a new message is MESSAGE.TMP. An "In Progress" message is given a file number. When you use the editor as a separate program, the name of the file you are creating or editing is shown here.

## Function Keys

- F1**—Help Provides information on using the editor.
- F2**—Fill Fills edited paragraphs out to the margins.
- F3**—DelW Abbreviation for Delete Word; deletes the word at which the cursor is positioned.
- F4**—Del2 Abbreviation for Delete to End of Line; deletes text from the cursor position to the end of the current line.
- F5**—DelL Abbreviation for Delete Line; deletes the line in which the cursor is positioned.
- F6**—Mark Marks text to be moved, copied or deleted. When you have marked a block of text, function keys **F7**, **F8**, **F9** and **F10** change as follows:
- F7** (Copy) copies the marked text to another location.
  - F8** (Move) moves the marked text to another location.
  - F9** (Del) deletes the marked text.
  - F10** (Stop) cancels the mark operation.
- F10**—Done Takes you out of the editor.





# The Message Editor

## Entering Text

Entering text is just like typing on a typewriter except that it's easier. The special features of text entry are described here.


### Word Wrap

Do not press  at the end of every line when you are entering text within a paragraph. When you reach the right margin, the text that would normally go past the margin is automatically wrapped around to the beginning of the next line.

The  key is used to create a deliberate line ending; for example, to start a new paragraph (pressed twice), to insert blank lines, or to end any line before reaching the right margin.


### Example

---

This paragraph was typed without any carriage returns at the line endings. It's much easier to just keep on typing without caring about where the line will end. 




*don't press* 

The previous paragraph was ended with two carriage returns. This ends the current line and moves you down one blank line to begin the next paragraph. A carriage return also creates a deliberate line ending. For example: 



This the first line of text. 

This is the second line. 


And this is the third line. 

—

---


## Wrap Point



Words are normally wrapped to the left margin, as shown in the word wrap example.

However, if you press the **Tab** key (  ) to indent a line, words are wrapped to that tab position on subsequent lines.

## Example


---

 The Tab key was pressed to indent this paragraph, so the next line of text is wrapped to the tab position. All subsequent lines are also indented.

 1.  The Tab key was pressed twice in this line. Subsequent lines of text are always indented to the last tab position. \_

---

## Backspace

If you make a typing mistake while you are entering text, you can use the **Backspace** key (  ) to go back and correct the error.

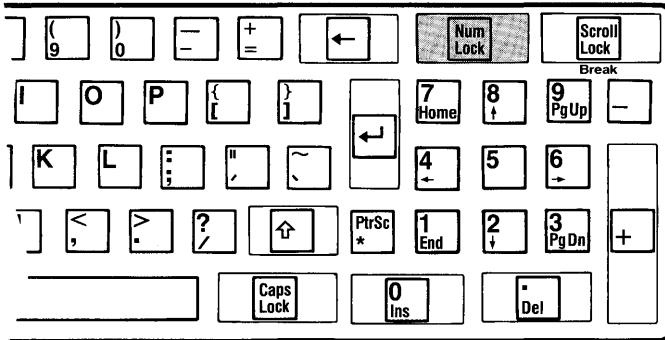


Figure 6-2. The Backspace Key

# The Message Editor

This key deletes the character to the left of the cursor and pulls remaining text to the left as it moves the cursor backwards. You then have to retype the text from the point of the correction. Use the **Backspace** key to correct an error you have just made. Other ways of revising text are described later in Editing Text.

## Example

---

There is a typo in thsi\_

There is a typo in th\_

*Backspace to the error*

There is a typo in this line - at least, there was!\_


*Retype the correct letters and continue typing*

---

## Margins

The left margin is set to 0 and the right margin to 65 characters. Margins cannot be changed.

## Tabs

Tabs are automatically set every four characters. Each time you press the **Tab** key (  ) when you are entering new text, the cursor moves over four characters to the next tab position. Tab settings cannot be changed.

## Editing Text

Text is edited by positioning the cursor to the correction point and making the revision: for example, deleting or inserting text.

## Positioning the Cursor

The keys shown in figure 6-3 are used to position the cursor in existing text.

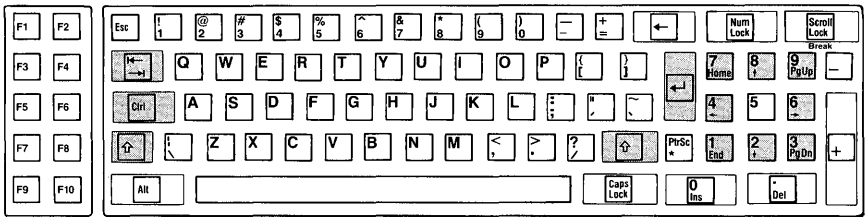


Figure 6-3. Cursor Positioning Keys

**Arrow keys** move the cursor up (↑) and down (↓) by one line, or left (←) and right (→) by one character. Moving the cursor through text with these keys does not delete text.

Pressing ↑ beyond the current screen display scrolls text down on the screen; the ↓ key scrolls text up.

If you move the cursor below the last line of existing text with the ↓ key, you will see the message “Extending file ...” in the status line. This adds blank lines to the end of your message or file.

**PgUp** and **PgDn** display the previous (**PgUp**) or next (**PgDn**) screen of text. The cursor moves to the top leftmost position on the screen.

**Tab** (↵) moves the cursor to the beginning of the next word in existing text. **Tab** moves the cursor to the next tab position when entering new text, or on any blank line. Tabs are set every four spaces.

## The Message Editor

**Shift** ( ⇧ )-**Tab** ( ⇐⇒ ) moves the cursor to the beginning of the previous word in existing text. Hold down **Shift** and press **Tab**. **Shift-Tab** moves the cursor to the previous tab position on any blank line.

**End** moves the cursor to the end of the current line. If you press **End** again before pressing any other key, the cursor moves to the end of the current paragraph. Continue pressing **End** to move the cursor from paragraph to paragraph. This is useful to position the cursor before adding text to the end of a paragraph or end of a message.

**Ctrl-End** moves the cursor to the beginning of the current line. Hold down **Ctrl** and press **End**. If you press **Ctrl-End** again before pressing any other key, the cursor moves to the beginning of the current paragraph. Continue pressing the keys to move the cursor back a paragraph at a time.

**Home** moves the cursor to the top leftmost position on the screen.

**Ctrl-Home** moves the cursor to the beginning of the last line on the screen. Hold down **Ctrl** and press **Home**.

**Ctrl** ⏎ moves the cursor to the beginning of the next line. Hold down **Ctrl** ( and press ⏎ . When pressed alone, ⏎ inserts a line and positions the cursor at the left margin.

For all editing operations, the cursor is first positioned using one of the methods described above.

## Inserting Text

The normal editing mode is INSERT mode. You are in this mode whenever you are entering or editing text. To insert text, position the cursor to the right of the insertion point and type as much text as you want to insert. Existing text moves to the right and, if it passes the right margin, wraps to the next line.

### Example

---

You can insert by positioning the cursor and typing the text you want to insert.

*Position the cursor and type "text "*

You can insert text by positioning the cursor and typing the text you want to insert.

*Existing text moves over and automatically wraps to the next line*

---

## Deleting a Character

Position the cursor to the first character you want to delete and press the **Del** key once for each character to be deleted. The rest of the line moves to the left to close up the space.

### Example

---

There is an extra character in this line.

*Position the cursor and press the **Del** key*

There is an extra character in this  line.

*Text moves over to close up space*

---

# The Message Editor

## Deleting a Word (DelW)

The cursor can be positioned anywhere in the word that is to be deleted. If the cursor is between two words, the word to the left is deleted. Press **F3** (DelW) and the word is deleted. The rest of the line moves over to the left to close up the space.

### Example

---

There is an extra word word in this line of text.

*Position the cursor and press **F3** to delete the word*

There is an extra word in this line of text.

*Text moves over to close up space*

---

After deleting a word, you may have to fill the paragraph as described later in Filling Text.

You can also use **F3** (DelW) to delete words while you are entering text. Just as the **Backspace** key deletes characters, **F3** deletes a word at a time as it moves the cursor backwards.

### Example

---

You can begin a line with one idea and change your mind\_

*Press **F3** three times*

You can begin a line with one idea and \_

*The last three words are deleted*

You can begin a line with one idea and finish it with another.\_

---

## Replacing Text

In practice, you will often combine editing operations when you revise text. The most common use of this is to delete some text and immediately replace it with different text.


### Example

---

This text editor provides an easy way to revise existing text.

 Position the cursor and press **F3** to delete the word

This editor provides an easy way to revise existing text.

 The cursor is already positioned in the right place for insertion. Type the new word "message "

This message editor provides an easy way to revise existing text.

*The new word is inserted*

---


In this way, you can change any amount of text without worrying that the replacement is of a different length.

You can use the same method to correct simple typos: position to the error, delete the character(s) and type the correction.

### Example

---

Use this method to correct simple arrors in text.

 Position the cursor and press the **Del** key

Use this method to correct simple rrors in text.

*Type the correct letter "e"*

Use this method to correct simple errors in text.

---



# The Message Editor

## Deleting a Line (DelL)

The cursor can be positioned anywhere in the line to be deleted. Press **F5** (DelL) and the line is highlighted. You are asked to confirm the deletion by pressing **F5** again. If you press any other key, the line is not deleted. Subsequent lines move to close up the space when a line is deleted.

### Example

---

A whole line of text is easily deleted with the Delete Line key. You are given a chance to cancel the deletion if you need to. Subsequent lines automatically move up when a line is deleted.

*Position the cursor anywhere in the line  
Press **F5** to highlight the line*

A whole line of text is easily deleted with the Delete Line key. You are given a chance to cancel the deletion if you need to. Subsequent lines automatically move up when a line is deleted.

*Press **F5** again to delete the line*

A whole line of text is easily deleted with the Delete Line key. Subsequent lines automatically move up when a line is deleted.

---

## Deleting to the End of a Line (Del2)

Partial lines can also be deleted. The cursor should be positioned at the first character to be deleted. Press **F4** (Del2) and the remainder of the line is highlighted. Press **F4** again to delete the highlighted text or any other key to cancel the deletion.

### Example

---

You can delete partial lines by pressing function key 4 twice. Like deleting a whole line, you have the chance to change your mind.

*Position the cursor and press **F4** to highlight the text*

You can delete partial lines by pressing function key 4 twice. Like deleting a whole line, you have the chance to change your mind.

*Press **F4** again to delete the remainder of the line*

You can delete partial lines. Like deleting a whole line, you have the chance to change your mind.

*Text is deleted to the end of the line*

---

You can then fill the paragraph as described below.

# The Message Editor

## Filling Text

When text is deleted, the line lengths in the paragraph can become uneven. This is remedied by pressing **F2** (Fill) which adjusts the lines in a paragraph back to the margins. The cursor can be positioned anywhere in the paragraph that is to be filled.

### Example

---

If you are editing a paragraph and delete words or lines, your text can become uneven.

You can adjust text to fill the empty space with the **FILL** function.

*Position the cursor in the paragraph you want to fill and press **F2***

If you are editing a paragraph and delete words or lines, your text can become uneven. You can adjust text to fill the empty space with the **FILL** function.

*Text is filled back out to the margins*

---

## Inserting Blank Lines

As well as inserting text, you can insert blank lines by positioning the cursor and pressing **↵** once for each blank line to be inserted.

### Example

---

Blank lines can be inserted anywhere in your text by positioning the cursor and adding a carriage return.

There should be a blank line between this paragraph and the previous one.

*Position the cursor and press **↵***

Blank lines can be inserted anywhere in your text by positioning the cursor and adding a carriage return.

There should be a blank line between this paragraph and the previous one.

---

You can add as many blank lines as you wish by pressing **↵** for each line you want to insert.

## Splitting Lines and Paragraphs

The **↵** key is used to split a line into two lines. Pressing **↵** twice breaks text into two paragraphs.

### Example

---

(a) This is item 1 (b) This is item 2

*Position the cursor to the point of the new line and press **↵** to split the line*

(a) This is item 1  
(b) This is item 2

---

Splitting paragraphs follows the same procedure, except that **↵** is pressed twice to include a blank line between paragraphs.

### Example

---

When you are entering the text of a message, you might not think about dividing the text into paragraphs. This is no problem since paragraphs can easily be split after they have been entered. If a new paragraph should begin at this sentence, you can simply position the cursor and add two blank lines to break it off into a separate paragraph.

*Position the cursor at the beginning of the new paragraph and press **↵** twice, then fill **(F2)** the second paragraph*

When you are entering the text of a message, you might not think about dividing the text into paragraphs. This is no problem since paragraphs can easily be split after they have been entered.

If a new paragraph should begin at this sentence, you can simply position the cursor and add two blank lines to break it off into a separate paragraph.

---

# The Message Editor

## Joining Lines and Paragraphs

If you unintentionally split a line with **←**, you can delete the keystroke just like deleting a character. There are two ways to do this, as shown in the following examples.

### Example

---

The line should not be split at\_  
this point.

*Position the cursor in the first line  
Press **End** to move to the end of the line  
Press **Del** to join the lines*

The line should not be split at\_ this point.

---

A second way of doing this is shown below. Use this method only if text is not indented.

---

The line should not be split at  
\_this point.

*← Position the cursor at the beginning of the second line  
Press **Backspace** (←) to join the lines*

The line should not be split at\_ this point.

---

If you want to combine two paragraphs to form one paragraph, you can delete the blank line that separates the paragraphs. You will then have to fill the new paragraph (**F2**) to adjust it back to the margins.

## Example

---

This paragraph is too short.

It should be joined to this paragraph to form one longer paragraph.

*Position the cursor in the blank line between paragraphs  
Press **F5** (DelL) to highlight the line  
Press **F5** again to delete the line*

This paragraph is too short.

It should be joined to this paragraph to form one longer paragraph.

*Press **F2** (Fill) to adjust the text back to the margins*

This paragraph is too short. It should be joined to this paragraph to form one longer paragraph.

---

## TYPE-OVER

There are occasions when you will want to type over existing text without inserting additional characters. Since the normal editing mode is INSERT, you must turn INSERT mode off by pressing the **Ins** key before you can use TYPE-OVER.

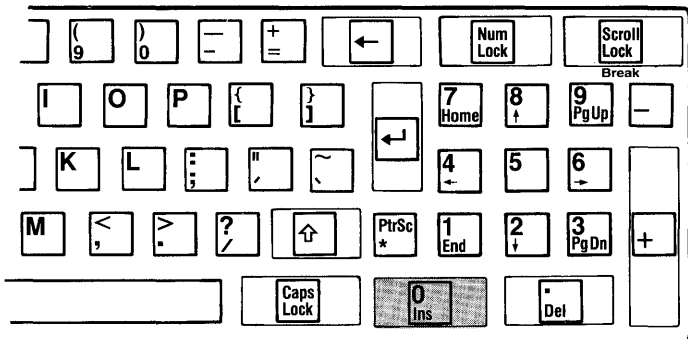


Figure 6-4. The Ins Key

# The Message Editor

When you press the **Ins** key, the cursor becomes a blinking box to tell you that you're in TYPE-OVER mode and TYPE-OVER is displayed in the status line. Type the change or correction and press the **Ins** key again to return to INSERT mode. Since INSERT works in this on/off fashion, you always press it once to turn it off and again to turn it on.

Typeover is useful for editing columns of material where you don't want to destroy the layout by moving surrounding text.

## Example

---

### Sales Figures

Monday	10,000
Tuesday	12,000
Friday	11,500

Position the cursor and press **Ins** to end INSERT mode.  
Type the new word "Wednesday" which is typed over the existing word.

### Sales Figures

Monday	10,000
Wednesday	12,000
Friday	11,500

Press **Ins** again to return to INSERT mode.

---

If TYPE-OVER wasn't used here, the additional letters would be inserted and the figures for Wednesday would move to the right.

TYPE-OVER mode is different from INSERT mode in the following ways:

- words do not automatically wrap to the next line when you reach the right margin
- the Backspace key ( ← ) erases text without pulling remaining text to the left

To return to INSERT mode, always remember to press **Ins** when you have finished using TYPE-OVER.

## Block Operations

Block operations allow you to mark blocks of text which can then be moved, copied or deleted. Regardless of whether you want to move, copy or delete, the first step is always to mark the beginning and end of the block of text. You can then delete the text, or position the cursor anywhere in the document and move or copy the text to that location.

### Marking Text

The **F6** (Mark) function key is used to mark the beginning and end of a block of text. You must mark text before you can move, copy or delete it.

#### Example

---

When you move text, it is taken out of its original location and moved to the new location. Copying leaves text in its original location and puts an identical copy in the new location. Deleting by this method lets you delete a whole block of text instead of just words and lines at a time. Sometimes you'll have to fill a paragraph when you've rearranged blocks of text.

*Position the cursor at the beginning of the text to be marked  
Press **F6** to highlight the first character*

When you move text, it is taken out of its original location and moved to the new location. Copying leaves text in its original location and puts an identical copy in the new location. Deleting by this method lets you delete a whole block of text instead of just words and lines at a time. Sometimes you'll have to fill a paragraph when you've rearranged blocks of text.

*Position the cursor at the end of the text to be marked  
Press **F6** to highlight the whole block of text*

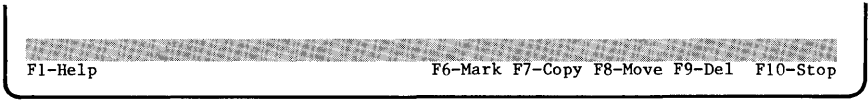
When you move text, it is taken out of its original location and moved to the new location. Copying leaves text in its original location and puts an identical copy in the new location. Deleting by this method lets you delete a whole block of text instead of just words and lines at a time. Sometimes you'll have to fill a paragraph when you've rearranged blocks of text.

---



# The Message Editor

The function keys now change to allow you to copy, move or delete the text, or stop the operation. You can also change the marked area by pressing F6 again.




## Copying Text

To copy text, first mark it as described above, then move the cursor to the location for the copy and press **F7** (Copy). The text remains in its original location and also appears in the new location. Text can be copied to any part of the document and anywhere within a line.

### Example

---

When you move text, it is taken out of its original location and moved to the new location. Copying leaves text in its original location and puts an identical copy in the new location. Deleting by this method lets you delete a whole block of text instead of just words and lines at a time. Sometimes you'll have to fill a paragraph when you've rearranged blocks of text.

 Position the cursor  
Press **F7** to copy the text to the new location

When you move text, it is taken out of its original location and moved to the new location. Copying leaves text in its original location and puts an identical copy in the new location. Deleting by this method lets you delete a whole block of text instead of just words and lines at a time. Sometimes you'll have to fill a paragraph when you've rearranged blocks of text, a whole block of text instead of just words and lines at a time.

Copying leaves text in its original location and puts an identical copy in the new location. Deleting by this method lets you delete a whole block of text instead of just words and lines at a time. \_

Press **F2** to fill the copied paragraph

Copying leaves text in its original location and puts an identical copy in the new location. Deleting by this method lets you delete a whole block of text instead of just words and lines at a time.


## Moving Text

To move text, first mark it as described earlier, then position the cursor in the new location and press **F8** (Move). The text is taken out of its original location and moved to the new location. Text can be moved to any part of the document and anywhere within a line.

### Example

---

When you move text, it is taken out of its original location and moved to the new location. Copying leaves text in its original location and puts an identical copy in the new location. Deleting by this method lets you delete a whole block of text instead of just words and lines at a time. Sometimes you'll have to fill a paragraph when you've rearranged blocks of text.

 Position the cursor  
Press **F8** to move the text

When you move text, it is taken out of its original location and moved to the new location. Sometimes you'll have to fill a paragraph when you've rearranged blocks of text.

Copying leaves text in its original location and puts an identical copy in the new location. Deleting by this method lets you delete a whole block of text instead of just words and lines at a time. \_

*Press **F2** to fill the moved paragraph*

When you move text, it is taken out of its original location and moved to the new location. Sometimes you'll have to fill a paragraph when you've rearranged blocks of text.

Copying leaves text in its original location and puts an identical copy in the new location. Deleting by this method lets you delete a whole block of text instead of just words and lines at a time.

*Move the cursor back to the previous paragraph  
Press **F2** to fill this paragraph*

# The Message Editor

When you move text, it is taken out of its original location and moved to the new location. Sometimes you'll have to fill a paragraph when you've rearranged blocks of text.

Copying leaves text in its original location and puts an identical copy in the new location. Deleting by this method lets you delete a whole block of text instead of just words and lines at a time.

---

## Deleting Text

To delete a block of text, first mark it as described earlier, then press **F9** (Del). You are asked to confirm the deletion by pressing **F9** again. If you press any other key, the text is not deleted.

### Example

---

When you move text, it is taken out of its original location and moved to the new location. Copying leaves text in its original location and puts an identical copy in the new location. Deleting by this method lets you delete a whole block of text instead of just words and lines at a time. Sometimes you'll have to fill a paragraph when you've rearranged blocks of text.

*Text is already marked*

*Press **F9** and you are asked to confirm the deletion*

*Press **F9** again to delete the text*

When you move text, it is taken out of its original location and moved to the new location. Sometimes you'll have to fill a paragraph when you've rearranged blocks of text.

*Press **F2** to fill the paragraph*

When you move text, it is taken out of its original location and moved to the new location. Sometimes you'll have to fill a paragraph when you've rearranged blocks of text.

---

## Moving or Copying Indented Text

When you move or copy text that has been indented from the left margin, you have to make sure that you first mark the text from the left margin on the first line to the absolute end of the last line.

### Example

---



January	June	December
10,000	8,500	12,500
11,500	9,750	11,000
9,850	9,280	11,800
10,250	9,000	11,250

*Position the cursor in the first line of text*

*Press **Ctrl-End** to move the cursor to the very beginning of the line*

*Press **F6** (Mark) to highlight the first character*

January	June	December
10,000	8,500	12,500
11,500	9,750	11,000
9,850	9,280	11,800
10,250	9,000	11,250

*Position the cursor in the last line of text*

*Press **End** to move the cursor to the very end of the line*

*Press **F6** (Mark) to highlight the entire block of text*

---

Once the text has been marked, you can go on to move or copy it to another location. With indented text, the cursor must be positioned at the very beginning of a line (**Ctrl-End**) before you press **F7** (Copy) or **F8** (Move).

# The Message Editor

## Running the Editor as a Separate Program

You can use the editor to create and edit reports, letters, memos, programs or any other text file. These files are regular DOS files which you can use with DOS commands or application programs.

## Running the Editor

To use the editor independently, run the program called MED which is stored on the same EtherShare volume (SYS.SYS2) as the EtherMail program. You are automatically linked to this volume when you enter the LOGIN command. When you run the MED program, you must supply the name of the file you want to create or edit. For example:

```
D> MED A:REPORT
```

REPORT is a DOS file which is stored on the diskette in drive A:. As usual, you can include the drive specifier, pathname and file extension if necessary. If this file already exists, it is displayed for you to edit; if it does not exist, you are given a blank screen to enter text.

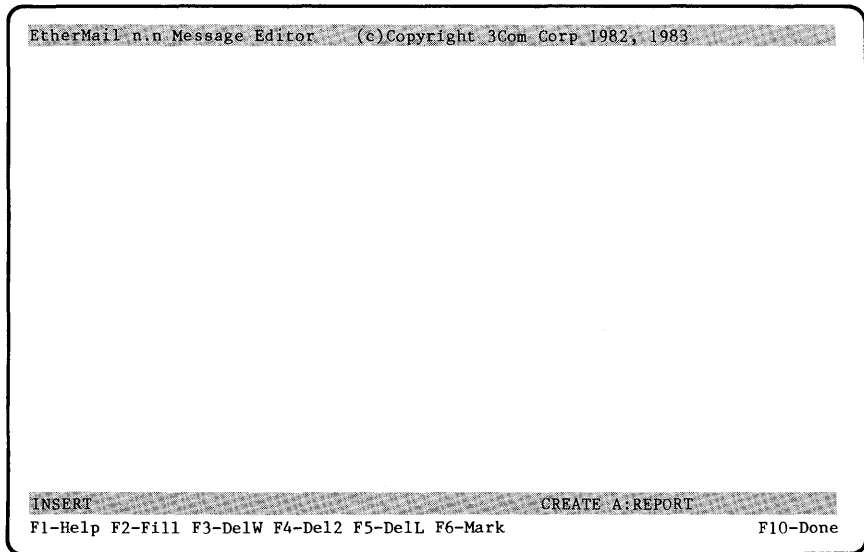


Figure 6-5. The Message Editor Display

This display is similar to using the message editor with EtherMail, except that there is no message header. The function keys are the same and the status line shows the name of the file you are creating or editing.

Enter text just as you would for an EtherMail message. If you want to make a correction or change, use the arrow keys to position the cursor and edit the text as usual.

## Leaving the Editor

Press **F10** (Done) to leave the editor. This displays four choices:

- F7: Continue editing
- F8: Abort Edit WITHOUT Saving File
- F9: Save File and Continue Editing
- F10: Save File and Exit

**F7** returns you to the editor and the file you just left.

**F8** returns you to DOS without saving the changes you have made to the file.

**F9** saves the changed file and returns you to the editor.

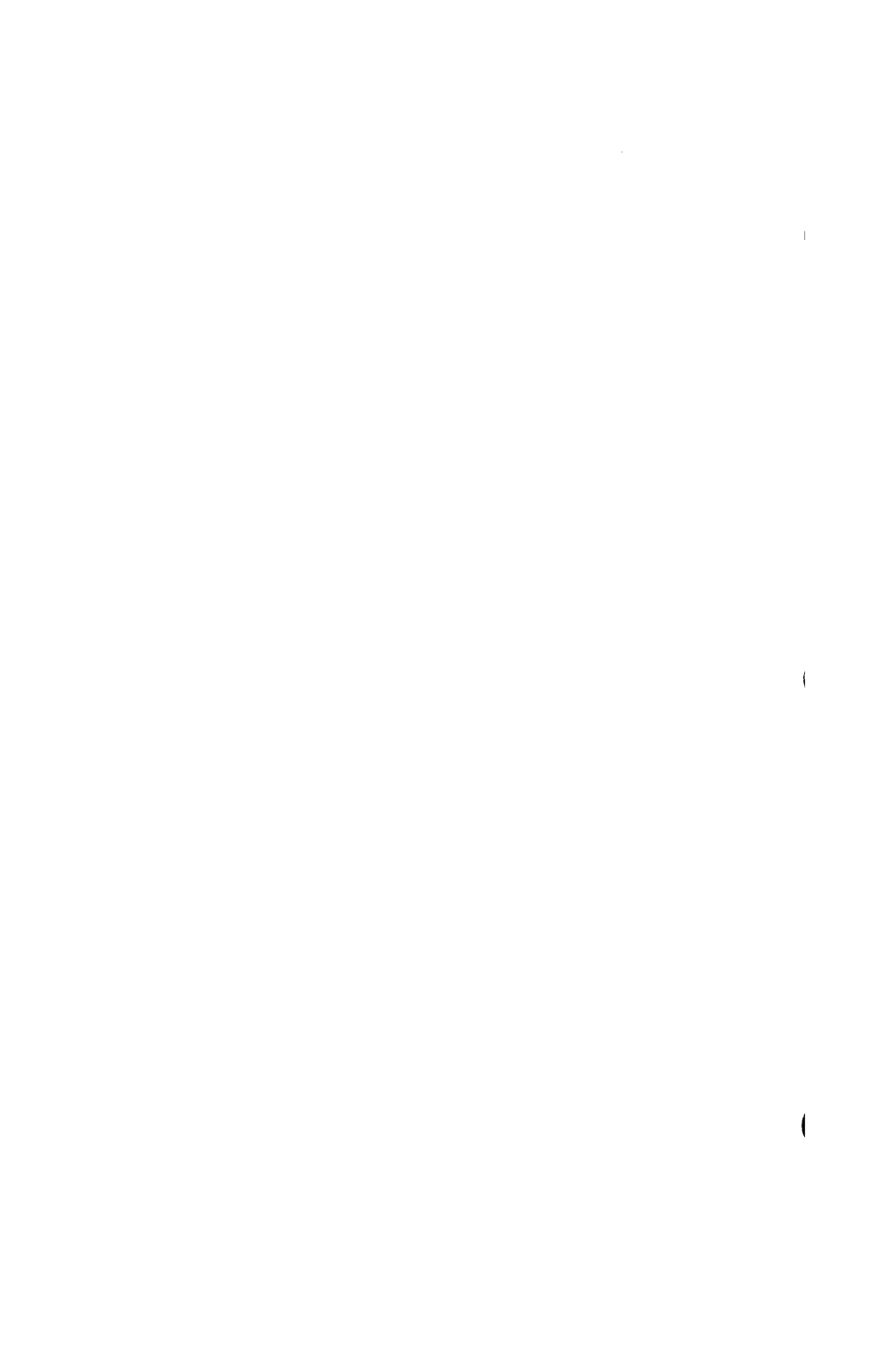
**F10** saves the changed file and returns you to DOS.

In most cases, you will probably choose **F10** to save the file and leave the editor.

## Saving the File

If you are editing a large document, you should save the file periodically by pressing **F10** (Done) to leave the editor, followed by **F9** to save the file and continue editing. This protects you from losing your work if you should have an unexpected system or power failure by storing the current version of your file from memory to diskette.

You can edit files as large as 25,000 characters. All changes are kept in computer memory until you save the file on diskette or an EtherShare volume. When you save the changed file, it overwrites the original file.



## SECTION 7

# Distribution Lists

---

## Overview

If you regularly send messages to the same groups of people, you can create a distribution list for each group. The name of this list is then entered in the To: or cc: field of the EtherMail message header and the message is sent to all the names on the list.

Distribution lists are created and edited with the message editor and are stored in normal DOS files. The file name must include the extension .DST when it is created, although the extension is not used when the file name is supplied in the message header. You can add or delete names on a distribution list at any time.

This section shows you how to use a distribution list with an EtherMail message and describes creating and editing a list.

## Using a Distribution List

When you run EtherMail using the LOGIN and RUNMAIL commands, you are linked to the EtherShare volume (SYS.SYS2) that contains the EtherMail program. If distribution lists are also stored on this volume, they are automatically available for your use. In this way, lists can be centrally maintained and shared by all users.

However, if you use distribution lists that are stored on a separate volume or on diskette, you must use the MAIL command to run the EtherMail program. The format of this command is:

```
MAIL [folderdrive] [folderpath] [distributiondrive]  
[distributionpath]
```



# Distribution Lists

The parameters must be supplied in the order shown and there cannot be any spaces between the drive and pathname. If you omit either of the drive parameters, your current default drive is used; if you omit either of the pathname parameters, your current directory on the drive is used. For example:

D> **MAIL A: B:**

In this example, the folder is on drive A: and distribution lists on drive B:.

D> **MAIL C:**

In this example, the folder is an EtherShare volume linked to drive C: and distribution lists are on the EtherShare volume linked to D:, the default drive.

D> **MAIL C:\INBOX\ D:\DISTLIST\**

In this example, the folder is the subdirectory INBOX on the EtherShare volume linked to drive C.; distribution lists are in the subdirectory DISTLIST on the EtherShare volume linked to drive D:.

## Sending a Distribution Message

You can send a message to a distribution list when you compose a new message or forward a copy of a message. Begin the message as usual, by pressing **F9** (New) for a new message or **F7** (Forw) to forward a message.

To send the message to the distribution list, type the file name when prompted for the To: or cc: field of the message header. Do not use the .DST file extension when using a distribution list name in the message header. For example:

```
EtherMail n.n Message Editor (c)Copyright 3Com Corp 1982, 1983
From: miker
To: Sales
cc: SteveP
Subj: 2nd Qtr. Forecast
-----
```

Type the message text, leave the Message Editor, and press **F6** (Send) to send it to all names on the distribution list.

As usual, you are told if any of the user names cannot be found. If this happens, you can use the message editor to update the list.

# Creating a Distribution List

## Running the Editor

Since distribution lists are created with the message editor, you begin by running the editor program (MED) and giving a file name for the list. This file name must have the extension .DST to identify it as a distribution list. For example:

```
D> MED A:SALES.DST
```

This example creates a file called SALES.DST. You must give the drive specifier if the list is not to be saved on the current default drive.

## Entering Names

Use the message editor as usual to enter the names of your addressees. These names must be EtherShare user names. For example:

```
JoanL  
DennisP  
SueM  
JanW  
LarryH  
BillK
```

You can enter names as they are shown here with one on each line, or you can enter names separated by a tab, space, semicolon (;) or comma (.). For example:

```
JoanL DennisP SueM JanW LarryH BillK
```

You can even include another distribution list name (without the .DST extension) within a distribution list. For example:

```
SALES, MKTG
```

In this example, all names on the Sales and Mktg distribution lists are included in the list you are now creating.

## Leaving the Editor

When you have entered all the names, press **F10** (Done) to leave the editor as you would normally.

# Distribution Lists

## Saving the File

When you leave the editor, four choices are displayed:

- F7: Continue Editing
- F8: Abort Edit WITHOUT Saving File
- F9: Save File and Continue Editing
- F10: Save File and Exit

Press **F10** to save the file and return to DOS.

After creating or modifying a distribution list, you might want to send a test message to ensure that all names on the list are valid.

## Editing a Distribution List

Be sure you insert the distribution list diskette or link to the correct EtherShare volume before editing a list.

You can then add, delete or correct names on the distribution list by running the editor and giving the name of the file. For example:

```
D> MED SALES.DST
```

The list of names is displayed, with the editor function keys at the bottom of the screen. Use the editor as usual to edit the list.

When you have made the necessary corrections, press **F10** (Done) to leave the editor and choose from the usual options. Normally, you will select **F10** to save the file and return to DOS.

## Appendix A

# The EtherMail Program

---

## The EtherMail Program

EtherMail is made up of three programs that chain from one to another. These programs are contained in the files MAIL.COM, ZZMAIL.COM and MED.COM.

## Running the Mail Program

You can run EtherMail from a diskette or from an EtherShare volume, but all three program files must be present. The drive which contains these files must be the current default drive to allow the transfer of control between program modules to take place.

The format of the MAIL command which is used to run EtherMail is:

```
MAIL [folderdrive] [folderpath] [distributiondrive]  
[distributionpath]
```

The *folderdrive* parameter is the drive specifier for the diskette drive, fixed disk or EtherShare volume which contains your mail folder. If you omit this parameter, the current default drive is used.

The *folderpath* parameter is optional and indicates the DOS directory to be used for your mail folder. If you omit this parameter, the current directory on the folder drive is used. There cannot be any spaces between the *folderdrive* and *folderpath* parameters.

The *distributiondrive* parameter is the drive specifier for the diskette drive, fixed disk or EtherShare volume which contains your distribution list files. If you omit this parameter, the current default drive will be searched for distribution lists.

The *distributionpath* parameter is optional and indicates the DOS directory to be searched for your distribution list files. If you omit this parameter, the current directory on the distribution list drive is used. There cannot be any spaces between the *distributiondrive* and *distributionpath* parameters.

If you use a drive specifier with a pathname, there must be no space between these two parameters. Pathnames must always begin and end with a backslash (\). For further information on DOS pathnames and directories, refer to the DOS 2.0 manual.

# The EtherMail Program

If you use both drive parameters, the folder drive specifier must come first; if you specify a distribution list drive, you must also specify a folder drive, even if it is the same as the default drive.

When you run EtherMail from the batch files described in Appendix B, the drive parameters are supplied automatically. You only need to specify your folder and distribution list drives if you run EtherMail with the MAIL command, as described above.

## Examples

D> **MAIL A: B:**

In this example, the folder is on drive A: and distribution lists on drive B:.

D> **MAIL E:**

In this example, the folder is an EtherShare volume linked to drive E: and distribution lists are on the EtherShare volume linked to D:, the default drive.

D> **MAIL E:\INBOX\ D:\DISTLIST\**

In this example, the folder is the directory INBOX on an EtherShare volume linked to drive E:; distribution lists are in the directory DISTLIST on an EtherShare volume linked to drive D:.

D> **MAIL C:\MAIL\ARCHIVE\ D:\MAIL\DIST\**

In this example, the folder is in the subdirectory ARCHIVE of the directory MAIL on the EtherShare volume linked to drive C:; distribution lists are in the subdirectory DIST of the MAIL directory on the EtherShare volume linked to drive D:.

## Appendix B

# EtherMail Batch Files

---

## EtherMail Batch Files

Four batch files are available for use with the EtherMail program:

- EXECMAIL (supplied with EtherMail)
- LOGIN (supplied with EtherShare)
- NEWINBOX (supplied with EtherMail)
- RENUMBER (supplied with EtherMail)
- RUNMAIL (supplied with EtherMail)

These files include the commands necessary to log in to the network server, link to the EtherShare volume that contains the EtherMail program, create a folder volume, link to that volume, run EtherMail, and renumber your mail folder.

To use these batch file commands successfully, the EtherMail software must be installed on the network server as described in the EtherShare and EtherMail Administrator's Guides.

This appendix lists the contents of the batch files and explains the necessary steps if you do not use these files.

## Diskette Drives

On an IBM Personal Computer with diskette drives only, drive specifiers A: and B: refer to the diskette drives and C:, D:, E: and F: can be used to link to EtherShare volumes. If you have a fixed disk drive, C: is used for the disk and D:, E:, F: and G: can be used for EtherShare volumes. If you have two fixed disks, D: refers to the second disk and E:, F:, G: and H: can be used to link to EtherShare volumes.

The EtherMail batch files use the available drives as follows:

Drive A: The EtherSeries/DOS diskette

Drive B: Available

Drive D: EtherShare SYS.SYS2 volume used for DOS 2.0, EtherShare, EtherPrint and EtherMail software, and distribution lists

Drive E: Your mail folder, an EtherShare volume called INBOX

# EtherMail Batch Files

## Batch File Descriptions

In the listings of the batch files that follow, the /NP (No Prompt) parameter suppresses prompts while the batch file is being executed. If you want to cancel a batch file that has started, press the **Ctrl** and **Break** Keys simultaneously.

### The EXECMAIL Batch File

#### Format

EXECMAIL *username*

#### Function

EXECMAIL combines LOGIN and RUNMAIL into one procedure which logs you in to the network server, links the EtherShare volume INBOX to drive E: and SYS.SYS2 to D:, links to a shared printer, and runs the EtherMail program. EXECMAIL assumes that the INBOX volume already exists and does not create a mail folder volume. This batch file should be copied from the EtherShare SYS.SYS2 volume on to the EtherSeries/DOS diskette before use.

#### Listing

ECHO OFF

Turns off the display of all batch commands as they are read from the batch file.

ES LOGIN %1; LINK D: SYS.SYS2 /NP; LINK E: INBOX /NP

Initiates the ES LOGIN command. The name supplied for the *username* parameter is substituted for the %1 variable. If you omit the *username* parameter, you are prompted for it. Links drive specifier D: to the volume SYS.SYS2 which contains the EtherMail program. Links drive E: to your folder volume, INBOX.

## EtherMail Batch Files

IF ERRORLEVEL 1 GOTO FAIL	Tests for errors. If there were errors, the GOTO is performed and the batch file stops executing. If there were no errors, the next batch file command is used.
D:	Makes drive D: the current default drive.
EP LINK /NP	Links printer PRN: (LPT1:) to the EtherPrint shared printer. You can remove this command from the batch file if you don't have EtherPrint or want to print locally.
IF ERRORLEVEL 1 GOTO FAIL	Same as above.
MAIL E:	Runs the EtherMail program and specifies that your folder volume is linked to drive E:.
IF ERRORLEVEL 1 GOTO FAIL	Same as above.
ES LOGOUT /NP	Logs you out from the network server.
:FAIL	If errors have occurred, the batch file stops executing.
A:	Makes drive A: the current default drive.



# EtherMail Batch Files

## The LOGIN Batch File

### Format

LOGIN *username*

### Function

Logs you in to the network server and links drive D: to volume SYS.SYS2 which should contain the EtherMail program files (MAIL.COM, ZZMAIL.COM and MED.COM), EtherSeries programs (ES.COM, EP.COM), as well as all DOS commands. LOGIN also links you to the EtherPrint shared printer and makes D: the current default drive. The LOGIN batch file was copied to the EtherSeries/DOS Diskette when you installed the EtherSeries software.

### Listing

ECHO OFF	Turns off the display of all batch commands as they are read from the batch file.
ES LOGIN %1; LINK D: SYS.SYS2 /NP	Initiates the ES LOGIN command. The name supplied for the <i>username</i> parameter is substituted for the %1 variable. If you omit the <i>username</i> parameter, you are prompted for it. Links drive specifier D: to the volume SYS.SYS2 which contains the EtherMail program.
IF ERRORLEVEL 1 GOTO FAIL	Tests for errors. If there were errors, the GOTO is performed and the batch file stops executing. If there were no errors, the next batch file command is used.
D:	Makes drive D: the current default drive.
EP LINK /NP	Links printer PRN: (LPT1:) to the EtherPrint shared printer. You can remove this command from the batch file if you don't have EtherPrint or want to print locally.
:FAIL	If errors have occurred, the batch file stops executing.

## The NEWINBOX Batch File

### Format

NEWINBOX

### Function

Creates a new EtherShare volume called INBOX for the user given in the LOGIN command. This volume will be used as the mail folder volume when you run EtherMail from the RUNMAIL or EXECMAIL batch files. NEWINBOX can be used only once for each user name.

### Listing

ECHO OFF

Turns off the display of all batch commands as they are read from the batch file.

ES CREATE INBOX /1 /NP

Creates and formats a single-sided EtherShare volume called INBOX. This volume will be used as your mail folder.

# EtherMail Batch Files

## The RENUMBER Batch File

### Format

RENUMBER

### Function

This batch file rennumbers messages contained in the EtherShare volume INBOX. The highest number that can be assigned to a message in your mail folder is 999. When you reach this number, you have to renumber the messages. Enter "E:" when you are prompted to specify the drive.

### Listing

ES LINK E: INBOX /NP	Links drive E: to INBOX, your folder volume.
IF ERRORLEVEL 1 GOTO FAIL	Tests for errors. If there were errors, the GOTO is performed and the batch file stops executing. If there were no errors, the next batch file command is used.
BASIC RENUMBER	Runs the program which rennumbers your messages. Enter "E:" when you are prompted for the drive specifier.
ES UNLINK E: /NP	Unlinks drive E: from the folder volume.
:FAIL	If errors have occurred, the batch file stops executing.

## The RUNMAIL Batch File

### Format

RUNMAIL

### Function

After you have used the LOGIN batch file, RUNMAIL sets up the EtherShare volume INBOX as your mail folder volume and runs the EtherMail program.

### Listing

ECHO OFF	Turns off the display of all batch commands as they are read from the batch file.
ES LINK E: INBOX /NP	Links drive E: to INBOX, your folder volume.
IF ERRORLEVEL GOTO FAIL	Tests for errors. If there were errors, the GOTO is performed and the batch file stops executing. If there were no errors, the next batch file command is used.
MAIL E:	Runs the EtherMail program and specifies that your folder volume is linked to drive E:.
IF ERRORLEVEL GOTO FAIL	Same as above.
ES UNLINK E: /NP	Unlinks drive E: from the folder volume.
:FAIL	If errors have occurred, the batch file stops executing.

# **EtherMail Batch Files**

## **Making Your Own Batch Files**

If you do not use these batch files, or if you modify them for your own requirements, the following procedures must be included:

- Log in to EtherShare
- Create a mail folder volume if you don't already have one
- Link to the folder volume
- Link to the distribution lists volume, if used and if not on the current default drive
- Run EtherMail with the MAIL command; this is described in Appendix A

# Appendix C

## Error Messages

---

### Error Messages

EtherMail error messages are given in the form of **\*\*\* Error message** and are displayed in the status line at the bottom of the screen. This appendix lists these messages alphabetically, further explains the message, and recommends recovery action. These messages are specific to EtherMail; if you receive an EtherShare error message during the execution of the LOGIN, NEWINBOX, RUNMAIL, or EXECMAIL batch file commands, refer to the EtherShare User's Guide.

<b>Error Message</b>	<b>Meaning/Action</b>
Appears to be an invalid message.	There is an internal problem with this message. Not under user control.
At beginning.	The cursor is already at the first entry in your mail folder.
At end.	The cursor is already at the last entry in your mail folder.
Bad key.	This key can't be used here. Try another key.
Can't close FILE.	An unexpected error occurred when closing this file. Not under user control. If you receive this error message while you are trying to save a newly composed message, you are prompted for an alternate file name in which to store the message so that it will not be lost. This can be any DOS file name, including drive specifier and/or pathname if necessary. When you have corrected the problem that caused the error, copy this file back to your folder using the next available message number as a file name (for example, 46.MSG).
Can't close the attachment.	An error occurred when closing this attachment file. Not under user control.
Can't close the message.	An error occurred when closing this message file. Not under user control.

# Error Messages

<b>Error Message</b>	<b>Meaning/Action</b>
Can't copy within marked area.	The location to which you are moving or copying text cannot be inside the marked area.
Can't create a message file.	The message has been retrieved, but a file cannot be created for it. If your folder is full, delete files or create a new folder, then try again.
Can't create an attachment file.	The attachment has been retrieved, but a file cannot be created for it. If your folder is full, delete files or create a new folder, then try again.
Can't create FILE.	This file cannot be created. Check that you have given a valid DOS file name. If your diskette or volume is full, delete files or use a new diskette. If you receive this error message while you are trying to save a newly composed message, you are prompted for an alternate file name in which to store the message so that it will not be lost. This can be any DOS file name, including drive specifier and/or pathname if necessary. When you have corrected the problem that caused the error, copy this file back to your folder using the next available message number as a file name (for example, 46.MSG).
Can't create the directory file.	If you are using a diskette for your folder, check that the diskette is properly inserted and the drive door is closed. There must also be space for the directory file on the diskette or volume.
Can't delete that file.	Internal error. Check your diskette drive and try again. If unsuccessful, leave EtherMail and use the DOS DEL or ERASE command to delete the file.

<b>Error Message</b>	<b>Meaning/Action</b>
Can't exceed 999 as the max message number on drive X:	999 is the highest message number that can be assigned to a message in your folder. You have reached this maximum and need to renumber the messages. Refer to the RENUMBER batch file in Appendix B. If you receive this error message while you are trying to save a newly composed message, you are prompted for an alternate file name in which to store the message so that it will not be lost. This can be any DOS file name, including drive specifier and/or pathname if necessary. When you have corrected the problem that caused the error, copy this file back to your folder using the next available message number as a file name (for example, 46.MSG).
Can't forward an attachment.	EtherMail messages can be forwarded; attachments cannot.
Can't forward an In Progress message.	An In Progress message has not been sent yet, so cannot be forwarded.
Can't have more than 26 attachment files.	This message has too many attachments. Delete file name(s) from the Attach: field.
Can't have more than 200 recipients.	There are too many addressees for this message. Delete name(s) from the To: or cc: field.
Can't locate:	The names listed cannot be located on any network server. Check that all names are spelled correctly and that any distribution lists used are accessible. If a server is not responding, you can send the message to all other recipients now or wait until that server is available.



## Error Messages

<b>Error Message</b>	<b>Meaning/Action</b>
Can't open attachment file FILE.	Check that you have used the correct file name in the Attach: field. This should include the drive specifier if the file is not on the current drive, and the file extension, if any.
Can't open that file.	If using diskettes, check that the diskette is properly inserted and the drive door is closed. If using an EtherShare volume, the server may be busy. Try again or check that the server is running.
Can't open the attachment.	If using diskettes, check that the diskette is properly inserted and the drive door is closed. If using an EtherShare volume, the server may be busy. Try again or check that the server is running.
Can't open ZZMAIL.COM.	The MAIL.COM program cannot load the ZZMAIL.COM program. Make sure both MAIL.COM and ZZMAIL.COM are resident on your default drive and directory.
Can't read that file.	If using diskettes, check that the diskette is properly inserted and the drive door is closed. If using an EtherShare volume, the server may be busy. Try again or check that the server is running.
Can't read the attachment.	If using diskettes, check that the diskette is properly inserted and the drive door is closed. If using an EtherShare volume, the server may be busy. Try again or check that the server is running.

<b>Error Message</b>	<b>Meaning/Action</b>
Can't read the attachment from the server.	The network server may be busy, so try again in a moment. If unsuccessful, check that EtherShare and EtherMail are running on the network server.
Can't read the current message.	Internal error when returning from the message editor. Try again.
Can't read the directory.	This may be a temporary problem, so try again. If unsuccessful, use the DOS DEL or ERASE command to delete the file MAIL.DIR, then run EtherMail again and a new directory will be created.
Can't read the message from the server.	The network server may be busy, so try again in a moment. If unsuccessful, check that EtherShare and EtherMail are running.
Can't reply to an attachment.	You can reply to any EtherMail message, but not to an attachment.
Can't reply to an In Progress message.	An In Progress message has not been sent yet, so you cannot reply to it.
Can't write the attachment.	If using diskettes, check that the diskette is properly inserted and the drive door is closed. If using an EtherShare volume, the server may be busy. Try again or check that the server is running. Also check if your diskette or volume is full.
Can't write the directory.	If using diskettes, check that the diskette is properly inserted and the drive door is closed. If using an EtherShare volume, the server may be busy. Try again or check that the server is running. Also check if your diskette or volume is full.

# Error Messages

<b>Error Message</b>	<b>Meaning/Action</b>
Can't write the message.	If using diskettes, check that the diskette is properly inserted and the drive door is closed. If using an EtherShare volume, the server may be busy. Try again or check that the server is running. Also check if your diskette or volume is full.
Can't write to the server.	Nothing is being sent to the network server. It may be busy, so try again in a moment. If unsuccessful, check that EtherShare and EtherMail are running.
Directory full, max of 110 messages.	Your mail folder is full. Delete some messages or create a new folder. If you receive this error message while you are trying to save a newly composed message, you are prompted for an alternate file name in which to store the message so that it will not be lost. This can be any DOS file name, including drive specifier and/or pathname if necessary. When you have corrected the problem that caused the error, copy this file back to your folder using the next available message number as a file name (for example, 46.MSG).
Drive id and/or file name required	Supply a DOS file name for the attachment, or supply a drive specifier without a file name to file the attachment under its original name.
Drive not ready.	If using diskettes, check that the diskette is properly inserted and the drive door is closed. If using an EtherShare volume, the server may be busy. Try again or check that the server is running.
Drive write protected.	The diskette or volume on this drive is write protected. Remove the write protect tab from the diskette, or use EtherShare to give the volume private access. Do this only if you are sure you should write information to this diskette or volume.

<b>Error Message</b>	<b>Meaning/Action</b>
Drive X: does not contain a mail directory. Create one (Y/N)?	If this is a new folder, type Y to create a mail directory. If you supplied the wrong drive specifier, type N to leave EtherMail, then run Mail again and give the correct drive specifier.
Drive X: not ready.	If using diskettes, check that the drive door is closed. If using EtherShare volumes, be sure you have linked this drive to the volume. The server may be busy, so try again later, and check that the server is running.
Drive X: write protected.	The diskette or volume on this drive is write protected so you cannot write information to it.
Duplicate header fields.	One of the message header fields (To:, cc:, From:, Subj:, Attach:) has been used more than once in this message. Delete the additional field.
Error setting up the forwarded message.	If using diskettes, check that the diskette is properly inserted and the drive door is closed. If using an EtherShare volume, the server may be busy. Try again or check that the server is running.
Error setting up the new message.	If using diskettes, check that the diskette is properly inserted and the drive door is closed. If using an EtherShare volume, the server may be busy. Try again or check that the server is running.
Error setting up the reply.	If using diskettes, check that the diskette is properly inserted and the drive door is closed. If using an EtherShare volume, the server may be busy. Try again or check that the server is running.

## Error Messages

Error Message	Meaning/Action
Error writing to FILE.	You may have reached the DOS maximum file size, or your diskette or EtherShare volume may be full. Check this and try again. If you receive this error message while you are trying to save a newly composed message, you are prompted for an alternate file name in which to store the message so that it will not be lost. This can be any DOS file name, including drive specifier and/or pathname if necessary. When you have corrected the problem that caused the error, copy this file back to your folder using the next available message number as a file name (for example, 46.MSG).
Ethernet driver not loaded.	You must boot your system with the EtherSeries/DOS diskette before running EtherMail. This loads the Ethernet drivers.
FILE already exists.	The file name already exists on this diskette or volume. You can only use the same name by deleting the original file.
Folder drive X: not formatted.	You must use the DOS FORMAT command to format a new folder before it can be used with EtherMail.
Folder drive X: not ready.	If using a diskette, check that the drive door is properly closed. If your folder is an EtherShare volume, be sure you have linked to this volume. Since the server may be busy, try again in a moment. If unsuccessful, check that EtherShare and EtherMail are running.
Folder drive X: write protected.	Your folder cannot be updated if it is write protected. Remove the write protect tab from the diskette or use EtherShare to give this volume private access.
From name is not you.	The From: field of the message header must contain the name you used to log in to EtherShare.

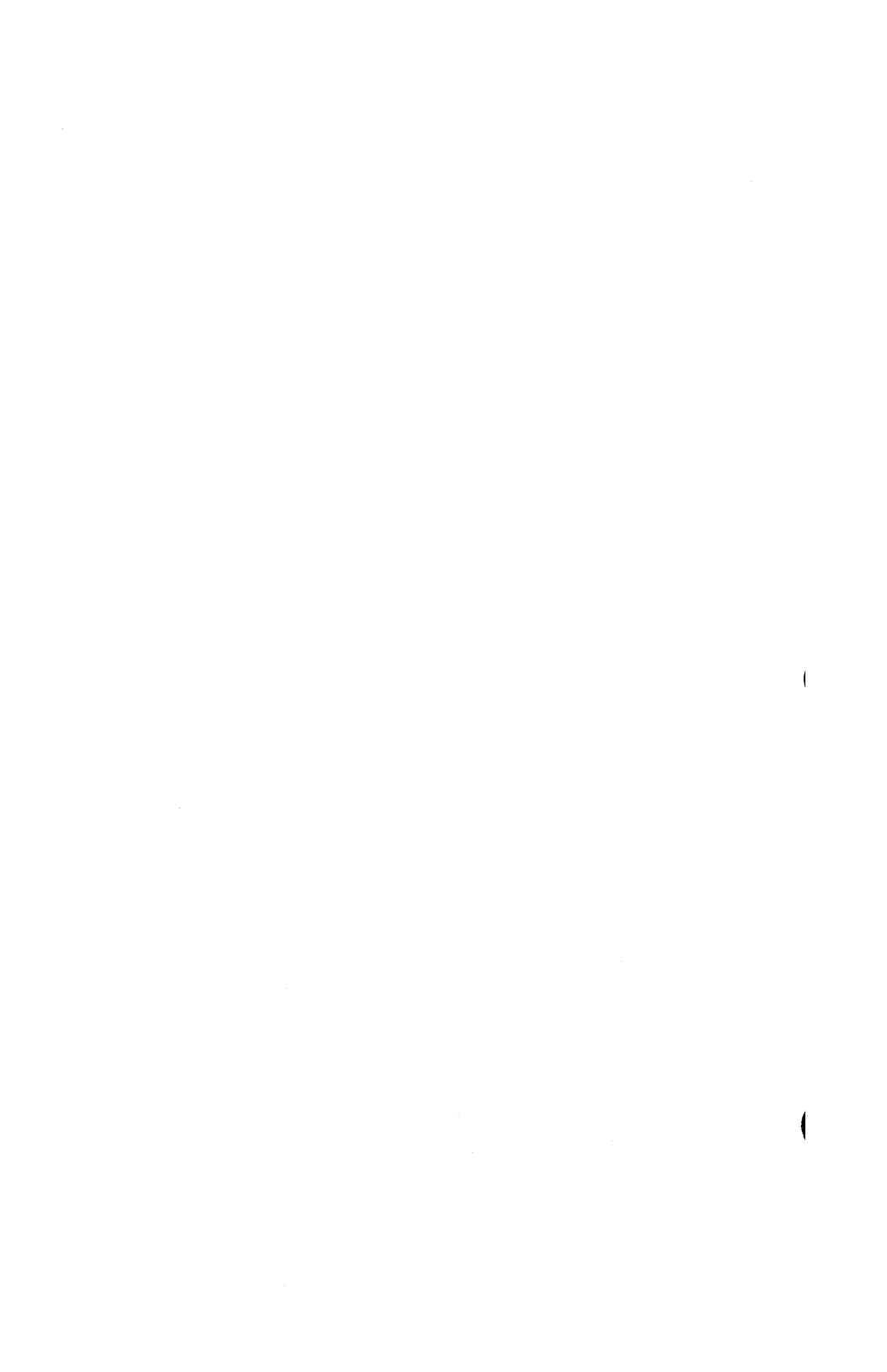
<b>Error Message</b>	<b>Meaning/Action</b>
Incorrect attachment field.	Enter the DOS file name(s) of your attachment(s) on this line. Each file name must be separated by a comma or semicolon.
Incorrect character in a name.	User names can be up to eight characters long (letters, digits and some special characters). This name contains a character that cannot be used.
Incorrect date field.	Internal error.
Incorrect from field.	The From: field must contain an EtherShare user name.
Incorrect to or cc list.	Enter the EtherShare user names of your addressees on this line. Names must be separated with a comma or semicolon.
Invalid drive or path name XXXX for folder.	The drive specifier must be followed by a colon (:); the path name must be followed by a backslash (\).
Invalid drive or path name XXXX for distribution lists.	The drive specifier must be followed by a colon (:); the path name must be followed by a backslash (\).
Message sent, EXCEPT to:	A network server was not responding when the message was sent. The recipients listed did not receive the message.
Must supply a Date field.	Internal error.
Must supply a From field.	The From: field is required and must contain an EtherShare user name.
Must supply a To field.	The To: field is required and must contain the EtherShare user names of your addressees, or distribution list names.
Name too big.	Names cannot be longer than eight characters.

# Error Messages

<b>Error Message</b>	<b>Meaning/Action</b>
No new mail to get.	There is no new mail waiting for you on EtherShare.
No next message.	There are no more messages in your folder.
Not enough memory.	There is not enough memory to complete this move or copy operation. Either mark smaller areas of text for moving/copying, or check that the file is not too large. A message editor file cannot be larger than 25K.
Nothing to delete.	There are no messages in your folder, so nothing can be deleted.
Nothing to file.	There are no messages in your folder, so nothing can be filed.
Nothing to forward.	There are no messages in your folder, so nothing can be forwarded.
Nothing to print.	There are no messages in your folder, so nothing can be printed.
Nothing to reply to.	There are no messages in your folder, so you cannot reply to anything.
Nothing to show.	There are no messages in your folder, so you cannot show any.
Please login first.	You must log in to the server with the ES LOGIN command or the LOGIN batch file before running EtherMail.
Printer access failed.	Check that the printer is properly connected and configured, that it is on-line and has paper in it.
Server not ready ... Are you logged in?	You must log in to EtherShare with the ES LOGIN command or the LOGIN batch file before running EtherMail.

<b>Error Message</b>	<b>Meaning/Action</b>
Server(s) busy:	The servers listed were busy or not running and did not respond when you sent the message. The message was not received by any recipients on these servers; recipients on other servers did receive the message. You can save the message and send it again later.
Skipping file FILE ... not a valid message.	This file is not a valid message. Internal error.
The server is busy ... please try again.	The network server is too busy to respond immediately; try again in a moment. If unsuccessful, check that the network server, EtherShare and EtherMail are all running, and that the network server is not out of disk space. Also check the status of EtherShare and EtherMail.
The server is not responding: the servers listed were either too busy to respond or were not operating.	Confirm that the network server is running and check the status of EtherShare and EtherMail.
Too many parameters ... ignored after XXX.	The MAIL command has only two parameters: the folder drive specifier followed by the distribution lists drive specifier. Any further parameters are ignored.
Value must be supplied.	This field is required. You must enter the appropriate information here.
Write to network failed.	Internal error. Try again. If unsuccessful, the network should be checked.
999 is the max message number.	999 is the highest number that can be assigned to a message in your folder. You have reached this maximum and need to renumber the messages. Refer to the RENUMBER batch file in Appendix B.





# Index

---

## A

- Attach Field, 4-3, 4-9, 4-11
- Attachment
  - definition, 2-4
  - filing, 5-4

## B

- Backspace Key, 6-4
- Batch Files
  - definition, 2-5
  - descriptions, B-1
  - EXECMAIL, B-2
  - LOGIN
    - description, B-4
    - example, 3-1
  - Making your own, B-8
  - NEWINBOX
    - description, B-5
    - example, 3-1
  - RENUMBER, B-6
  - RUNMAIL
    - description, B-7
    - example, 3-2
- Block Operations, 6-19

## C

- cc: Field, 4-2, 4-8, 4-10
- Classifying Messages, 5-6
- Composing a New Message, 4-1
- Concepts and Terminology, 2-1
- Copying Text, 6-20, 6-23
- Creating
  - distribution list, 7-2
  - mail directory, 3-2
  - mail folder, 3-1
- Cursor positioning, 6-7

## D

- Del
  - function key, 5-2, 6-22
  - key, 6-9
- Del2 Function Key, 6-13
- Deleting
  - character, 6-9
  - line, 6-12
  - message, 5-2
  - text, 6-22
  - to the end of a line, 6-13
  - word, 6-10
- DelL Function Key, 6-12
- DelW Function Key, 6-10
- Diskette Drives
  - used with EtherMail, B-1
- Display
  - definition, 2-2
  - main, 3-2
  - message editor, 6-1
- Distribution Lists, 7-1
  - creating, 7-3
  - definition, 2-2
  - editing, 7-4
  - entering names, 7-3
  - saving the file, 7-4
  - sending a distribution message, 7-2
  - using, 7-1
- Done Function Key, 3-7

## E

- Editing
  - distribution list, 7-4
  - message in progress, 5-3
  - text, 6-7
- Editor, see Message Editor
- Entering
  - distribution list names, 7-3
  - message text, 4-4, 6-4
- Error Messages, C-1

# Index

## EtherMail

- batch files, B-1
- diskette drives, B-1
- features, 1-1
- leaving, 3-7
- main display, 3-2
- overview, 1-1
- program files, A-1
- requirements, 1-2
- running the program, 3-1, A-1
- sample display, 2-3

EXECMAIL Batch File, B-2

Exit Function Key, 3-7

## F

### Fields

- Attach:, 4-3, 4-9, 4-11
- cc:, 4-2, 4-8, 4-10
- forward header, 4-10
- From:, 4-2, 4-8, 4-10
- In reply to:, 4-8
- new message header, 4-2
- reply header, 4-8
- Subj:, 4-2, 4-8, 4-10
- To:, 4-2, 4-8, 4-9

File Function Key, 5-4

### Filing

- attachment, 5-4
- message, 5-4

Filling Text, 6-14

Folder, see Mail Folder

Forw Function Key, 4-9

Forwarding a Message, 4-10

From: field, 4-2, 4-8, 4-10

### Function Keys

- definition, 2-4
- EtherMail
  - Del (F3), 5-2
  - Done (F10), 3-7
  - Edit (F7), 4-6
  - Exit (F10), 3-7
  - File (F5), 5-4
  - Forw (F7), 4-10
  - Get (F8), 3-4
  - Help (F1), 3-3

- New (F9), 4-1
- Next (F2), 3-6
- Prnt (F4), 5-1
- Repl (F6), 4-8
- Send (F6), 4-6
- Show (F2), 3-6
- Message Editor, 6-3
  - Copy (F7), 6-20
  - Del (F9), 6-22
  - Del2 (F4), 6-13
  - DelL (F5), 6-12
  - DelW (F3), 6-10
  - Fill (F2), 6-14
  - Mark (F6), 6-19
  - Move (F8), 6-21

## G

Get Function Key, 3-4

Getting Help, 3-3

Getting New Mail, 3-4

## H

Header, see Message Header

Help Function Key

EtherMail, 3-3

Message Editor, 6-3

## I

In Progress Message

editing, 5-3

saving, 5-2

In reply to: Field, 4-8

Indented Text, moving or copying, 6-23

Ins Key, 6-17

Inserting

blank lines, 6-14

text, 6-9

## J

Joining Lines and Paragraphs, 6-16

## L

- \_eaving EtherMail, 3-7
- \_eaving the Message Editor, 4-5, 6-25
- \_ogging in
  - definition, 2-2
  - LOGIN example, 3-1
- \_OGIN Batch File
  - description, B-4
  - example, 3-1

## M

- Mail Directory, 3-2
- Mail Folder
  - contents, 3-3
  - definition, 2-2
  - maintaining, 5-1
  - NEWINBOX example, 3-1
- Main Display
  - example, 3-2
  - returning, 3-7
- Margins, 6-6
- Marking Text, 6-19
- Message
  - classifying, 5-6
  - deleting, 5-2
  - editing in progress, 5-3
  - filing, 5-4
  - forwarding, 4-10
  - new, 4-1
  - next, 3-6
  - printing, 5-1
  - reading, 3-6
  - replying, 4-8
  - saving in progress, 5-2
  - selecting, 3-5
  - sending, 4-1, 4-6
    - to a distribution list, 7-2
  - showing, 3-6
- Message Editor, 6-1
  - block operations, 6-19
  - copy text, 6-20
  - definition, 2-4
  - deleting
    - character, 6-9
    - line, 6-12
    - to the end of a line, 6-13
    - text, 6-22
    - word, 6-10
  - display, 6-1
  - editing text, 6-7
  - entering text, 4-4, 6-4
  - filling text, 6-14
  - function keys, 6-3
  - inserting
    - blank lines, 6-14
    - text, 6-9
  - joining lines and paragraphs, 6-16
  - leaving the editor, 4-5, 6-25
  - margins, 6-6
  - marking text, 6-19
  - positioning the cursor, 6-7
  - replacing text, 6-11
  - run as a separate program, 6-24
  - saving the file, 6-25
  - splitting lines and paragraphs, 6-15
  - status line, 6-2
  - tabs, 6-6
  - TYPE-OVER, 6-17
  - word wrap, 6-4
- Message Header
  - entering, 4-1
  - forward, 4-10
  - new, 4-2
  - reply, 4-8
- Moving Text, 6-21, 6-23

## **N**

- Network Server, definition, 2-1
- New Function Key, 4-1
- New Mail
  - getting, 3-4
  - indicator, 3-3
- New Message Header, 4-2
- NEWINBOX Batch File
  - description, B-5
  - example, 3-1
- Next Function Key, 3-6

## **P**

- Positioning the Cursor, 6-7
- Printing a Message, 5-1
- Prnt Function Key, 5-1

## **R**

- Reading a Message, 3-7
- RENUMBER Batch File, B-6
- Repl Function Key, 4-8
- Replacing Text, 6-11
- Replying to a Message, 4-8
- Requirements for using EtherMail, 1-2
- RUNMAIL Batch File
  - description, B-7
  - example, 3-2
- Running EtherMail, 3-1, A-1
- Running the Editor, 6-24

## **S**

- Saving
  - distribution list, 7-4
  - Message Editor file, 6-25
  - message in progress, 5-2
- Selecting a Message, 3-5
- Send Function Key, 4-6
- Sending a Message, 4-1, 4-6
  - to a distribution list, 7-2
- Show Function Key, 3-6
- Showing a Message, 3-6
- Splitting Lines and Paragraphs, 6-15
- Status Line
  - definition, 2-3
  - message editor, 6-2
  - new mail indicator, 3-3
- Subj: Field, 4-2, 4-8, 4-10

## **T**

- Tabs, 6-6
- Terminology, 2-1
- To: Field, 4-2, 4-8, 4-10
- TYPE-OVER, 6-17

## **U**

- User Names
  - definition, 2-2
- Using the Editor with EtherMail, 6-1
- Using this Manual, 1-2

## **W**

- Word Wrap, 6-4
  - wrap point, 6-5



**Product Comment Form**

We want you to have documentation that meets your needs. Please use this form to participate directly in the documentation process and help us improve our publications.

Tell us of your experience regarding the usability, accuracy, readability, organization, and completeness of this publication.

Name \_\_\_\_\_

Title/Department \_\_\_\_\_

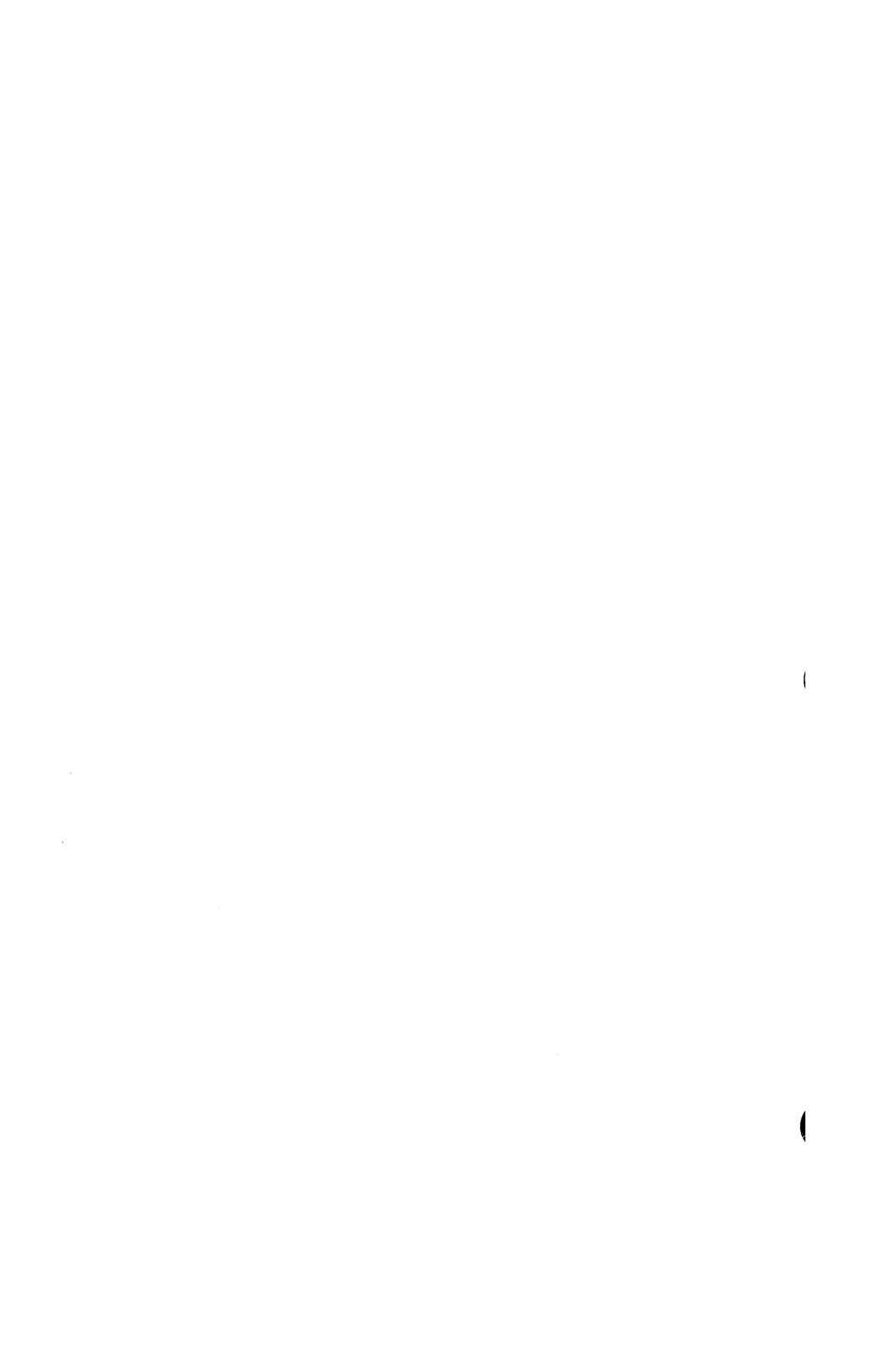
Company Name \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Comments:

Please mail this form to: 3Com Corporation  
1365 Shorebird Way  
P.O. Box 7390  
Mountain View, CA 94039





**Product Comment Form**

We want you to have documentation that meets your needs. Please use this form to participate directly in the documentation process and help us improve our publications.

Tell us of your experience regarding the usability, accuracy, readability, organization, and completeness of this publication.

Name \_\_\_\_\_

Title/Department \_\_\_\_\_

Company Name \_\_\_\_\_

Address \_\_\_\_\_

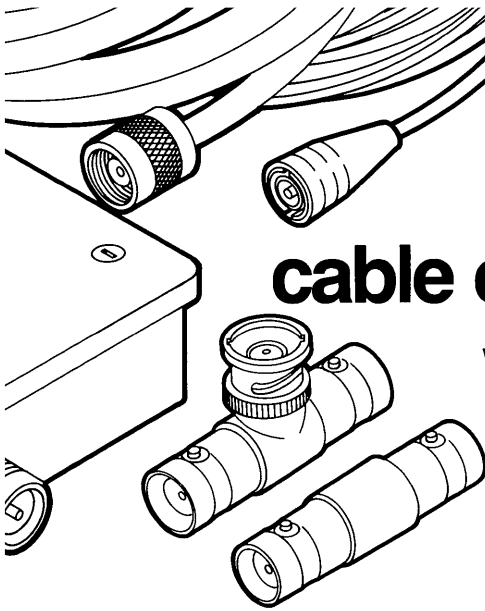
City/State/Zip \_\_\_\_\_

Comments:

Please mail this form to: 3Com Corporation  
1365 Shorebird Way  
P.O. Box 7390  
Mountain View, CA 94039







# ***inmac*** now offers **Ethernet** **compatible** **with 3Com** **Ethernet** **products.**

Congratulations on your purchase of 3Com ethernet network products. You'll expect the highest level of performance from your new equipment, and rightly so, but you must be sure that the cable used to transmit data and instructions to and from your computer is as dependable as your equipment. To interconnect today's powerful micro- and mini-computer systems, your choice of cable is critical.

Arrangements have been made with 3Com for Inmac to supply ethernet compatible cables. These cables are specifically designed and built by Inmac to work with 3Com's ethernet products.

All cables offered meet ethernet and 3Com's thin ethernet standards. Inmac constructs each cable according to strict quality assurance procedures, then rigorously tests them using the industry's most sophisticated equipment. When you order clear signal™ cables from Inmac, you not only get a product that exceeds industry standards for quality, you get them in record time.

Computer manufacturers and distributors may require lengthy lead times in getting cable to you, *if* they have the cables you need. In comparison, all Inmac distribution centers are fully stocked with standard length ethernet and thin ethernet cable. Ethernet cables can also be ordered in custom lengths or with fire-retardant coating.

And, we have a professional staff ready to assist you in ordering ethernet compatible cables. See page three on how to measure your computer environment for ordering ethernet and thin ethernet cable. Next, turn to page six for the phone number of the Inmac branch closest to you. We'll gladly help you find the right cable to suit your system, take your order quickly and efficiently, and ship your cables within 24 hours!

# Thick or Thin Ethernet.

## What's the difference?

**“Thick” ethernet coaxial cable** is designed specifically for ethernet applications. It meets the concise ethernet specifications as called out by DEC, Intel, Xerox, and conforms to the IEEE-802 standard.

Impedance is 50 Ohms  $\pm$  2 Ohms (per MIL standard C17E). Maximum cable loss from one end of the cable to another is 8.5 dB at 10 MHz (equivalent to 50 meters of low loss cable). The foam dielectric core provides a high velocity of propagation.

3Com ethernet cable must be terminated with male N-series connectors. Cable sections are joined with F-F adapters. Cable segments should be terminated with a female N-series connector (can be made up of a barrel connector and a male terminator) having an impedance of 50 Ohms  $\pm$  1% and able to dissipate 1 watt.

This yellow PVC cable is fully shielded to comply with ethernet standards. Four shields provide excellent electromagnetic radiation and susceptibility characteristics.

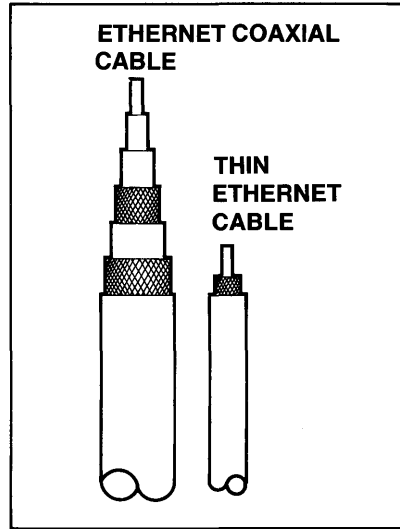
**3Com Thin ethernet cable** is a cabling method developed by 3Com to interconnect IBM personal computers. Thin ethernet cable and connectors maintain most critical ethernet specifications, but offer two major advantages.

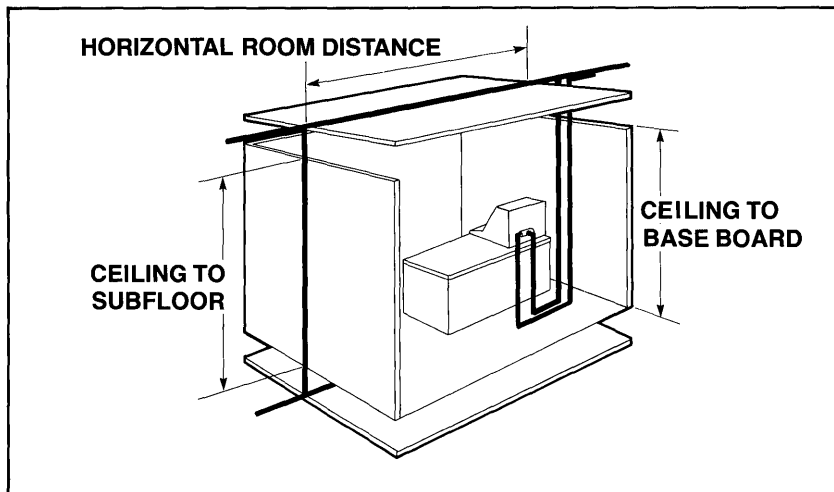
Lower cost is a major consideration. Thin ethernet cable can cost up to 1/3 less per foot than “thick” ethernet cable. Thin ethernet cabling makes it possible to connect up to 100 “desk-top” computers at the same time, and inexpensively.

Thin ethernet cable is 2/10 of an inch in diameter, compared to 4/10 of an inch for standard ethernet cable. This makes it lighter and more pliable. This lighter weight, greater flexibility and smaller size greatly simplify cable routing and installing.

Functionally, the only difference between “thick” and thin ethernet cable when used with 3Com products, is that thin cable segments have a maximum segment length of 300 meters (1000’), while “thick” cable segments may go up to 1000 meters (3300’) when used in conjunction with 3Com products, or 500 meters (1640’) when used with other equipment.

Push on/twist to lock connectors attach directly to 3Com’s Etherlink card and make couplings simple and secure. You can even combine “thick” and thin ethernet cable by means of convenient connectors and adapters.





## How to measure to order cable

Whether you're measuring to order and install "thick" or thin ethernet cable, take into consideration one important item: Allow adequate cable length for corners, contours of a room or office, or stationary obstacles. Don't get caught short due to a simple routing oversight.

Ethernet cable is usually routed from the computer through the ceiling, plenums, or under the floor, connecting transceiver boxes. Your first step is to measure the horizontal distance between transceiver boxes. Remember that maximum cable length is 1000 meters (3300'), when used with 3Com products and 500 meters (1640') when used with other products.

Transceiver cable length is determined by measuring the distance from the transceiver box to the computers (allowing, again, for obstacles and room contour). Up to 100 transceivers may be placed on a cable segment, no closer than 2.5 meters. This will reduce to a very low (but not zero) probability that objectionable standing waves will result.

Measuring thin ethernet cable can be simple if you take care of these important steps. First, measure the horizontal distance between PC's, taking note of the added distance from the wall or conduit exit to the back of each PC.

Next, allow enough cable length for PC movement within a given area. Chances are that your PC will be moved from time to time.

Thirdly, measure the vertical ceiling height (x2 for up and down). Once again, make sure there's adequate cable length for routing cable across before coming down to meet another PC. Remember that the minimum cable distance between PC's is 1 meter (3'). Maximum cable segment length is 300 meters (1000').

Most important to measuring both types of cable is to "think ahead." Anticipate future networking requirements or where you might someday move your computer.

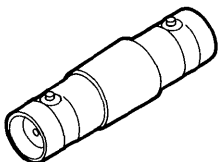
# Thin Ethernet Cable

Thin ethernet cable is now being manufactured by Inmac to work in conjunction with 3Com's ethernet products. This revolutionary new cable maintains the critical ethernet specifications, but offers two advantages. Now, with thin ethernet, connect up to 100 PC's more easily and cost-effectively.

The physical dimensions of thin ethernet cable are as follows: **Core Material:** Polyethelene. **Core O.D.:** .116". **Shield:** Tin copper braid (96%). **Jacket:** PVC. **Jacket O.D.:** .193".

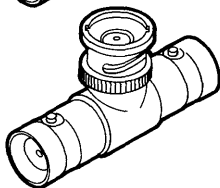
## Thin Ethernet Cable

Inmac Product No.	Length	Qty. each		
		1	2-4	5-9
1060-2H-5	6m (19.8')	\$33.00	\$31.50	\$30.50
1060-3H-5	9m (29.7')	35.00	33.50	32.50
1060-4H-5	12m (39.6')	37.00	35.50	34.50
1060-5H-5	15m (49.5')	39.00	37.50	36.50
1060-6H-5	18m (59.4')	41.00	39.50	38.50
1060-7H-5	21m (69.3')	43.00	41.50	40.50
1060-8H-5	24m (79.2')	45.00	43.50	42.50
1060-9H-5	27m (89.1')	47.00	45.50	44.50
1061-0H-5	30m (99.0')	49.00	47.50	46.50
1061-1H-5	33m (108.9')	51.00	49.50	48.50
1061-2H-5	36m (118.8')	53.00	51.50	50.50
1061-3H-5	39m (128.7')	55.00	53.50	52.50
1061-4H-5	42m (138.6')	57.00	55.50	54.50
1061-5H-5	45m (148.5')	59.00	57.50	56.50



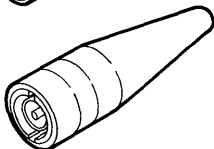
**Barrel Adapter.** Is used to join two pieces of cable to form a longer cable. BNC connector F-F.

Qty. ea.	1	2-4	5-9
<b>No. 1052H-5</b>	\$6.50	\$5.80	\$5.50



**T-Adapter.** Is used to connect thin ethernet cable to 3Com's Etherlink card. BNC "T" connector F-F with male for P.C. card.

Qty. ea.	1	2-4	5-9
<b>No. 1051H-5</b>	\$12.50	\$11.75	\$11.25



**Terminator.** Thin ethernet cable must be terminated at each end with one 50 ohm BNC series terminator. One must be grounded.

Qty. Pr.	1	2-4	5-9
<b>No. 1050 H-5</b>	\$33.50	\$31.00	\$30.00

# Ethernet Cable

3Com Corporation has spent years researching and developing this superior cable to meet industry standards and enhance your ethernet Network. Inmac now proudly offers ethernet cable with our traditional guarantee of in-stock merchandise and fast, courteous service.

The physical dimensions of ethernet coaxial cable are as follows: **Center Conductor:** 0.0855" dia. solid tinned copper. **Core Material:** Foam polyethylene. **Core O.D.:** 0.242" minimum. **Shield:** 0.326" max. shield O.D. (>90% for outer braid shield). **Jacket:** PVC. **Jacket O.D.:** 0.405". Each cable has an insulated N-series male connector at each end.

## Ethernet Coaxial Cable

Inmac		Qty. each		
Product No.	Length	1	2-4	5-9
1062-1H-5	15m (49.5')	\$ 95.00	\$ 88.00	\$ 83.00
1062-2H-5	20m (66.0')	110.00	103.00	98.00
1062-3H-5	25m (82.5')	125.00	118.00	113.00
1062-4H-5	30m (99.0')	140.00	133.00	128.00
1062-5H-5	35m (115.5')	155.00	148.00	143.00
1062-6H-5	40m (132.0')	170.00	163.00	158.00
1062-7H-5	45m (148.5')	185.00	178.00	173.00
1062-8H-5	50m (165.0')	200.00	193.00	188.00

## Ethernet Transceiver Cable

Inmac		Qty. each		
Product No.	Length	1	2-4	5-9
1063-1H-5	5m (16.5')	\$55.00	\$52.00	\$50.00
1063-2H-5	10m (33')	65.00	62.00	60.00
1063-3H-5	15m (49.5')	75.00	72.00	70.00

## Ethernet Connectors/Terminators

Inmac		Qty. each		
Product No.	Description	1	2-4	5-9
1064-1H-5	Terminator Kit (pair)	\$25.00	\$23.50	\$22.75
1064-2H-5	Adapter, F-F	12.00	11.50	11.25

## Adapters: Thin Ethernet to Ethernet

Inmac		Qty. each		
Product No.	Description	1	2-4	5-9
1064-6H-5	Thin to Ethernet (BNC-F to N-F)	\$23.00	\$21.00	\$20.00
1064-7H-5	Thin Ethernet to Trans. Box (BNC-F to N-male)	13.00	11.75	11.25

# ***inmac***



To place your order, call  
your nearest Inmac location.

#### **WEST**

- **Sunnyvale**  
130 S. Wolfe Road  
Sunnyvale, CA 94086  
Phone: (408) 737-7777

#### **SOUTHWEST**

- **Irvine**  
17421 Daimler Street  
Irvine, CA 92714  
Phone: (714) 641-3100
- **Los Angeles**  
Phone: (213) 852-0973

#### **SOUTH CENTRAL**

- **Dallas Area**  
2005 108th Street, Suite 501  
Grand Prairie, TX 75050  
Phone: (214) 641-0024  
Metro (817) 640-9180
- **Denver**  
Phone: (303) 825-6568

#### **MIDWEST**

- **Chicago Area**  
860 E. State Pkwy.  
Schaumburg, IL 60195  
Phone: (312) 885-8383
- **Detroit**  
Phone: (313) 961-6865

#### **SOUTH**

- **Atlanta Area**  
5600 Oakbrook Pkwy.  
Suite 290  
Norcross, GA 30093  
Phone: (404) 441-3041  
TWX: 810 766-4524

#### **MID-ATLANTIC**

- **New York Area**  
91 Ruckman Road  
Closter, NJ 07624  
Phone: (201) 767-3601
- **Washington, DC**  
1003-F George Palmer Hiway  
Lanham Md. 20706  
Phone: (301) 731-5980

#### **NEW ENGLAND**

- **Hudson, N.H.**  
28 Hampshire Drive  
Sagamore Industrial Park  
Hudson, NH 03051  
Phone: (603) 889-4900
- **Boston**  
Phone: (617) 536-9141

**E T H E R M E N U   U S E R ' S   G U I D E**

**for use with  
DOS 2.0, 2.1, and 3.0**

November, 1984

Copyright (c) 1984, 3Com Corporation

P.O. Box 7390  
Mountain View, California 94039  
U.S.A.



1

2

3

## CONTENTS

---

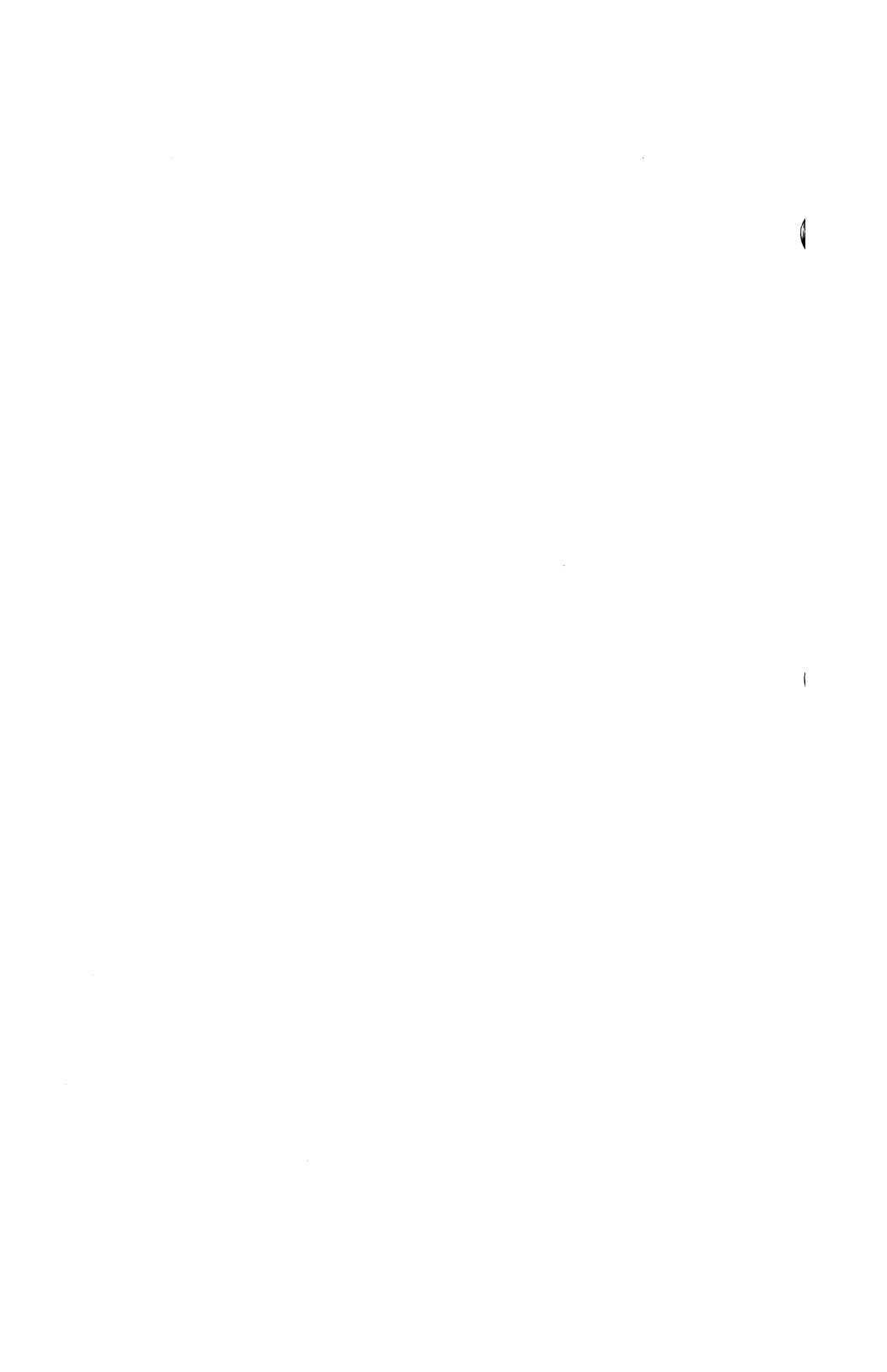
### SECTION 1 - USING ETHERMENU

Introduction .....	1-1
Getting Started .....	1-1
Using Menus .....	1-3
Main Menu .....	1-3
EtherSeries Utilities Menu .....	1-5
DOS Utilities Menu .....	1-6
Performing Network Operations .....	1-9
Selecting an Object .....	1-10
Selecting an Operation .....	1-11
Providing Parameters .....	1-11
Carrying Out a Command .....	1-11
Using the Network Volumes and Printers Menu ..	1-12
Getting Help .....	1-12
Moving the Cursor .....	1-12
Selecting an Item .....	1-13
Entering Parameters .....	1-13
Cancelling a Selection or Command .....	1-13
Leaving EtherMenu .....	1-14

### APPENDIX A - ERROR MESSAGES

#### LIST OF FIGURES

EtherSeries Main Menu .....	1-4
EtherSeries Utilities Menu .....	1-5
DOS Utilities Menu .....	1-6
Network Volumes and Printers Menu .....	1-9



## **SECTION 1**

### **USING ETHERMENU**

---

#### **INTRODUCTION**

EtherMenu allows you to use menus to select the tasks you want to perform. You can use the set of menus and applications provided with your EtherSeries software or you can design your own set of menus. See the EtherMenu/PC Administrator's Guide for information on designing your own menus.

This manual describes the 3Com EtherSeries standard menus that are provided on your EtherMenu Software diskette. It tells you how to choose an option from a menu, respond to questions or prompts that appear on the screen, return to a previous menu, or return to the DOS prompt.

Appendix A lists error messages and corrective actions.

Before you can use EtherMenu, the menus and applications you want to use must be installed. Installation instructions are given in the EtherMenu/PC Administrator's Guide.

Regardless of whether you use the standard menus or customized menus, follow the procedures given in this section to start using the menu system and to choose an option from a menu.

#### **GETTING STARTED**

First start your computer with your EtherSeries/DOS diskette in drive A: or start from your fixed disk, if you have one. If the Main Menu appears immediately (see figure 1-1), you can skip to "Using Menus".

## EtherMenu User's Guide

If the DOS A> or C> prompt appears, you must start the menu system as shown in the following example. In order to use EtherMenu, you must be logged in to a server with your user name. You must link the system volume to drive D: and your INBOX volume to drive E:. The INBOX volume is the one you use for your data files and for your mail, if you are using EtherMail. These steps are described below.

Follow the example below using your own user name. You can type in upper- or lowercase letters. (For detailed descriptions of the ES commands and more information about linking a drive specifier and a volume, see the EtherShare User's Guide.) The symbol ◀↵ represents the ENTER key in all examples in this guide.

The following example works with the recommended EtherMenu installation described in the EtherMenu/PC Administrator's Guide. If the installation has been modified, you will need to get special instructions for starting EtherMenu.

To start EtherMenu:

1. Log in with your EtherShare user name. For example:

```
A> ES LOGIN JENNY ◀↵
```

EtherShare confirms that you have successfully logged in to your server:

```
JENNY logged in to SHARE1.  
Your EtherShare drives are C: through F:
```

2. Link the system volume to drive D: by typing:

```
A> ES LINK D: SYS.SYS2 ◀↵
```

EtherShare confirms that the volume is linked:

```
SYS.SYS2 linked to D:
```

3. Link your INBOX volume to drive E by typing:

```
A> ES LINK E: INBOX ◀
```

EtherShare confirms that your INBOX volume is linked:

```
INBOX linked to E:
```

4. Change the current drive to E: by typing:

```
A> E: ◀
```

5. Start the menu system by typing:

```
E> ESMENU ◀
```

## USING MENUS

The EtherSeries standard menus include a Main Menu, EtherSeries Utilities Menu, DOS Utilities Menu, and Network Volumes and Printers Menu.

### Main Menu

The first menu to appear is the Main Menu. It displays categories of tasks you can perform. When you choose one of the options, a second menu presents a list of specific tasks or commands for you to choose.

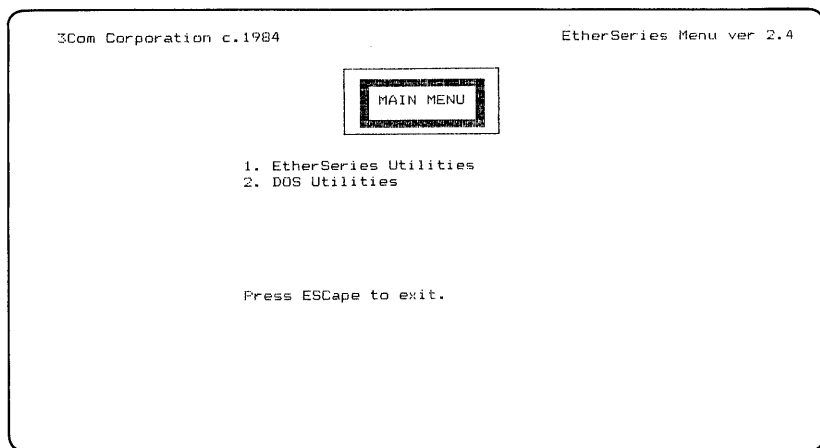


Figure 1-1. Main Menu

To choose an option from a menu, you can use one of three methods:

- Move the cursor to your choice by pressing the ↓ or ↑ cursor movement keys. When the option you want is highlighted, press ←.
- Type the number that corresponds to the option you want. For example, to choose DOS Utilities from the Main Menu, you would type 2.
- Type as many characters as needed to make your choice unique. For example, if the choices are Help, Link, and Logout, you can type H for Help, Li for Link, and Lo for Logout.

After you choose an option, the next menu (a submenu) appears.

You can always cancel what you are doing and return to the previous menu by pressing the **Esc** key. If necessary, you can press **Esc** at the Main Menu to return to the DOS prompt.

## EtherSeries Utilities Menu

If you choose option 1 from the Main Menu, the EtherSeries Utilities Menu appears.

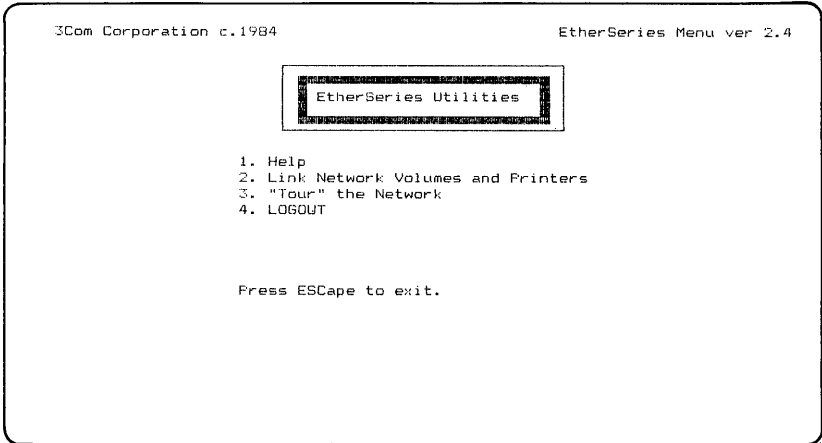


Figure 1-2. EtherSeries Utilities Menu

The choices on the EtherSeries Utilities Menu allow you to do the following:

1. Get helpful information about the EtherSeries Utilities listed on this menu. When you have finished with the Help information, press any key to return to the EtherSeries Utilities Menu.
2. Link network volumes and printers, obtain information about current links, and perform other network operations. Instructions for using this option are given later in this section. See "Performing Network Operations."
3. Take a tour of the EtherSeries network system to see which features are available to you and what the various commands do.
4. Log out; that is, end your connection with the server.



**DOS Utilities Menu**

If you choose option 2 from the Main Menu, the DOS Utilities Menu appears.

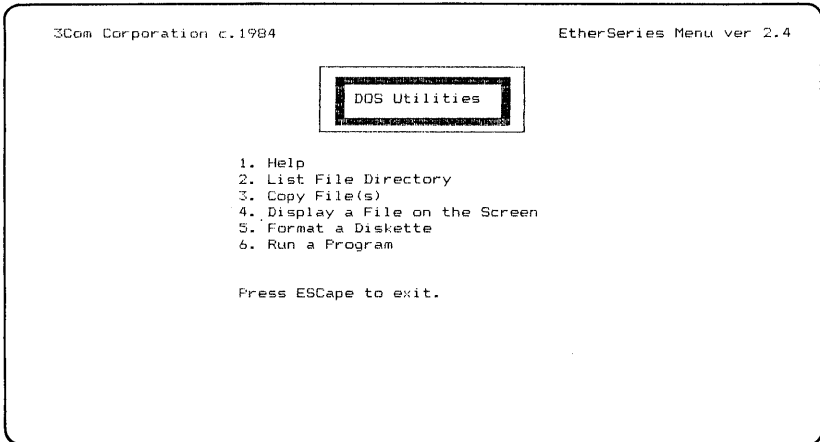


Figure 1-3. DOS Utilities Menu

When you choose an option from this menu, one or two prompts requesting additional information may appear. Type the information and press **←**. Some examples of prompts are given below.

The choices on the DOS Utilities Menu allow you to do the following:

1. Get helpful information about the DOS Utilities listed on this menu. When you are finished with the Help information, press any key to return to the DOS Utilities Menu.

2. List the directory of a specific disk drive. When you are prompted, type the drive specifier followed by a colon and press **←**. For example:

List Directory for what drive? (C:, D:, etc.): **A:←**

In this example, the directory for the diskette in drive A: is displayed. Press any key to display more of the directory or to return to the DOS Utilities Menu after displaying the whole directory.

3. Copy a file or a group of files. Use the standard DOS naming conventions to reply to the prompts. Use DOS wild card characters (\* and ?) if you want to copy more than one file. Press **←** to complete your reply. For example:

Enter the drive and name of file(s) to copy: **B:\*.DOC←**  
Enter the drive and name of new file(s): **A:←**

In this example, files on the diskette in drive B: with the file extension .DOC are copied to drive A:. The files are copied with the same names as the original files. This utility operates just like the DOS COPY command. See your DOS manual for more information about how to specify the files you want to copy.

4. Display the contents of a file on the screen. When you are prompted, type the drive specifier followed by a colon and the name of the file and press **←**. For example:

Enter the drive letter and filename: **A:ACCTLIST←**

In this example, the file ACCTLIST appears on your screen one page at a time. Press any key to display the next page or to return to the DOS Utilities Menu when you finish displaying the file.

5. Format a diskette. When you are prompted, type the drive specifier and press **←**. You can include any of the optional parameters of the DOS FORMAT command after the drive specifier. For example:

In what drive is the diskette to be formatted? **A:** ←  
Enter any optional parameters (/s or /v): **/S** ←

In this example, the diskette in drive A: is formatted and the DOS system files are copied to the diskette as requested by parameter /S. (See your DOS manual for information about the optional parameters.)

6. Run a program. When you are prompted, type the name of the program followed by any parameters required. Then press ←. Use the standard DOS file naming conventions to indicate the program you want to run. For example:

What is the name of the program to run? **A:INQUIRY3** ←  
Enter additional parameters (RETURN to proceed): ←

This example runs a program called INQUIRY3, which is on a diskette in drive A:.

**NOTE:** If a program is located on another drive, typing the drive specifier before the program name allows the menu system to locate only the main program file. It does not change the current drive. Therefore, do not use this menu choice to run a program that consists of multiple files, because only the first file will be located. Also, do not run a DOS command or application that is a .BAT file, because the menu system will not be automatically restarted.

**PERFORMING NETWORK OPERATIONS**

If you choose option 2 (Network Volumes and Printers) from the EtherSeries Utilities Menu, the Network Volumes and Printers Menu appears.

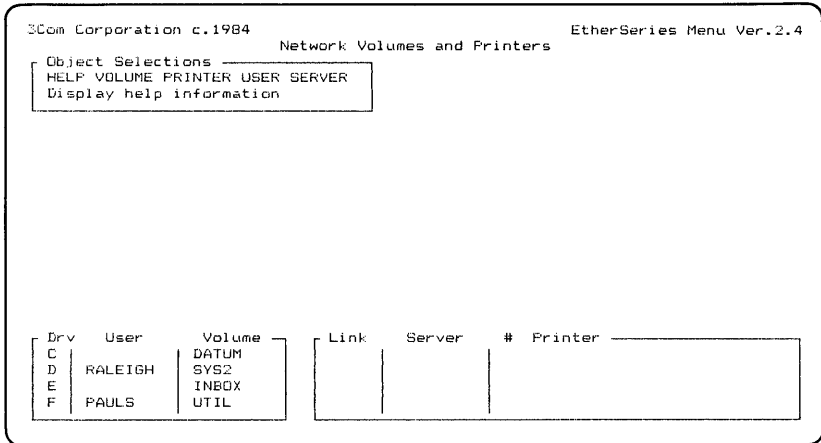


Figure 1-4. Network Volumes and Printers Menu

This menu provides a useful and convenient method for using EtherShare ES commands and EtherPrint EP commands without having to remember the specific command format and parameters.

As you use this menu, refer to the EtherShare and EtherPrint User's Guides for details about the operations you are performing (if you don't already know about them).

The initial Network Volumes and Printers Menu displays the following information:

- Selections you can make from this menu appear in the Object Selections window
- Links that are currently established appear in the status windows at the bottom of the menu

When you use the Network Volumes and Printers Menu to perform a specific operation, you will always follow the same basic steps:

1. Select an object from the Object Selections window.
2. Select an operation from the Operations window.
3. Provide parameters in the parameter window.
4. Carry out the command by pressing **←↵** .

The information on the following pages describes the basic steps in detail, then discusses using the Network Volumes and Printers Menu in general.

## 1. Selecting an Object

The items shown in the Object Selections window are the major categories you can choose from this menu. To select an item (or "object"), press either the **→** or **←** cursor movement keys until the item you want is highlighted, then press **←↵** .

For example, if you want to link to a volume, select **VOLUME** from this menu. A list of specific operations you can perform appears in the Operations window below the Object Selections window. A directory of users and volumes appears in the vertical directory windows at the right of the menu.

## 2. Selecting an Operation

After you choose a major item from the Object Selections window, specific operations appear in the Operations window. To select the operation you want to perform, press either the → or ← cursor movement keys until the operation you want is highlighted, then press ↵. For example, to link to a volume, select **LINK** from this window.

## 3. Providing Parameters

After you choose an item from the Operations window, a parameter window appears below the Operations window. You use the parameter window to fill in specific details about the operation you want to perform -- for example, the name of the volume you want to link to.

To enter information in a parameter window, press the Tab key to move the cursor to the appropriate field, then type the specific information you want to use.

For example, to link to a volume called **INBOX**, move the cursor to the **Volume** field in the parameters window and type **inbox**. For complete information on the parameters you can use with the ES and EP commands, see the EtherShare and EtherPrint User's Guides.

## 4. Carrying Out a Command

When you have selected an item from the Object Selections window, selected a specific operation from the Operations window, and supplied the necessary parameters for the command, press ↵ to carry out the command.

If the command is successful, the parameter window disappears and the cursor moves back to the Operations window. The status window at the bottom of the menu is updated to reflect any new links you have established. Press **Esc** if you want to go back to the Object Selections window.

If the command is not successful, an error message appears in a window at the bottom of the menu. For a description of error messages and recovery procedures, see the Error Messages appendix in the EtherShare or EtherPrint User's Guide.

### Using the Network Volumes and Printers Menu

The following is a general description of using the Network Volumes and Printers Menu. Use this information in combination with steps 1 through 4 on the previous pages. Regardless of the operation you want to perform, you will follow the same steps and use the Network Volumes and Printers Menu in the same way.

### Getting Help

At any time while you are using the Network Volumes and Printers Menu, you can display helpful information about the operation you are performing. Press either the → or ← cursor movement key until the word HELP in the Object Selections window is highlighted, then press ←| . Help information appears at the right of the menu. When you have finished with this information, press any key to remove it from the screen.

### Moving the Cursor

- In the Object Selections or Operations window, move the cursor to the right with the → cursor movement key and to the left with the ← cursor movement key.
- In a parameter window, move the cursor to the next field with the **Tab** key and to the previous field with **Shift-Tab**.
- In a vertical directory window, move the cursor down with the ↓ cursor movement key and up with the ↑ cursor movement key.
- If there is more than one directory window, move the cursor to the next window by pressing the plus (+) key on the numeric keypad (not the plus key on the top row of the keyboard).

- In a directory window, press the **Home** key to move the cursor to the first item listed in the window; press the **End** key to move the cursor to the last item.
- In a directory window, press the **PgUp** key to display the previous window of information; press the **PgDn** key to display the next window.

### Changing Directories

In the vertical directory window, press the  $\uparrow$  or  $\downarrow$  cursor movement keys to highlight the user whose volumes you want to display. Then press the asterisk (\*) on the **PrtSc** key at the lower right of the keyboard. You must use the asterisk on the **PrtSc** key; the asterisk on the top row of the keyboard cannot be used to display a user's volumes.

### Entering Parameters

In the parameter window, press the **Tab** key to move the cursor to the appropriate field and type the parameter you want to use. If there is more than one parameter, move the cursor and type parameters in all necessary fields. If you enter an invalid character, EtherMenu beeps and you must enter an appropriate character (see the EtherShare and EtherPrint User's Guides for complete information on parameters).

If you want to edit an entry in a field, press the **Backspace** key to erase characters and move the cursor to the left. You can then retype the correct characters. If you want to erase the complete entry from a field, move the cursor into the field and press the space bar.

If the parameter you want to use appears in the vertical directory window, you can select it from this window instead of typing it in the parameter window. To select a parameter from the directory window, press the  $\uparrow$  or  $\downarrow$  cursor movement keys to highlight the item you want.

When you have entered all necessary parameters, press  $\leftarrow$  to carry out the command. See Carrying Out a Command earlier in this section.

### Cancelling a Selection or Command

To cancel the current selection or command, press the **Esc** key. Depending on the window you are using, **Esc** has



different results:

- In a parameter window, **Esc** returns you to the Operations window.
- In the Operations window, **Esc** cancels selection of this operation and returns you to the Object Selections window.
- In the Object Selections window, **Esc** returns you to the EtherSeries Utilities Menu.

#### **LEAVING ETHERMENU**

If the Network Volumes and Printers Menu is displayed, press the **Esc** key to return to the EtherSeries Utilities Menu. From the EtherSeries Utilities Menu, press **Esc** to return to the Main Menu. When the Main Menu is displayed, press **Esc** to leave EtherMenu and return to DOS.

**APPENDIX A****ERROR MESSAGES**


---

This appendix lists the error messages that may appear as you use EtherMenu and recommends what to do to recover from an error condition. Error messages that appear while you are using the DOS or EtherSeries Utilities Menus may indicate that there is a problem with the way your menu system has been customized. The EtherMenu/PC Administrator's Guide gives complete instructions on customizing the menu system.

If you see EtherShare or EtherPrint error messages while you are using the Network Volumes and Printers Menu, refer to the Error Messages appendix in the appropriate User's Guide.

<b>Error Message</b>	<b>Meaning/Action</b>
Bad command or filename	DOS is unable to locate the command you have typed or a command that EtherMenu is using. Check the command you typed. If you have used the correct command, see Appendix C of the EtherMenu/PC Administrator's Guide for a recovery procedure.
Can't create RUNIT.BAT - Press any key to Exit.	A disk drive may not be in a ready state or you may have started EtherMenu from a public volume (read-only). Press a key to exit EtherMenu and see Appendix C of the EtherMenu/PC Administrator's Guide for a recovery procedure.

**Error Message**

**Meaning/Action**

---

Drive Not Ready (Abort,  
Retry, Ignore)

DOS is unable to read or write to a drive. Check the diskettes in the drives you are using and make sure the doors are closed. Type R to retry. If the message appears again, type A to abort and then check the drive to determine the cause of the problem.

Invalid Menu Data File - ...

Several messages of this type may appear. Note the circumstances in which the error occurred and see Appendix C of the EtherMenu/PC Administrator's Guide for a recovery procedure.

Unable to open MENU.DAT -  
Please run MAKEMENU first

EtherMenu cannot locate the file containing the menus. You may be running the menu system from the wrong drive or directory or the file may have been accidentally erased. Make sure the current drive is E: and try starting again. If the message reappears, see Appendix C of the EtherMenu/PC Administrator's Guide for a recovery procedure.

## INDEX

---

### C

Cancelling,  
    operation, 1-4  
    selection or command, 1-13  
Carrying out a command, 1-11  
Choosing a menu option, 1-4  
Command,  
    cancelling, 1-13  
    carrying out, 1-11  
Copying files, 1-7  
Cursor,  
    moving on Network Volumes and Printers Menu, 1-13

### D

Diskette, formatting, 1-7  
Displaying a file, 1-7  
Directory, listing, 1-7  
DOS Utilities Menu, 1-6

### E

Entering parameters, 1-11, 1-13  
Error messages, A-1  
Esc key, used in menus, 1-4, 1-13  
EtherMenu,  
    leaving, 1-14  
    starting, 1-1, 1-2  
EtherPrint commands,  
    from Network Volumes and Printers Menu, 1-9/1-14  
EtherSeries Utilities Menu, 1-5  
EtherShare commands,  
    from Network Volumes and Printers Menu, 1-9/1-14  
Executing a command, 1-11

### F

Files,  
    copying, 1-7  
    displaying, 1-7  
    listing, 1-7  
Formatting a diskette, 1-7

## H

- Help,
  - on DOS Utilities Menu, 1-6
  - on EtherSeries Utilities Menu, 1-5
  - on Network Volumes and Printers Menu, 1-12

## I

- Item,
  - selecting from a menu, 1-4
  - selecting from a window, 1-13

## L

- Leaving EtherMenu, 1-14
- Listing files, 1-7
- Logging out, 1-5

## M

- Main Menu, 1-3, 1-4
- Menus,
  - choosing an option, 1-4
  - DOS Utilities, 1-6
  - EtherSeries Utilities, 1-5
  - Main, 1-3, 1-4
- Moving the cursor,
  - on Network Volumes and Printers Menu, 1-12, 1-13

## N

- Network
  - performing operations, 1-9/1-14
  - touring, 1-5
- Network Volumes and Printers Menu, 1-9
  - cancelling a selection or command, 1-13
  - carrying out a command, 1-11
  - displaying, 1-5, 1-9
  - entering parameters, 1-11, 1-13
  - getting help, 1-12
  - moving the cursor, 1-12
  - providing parameters, 1-11, 1-13
  - selecting an item, 1-13
  - selecting an object, 1-10
  - selecting an operation, 1-11
  - using, 1-12/1-14

## O

Object Selection window, 1-10  
Operations window, 1-11  
Option, choosing from a menu, 1-4

## P

Parameters window, 1-11  
Performing network operations, 1-9/1-14  
Printers, Network Volumes and Printers Menu, 1-9/1-14  
Program, running, 1-8  
Providing parameters, 1-11, 1-13

## R

Running a program, 1-8

## S

Selecting,  
    item in a window, 1-13  
    menu item, 1-4  
    object, 1-10  
    operation, 1-11  
Starting EtherMenu, 1-1, 1-2

## T

Touring the network, 1-5

## U

Utilities Menus,  
    DOS, 1-6  
    EtherSeries, 1-5

## V

Volumes, Network Volumes and Printers Menu, 1-9/1-14



# **EtherSeries User's Guide Upgrade**

## **for use with EtherSeries User Software Version 2.4**

---

Because of improvements to the EtherSeries User Software in Version 2.4, new information is required in your EtherSeries User's Guide. In order to make this information available to you and to keep your user's guide current, 3Com is issuing this User's Guide Upgrade Package.

The upgrade package contains additional and replacement pages that you need to insert in your manual. Changed pages are dated at the lower inside corner. In some cases, you will discard pages containing information that is no longer current or accurate; these pages may not be replaced with new information. See the List of Changed Pages for specific information.

Because 3Com product ordering information and non-3Com hardware and software product compatibility information is constantly updated, this information has been removed from the manual. Refer to the latest 3Com Price List for 3Com product ordering information, or refer to the 3Com Product Compatibility Guide for non-3Com product compatibility information.

The EtherSeries 2.4 User's Guide Upgrade Package contains the following:

- EtherSeries 2.4 User's Guide Upgrade cover sheet (this page)
- EtherSeries 2.4 User Software Upgrade Instructions.
- List of Changed Pages
- Replacement pages for the EtherSeries User's Guide
- EtherMenu User's Guide (EtherMenu is a new product included with EtherSeries Version 2.4)

NOTE: EtherSeries User Software Version 2.4 supports DOS versions 2.1 and 3.0 and can be used with the IBM PC, IBM PC XT and IBM PC AT. Therefore, all references to DOS 2.0 and the IBM PC in this upgrade and your existing user's guide also refer to DOS versions 2.1 and 3.0 as well as the IBM PC XT and IBM PC AT. Any specific differences in operation have been noted.

Part Number 0867-01

**0659-02**



6

1

# EtherSeries 2.4 User Software Upgrade Instructions

---

Follow these instructions to upgrade your EtherSeries User Software to Version 2.4. **Disregard these instructions if you are installing EtherSeries 2.4 User Software for the first time.**

The EtherSeries 2.4 User Software Upgrade Package contains a diskette labeled EtherSeries User Software for the IBM PC, Version 2.4. Use this diskette to upgrade your EtherSeries User Software to version 2.4

EtherShare User Software is generally found on each user's EtherSeries/DOS Diskette. You use this diskette to load DOS at your IBM PC before logging into the network server. EtherShare User Software is also found in the system volume, SYS2. This volume stores information shared by all network users.

You can upgrade your EtherSeries 2.0 or 2.1 User Software to version 2.4 by creating a new EtherSeries/DOS Diskette.

To create an EtherSeries 2.4/DOS Diskette:

1. Go to any IBM PC on the network. (Load DOS if necessary.)
2. Insert your current EtherSeries/DOS Diskette in drive A:.
3. Insert the diskette labeled EtherSeries User Software for the IBM PC, Version 2.4 in drive B:.
4. At the DOS A> prompt, type:

A>**B:SETUP** ←

This starts an automatic procedure which installs the new version of the EtherSeries software on the existing user diskette.

5. Remove the user diskette from drive A: and label it ETHERSERIES 2.4/DOS DISKETTE.

If you normally perform EtherSeries Administration functions, upgrade the SYS2 volume by copying the new version of the EtherSeries User Software on to the existing volume.

To upgrade the SYS2 volume:

1. Log in to the server. Use the user name that is the same as the server you are logging in to.

```
A>>ES LOGIN SERVER1 ←↵
```

2. Link to the SYS2 volume.

```
A>>ES LINK SYS.SYS2 D: ←↵
```

3. Insert the diskette labeled EtherSeries User Software for the IBM PC, Version 2.4 in drive A:.
4. Use the DOS COPY command to copy all files from the diskette containing version 2.4 on to the system volume linked to drive D:.

```
A>>COPY *.* D: ←↵
```

5. Repeat this procedure for all volumes on all servers which contain the EtherSeries User Software.

To install the EtherMenu Software, see the installation instructions in the EtherMenu Administrator's Guide.

# List of Changed Pages

---

## **EtherSeries User's Guide**

Title Page	Replace
Warranty Statement	Replace
Contents	Replace
1-1	Replace
1-3	Replace
1-5	Replace
2-5	Replace
2-6A	Replace
2-23	Replace
2-24	Add
B-7	Delete
B-8	Delete
Appendix D	Delete
E-12	Replace
E-13 through E-17	Add

## **EtherShare User's Guide**

Title Page	Replace
4-19	Replace
4-23	Replace
4-29	Replace
Appendix C	Delete
D-7	Replace
Appendix E	Delete
F-2 through F-5	Replace

## **EtherPrint User's Guide**

Title Page	Replace
Contents	Replace
1-1	Replace
2-1	Replace
2-9	Replace
3-6 through 3-13	Replace
B-2	Replace

## **EtherMail User's Guide**

Title Page	Replace
C-10	Replace

## **EtherMenu User's Guide**

Complete New Section	Add
----------------------	-----



# **EtherSeries User's Guide**

**for use with DOS 2.0, 2.1 and 3.0**

**Version 2.4 November, 1984**

**1st Edition December, 1982  
2nd Edition July, 1983  
Upgrade Package May, 1984**

**Copyright © 1983, 1984 by 3Com Corporation  
1365 Shorebird Way  
P.O. Box 7390  
Mountain View, California 94039  
USA**



## LIMITED WARRANTY

3Com warrants this 3Com EtherSeries Networking Product to be in good working order for a period of 90 days (software products) or one (1) year (hardware products) from the date of purchase from 3Com or an authorized 3Com dealer. Should this product fail to be in good working order at any time during this warranty period, 3Com will, at its option, repair or replace this product at no additional charge. Repair parts and replacement products will be furnished on an exchange basis and will be either reconditioned or new. All parts that are exchanged or replaced will become the property of 3Com. This warranty does not include service to repair damage to the product resulting from accident, disaster, misuse, abuse, or non-3Com modification of the product.

While 3Com has made every effort to make the EtherSeries software as easy to use and error free as possible, the programs and reference material are provided "as is," without warranty as to their performance, merchantability, or fitness for any particular purpose. However, diskette media containing EtherSeries software are covered by a 90-day warranty protecting you against failure during that period.

Limited warranty service may be obtained by delivering the product to 3Com or an authorized dealer during the warranty period and providing proof of purchase date. Products returned to 3Com by mail must be sent prepaid and insured (or you must assume the risk of loss or damage in transit), and packaged appropriately for safe shipment.

ALL EXPRESS AND IMPLIED WARRANTIES FOR THIS PRODUCT ARE LIMITED IN DURATION TO A PERIOD OF 90 DAYS (SOFTWARE PRODUCTS) OR ONE YEAR (HARDWARE PRODUCTS) FROM THE DATE OF PURCHASE, AND NO WARRANTIES WILL APPLY AFTER THIS PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

IF THIS PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, YOUR SOLE REMEDY SHALL BE REPAIR OR REPLACEMENT. IN NO EVENT WILL 3COM BE LIABLE TO YOU FOR ANY DAMAGES, INCLUDING LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE SUCH PRODUCT, EVEN IF 3COM OR AN AUTHORIZED 3COM DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY OTHER PARTY.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.





# Contents

---

## Section 1—Introduction

Overview	1-1
EtherLink	1-1
EtherShare	1-2
EtherPrint	1-2
EtherMail	1-3
EtherMenu	1-3
Network Servers	1-4
Administration	1-4
Using this Manual	1-5
EtherSeries Documentation	1-5

## Section 2—Installation

Overview	2-1
Requirements	2-2
Installing the EtherLink Card	2-3
Disconnect System Unit	2-3
Remove System Unit Cover	2-4
Prepare the Expansion Slot	2-5
Set the Transceiver Select Switch	2-6A
Install the EtherLink Card Guide	2-7
Install the EtherLink Card	2-8
Replace the System Unit Cover	2-9
Reconnect Cables and Power	2-9
Install the Adapter Plate Assembly	2-10
Installing the Thin Ethernet Cables	2-12
Connecting Two Computers	2-13
Attach the Cables and Terminators to the T-Adapters	2-13
Ground One Terminator	2-14
Attach the T-Adapter to the Computer	2-15
Adding More Computers	2-15
Adding a Computer to the End of the Network	2-16
Adding a Computer in the Middle of the Network	2-17

# Contents

<b>Installing EtherSeries Software</b> .....	2-18
Installing the Software on a Diskette .....	2-18
Using Two Diskette Drives .....	2-18
Using a Single Diskette Drive .....	2-20
Installing the Software on a Fixed Disk .....	2-22
EtherSeries/DOS Files .....	2-23

## Appendices

<b>Appendix A—Glossary</b> .....	A-1
<b>Appendix B—Using Thick Ethernet</b> .....	B-1
Combining Thin Ethernet with Thick Ethernet .....	B-2
Interseries Adapters .....	B-5
Repeaters .....	B-6
<b>Appendix C—Problem Solving on the Network</b> .....	C-1
The DIAGNOSE Program .....	C-2
Requirements for Testing .....	C-4
Running the DIAGNOSE Program .....	C-5
Controller Failure .....	C-6
Network Failure .....	C-7
Server Failure .....	C-8
Examples .....	C-9
For Information or Repair .....	C-10
<b>Appendix E—Configuring the EtherLink Card and     EtherSeries User Software to use Different DMA,     Interrupts, or Base Addresses</b> .....	E-1

# SECTION 1

## Introduction

---

### Overview

The EtherSeries is a family of integrated hardware and software networking products for IBM Personal Computers. Based on the industry standard Ethernet local network, EtherSeries gives you a fast and powerful system for communicating and sharing information with many other IBM Personal Computer users.

The EtherSeries family of products provides you with a network connection and access to a shared hard disk, as well as electronic mail services and a shared printer. In addition, you can use DOS commands, application programs and data files for other software in the normal way. There is nothing new or different when they are used across the network, except that your capabilities and resources are increased.

There are five EtherSeries products:

- EtherLink
- EtherMail
- EtherShare
- EtherMenu
- EtherPrint

In order to use EtherShare, EtherPrint and EtherMail, you must have a network server connected to the network. The server and server software are separate products and must be purchased separately. They are not included with the EtherSeries User Software. Contact your 3Com dealer or distributor to answer your questions.

### EtherLink

This is the basic product which is the prerequisite to all other EtherSeries products. EtherLink is a printed circuit board that plugs into an expansion slot in your IBM Personal Computer (either the PC or XT version) and sends and receives information across the network. The EtherLink card conforms to the Ethernet specifications and is fully compatible with other Ethernet equipment. It is easily installed by you and requires no special tools.

Thin Ethernet cable is then used to connect together all computers to be included in the network. Once your computer is connected to the network, you can use the EtherShare, EtherPrint and EtherMail network services.

## **Introduction**

### **EtherShare**

EtherShare allows many IBM Personal Computers on an Ethernet network to share a single hard disk. The disk can be the fixed disk on an IBM PC (XT version or PC with compatible add-on disk) or the disk included with a 3Com Network Server.

Depending on the type of disk, you can share disk capacities of 10 or 30 megabytes, or more. Regardless of whether you are sharing an IBM PC fixed disk or a 3Com Network Server fixed disk, the EtherShare software offers the same capabilities to you at your IBM PC. The operation is identical with an IBM PC Network Server or a 3Com Network Server.

The disk is divided into volumes which are treated like the diskettes you use with your Personal Computer. EtherShare volumes can be made public, private or shared. Public volumes usually contain common program and information files for use by everyone on the network; private volumes can be used only by their owner; shared volumes can be accessed by more than one user at a time and are controlled by your own application programs.

### **EtherPrint**

EtherPrint allows many users to print program, data and text files on a shared printer. In this way, the cost of a printer can be shared by all users on the network.

The EtherPrint software is installed on the Network Server, giving it the ability to function as a print server. EtherPrint can control two printers per server.

### **EtherMail**

EtherMail is an electronic mail service for all network users. You can compose, forward and reply to messages and send them to anyone else on the network, as well as read, file and print messages sent to you. You can send messages to a single individual or to an entire group via a distribution list.

The screen-oriented message editor provides easy to use text entry and editing, including many word processing features such as word wrap, automatic insert, and block move, copy and delete operations.

The EtherMail software is installed on the Network Server which acts as EtherMail's post office, holding messages until the recipients request to read their new mail.

### **EtherMenu**

EtherMenu allows you to use menus to select tasks you want to perform. You can use the menus and applications provided with your EtherSeries software or menus and applications designed by you. An application is a program or a sequence of commands that accomplish a task such as copying a file or creating a volume.

Using EtherMenu, you can quickly and simply perform tasks that normally require complicated or lengthy sequences of DOS or EtherSeries commands. Once the commands are set up as an application, you can perform the task using one or two keystrokes to select it from a menu.

For instructions on how to customize the menu system for your own applications, see the EtherMenu/PC Administrator's Guide.

# Introduction

## Network Servers

The EtherShare, EtherPrint and EtherMail services are provided by installing these programs on a Network Server. There are two types of Network Servers that can be used with EtherSeries networks.

An IBM Personal Computer with a fixed disk can act as a Network Server when equipped with the EtherShare/PC, EtherPrint/PC and EtherMail/PC Server software. The IBM PC Network Server is a good server choice when you will have two to eight users per server.

A 3Com Network Server has the same capabilities as an IBM PC Network Server, but has greater storage capacity and can manage more users. This is a good server choice when you will have a greater number of users per server.

Both types of Network Server can be used on the same network. You can have multiple servers of either type operating together to provide disk sharing, printer spooling, and electronic mail on the same EtherSeries network.

## Administration

In addition to the four EtherSeries products, an Administration program runs on each server and manages such functions as starting up and shutting down the server, checking network status, installing network applications, and modifying passwords. The Administration program for the 3Com Network Server also offers a versatile backup function, while the PC Network Server Administration program uses the DOS 2.0 backup facility.

## Using this Manual

Section 2 of this manual gives step-by-step instructions on installing the EtherLink card and EtherSeries software, and cabling computers together. You must read and follow the procedures in this section before attempting to use your computer on the network.

Appendix A is a glossary of terminology.

Appendix B describes using EtherLink with an external transceiver in a "thick" Ethernet network.

Appendix C gives diagnostic and problem solving information.

Appendix D should be removed from this manual.

Appendix E tells you how to configure the EtherLink card and EtherSeries user software to use different DMA, interrupts, or base addresses.

## EtherSeries Documentation

This binder contains User's Guides for all the EtherSeries products. Each manual is self contained with its own table of contents, error messages, and index. You will find a complete reference to each product in these individual guides. An overview of the product and information on using the manual can be found in the introduction to each User's Guide.

The EtherShare Administrator's Guide is provided as a separate manual. It is supplied when you purchase a 3Com Network Server or a Server software package for the IBM PC.





## Prepare the Expansion Slot

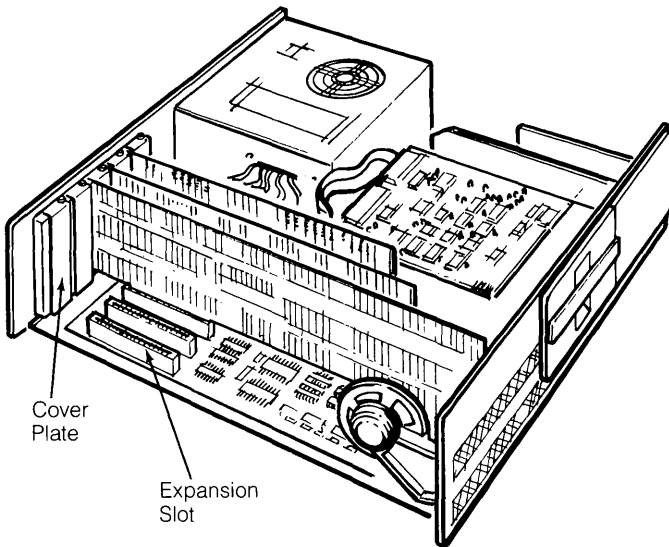


Figure 2-4. Expansion Slot

1. You can install the EtherLink card in any one of the available system expansion slots in the IBM PC or XT. The PC has five expansion slots; the XT has eight. Slot 1 (on the left side when viewed from the front) is recommended since it has the easiest access for the cables.

If you are using EtherLink card assembly number 0345 with an IBM PC AT, you can only install this card in slot one or slot seven.

Remove the screw at the top of the expansion slot cover plate and set it aside.

2. Remove the cover plate. The EtherLink card comes with its own cover plate, but you should keep the original plate in case it is required for future use.

# Installation

## Set the Transceiver Select Switch

OMIT THIS STEP IF you have a new card and are using EtherLink with Thin Ethernet cable. Unless you are using an external transceiver, go on to the next step, Install the EtherLink Card Guide.

If you plan to use your EtherLink card with an external transceiver and transceiver cable, you must change the transceiver select switch as described below.

Two versions of the EtherLink exist. Each version has a different method for switching from on-board to external transceiver. The two versions may be differentiated by their assembly numbers. These numbers are printed on the Etherlink cards. On one version this number is printed along the bottom edge of the card as ASSY 0345-. The other version has the number printed along the top edge of the card as ASSY 34-0780-. Version number ASSY 0345 can only be installed in slots 1 or 7 in an IBM PC AT.

The transceiver select switch is located on the EtherLink card, as shown in figure 2-5 for Assembly 0345 and figure 2-6 for Assembly 34-0780. This switch selects either the on-board transceiver for use with thin Ethernet ("BNC" position) or a connector on the rear panel for use with an external transceiver on thick Ethernet ("DIX" position).

If the on-board transceiver is selected, the BNC coaxial cable connector on the rear panel of the EtherLink card is enabled. If the external transceiver is selected, an Ethernet transceiver cable can be attached to the 15 pin connector, also on the rear panel of the EtherLink card.

## EtherSeries/DOS Files

Your diskette or fixed disk now contains the EtherSeries software, along with DOS and its most frequently used utilities. These files are:

### EtherLink Files:

ES.COM  
EP.COM  
CONFIG.SYS  
ENET.SYS  
LOGIN.BAT  
PRINT.BAS

### DOS Files:

ANSI.SYS  
ASSIGN.COM  
BASIC.COM  
CHKDSK.COM  
COMMAND.COM  
COMP.COM  
DISKCOMP.COM  
DISKCOPY.COM  
EDLIN.COM  
FIND.EXE  
FORMAT.COM  
GRAPHICS.COM  
MODE.COM  
MORE.COM  
PRINT.COM  
SORT.EXE  
SYS.COM  
TREE.COM

Due to space constraints, BASICA.COM and some DOS utilities have not been included on your EtherSeries/DOS diskette (this does not apply if you are using a fixed disk). If you need to use either of these, delete a file from the EtherSeries/DOS diskette with the DOS DEL or ERASE command. You can then use the DOS COPY command to copy the file you need from the DOS master diskette to the EtherSeries/DOS diskette.

**Note:** The software installation procedure copies a system configuration file (called CONFIG.SYS) into the root directory of the diskette or fixed disk you use to boot the system. If you already had a CONFIG.SYS file, it has been saved as CONFIG.OLD. If you were using it to set the DOS configurable parameters or install other device drivers, you will have to merge the CONFIG.SYS and CONFIG.OLD files manually. The EtherSeries configuration file contains one entry:

```
DEVICE = ENET.SYS
```

## Installation

You can add other entries to this file by putting them after this entry using EDLIN. Alternatively, you can add this entry at the beginning of your original CONFIG.SYS file. If you are using the CONFIG.SYS file to add a driver for another block device (such as a disk), the order of the entries will affect the letters assigned to the drives. When you log in to EtherShare, you will be told which drive letters are available. If you are using a non-IBM disk drive, you must modify the CONFIG.SYS file to include entries for both the disk driver and the network driver. Be sure the entry for the network device driver comes after the entry for all other installable device drivers. The line `DEVICE = ENET.SYS` should be at the end of the file.

When the EtherSeries software and EtherLink card have been installed, and all computers have been connected to the network, you can use the EtherSeries software products as described in the EtherShare, EtherPrint and EtherMail User's Guides.



# Using Thick Ethernet

Adapters between Standard and Thin Ethernet	3Com Model Number
Thin Ethernet Cable to Standard Ethernet Cable Adapter (BNC female to N-series female)	3C540
Thin Ethernet Cable to Ethernet Transceiver Adapter (BNC female to N-series male)	3C541

Components for Fabricating Ethernet Cables	3Com Model Number
Bulk Thin Ethernet Cable, xxx meters (minimum length 200 meters)	xxx
Bulk Ethernet Coaxial Cable (minimum length 100 meters)	
Insulated Coaxial Cable (male connector)	3C542
Ethernet Transceiver Adapter (BNC female to N-series male)	3C150

**Please remove this page from your User's Guide.**

## Ethernet Components

## Appendix D

# Using EtherSeries Products with IBM PC Compatibles

---

The following information has been compiled for your convenience. While every effort has been made to assure its accuracy, no guarantee can be made because of the changing nature of the IBM PC compatible marketplace and products.

The Version 2.2 (and later) EtherSeries User and Server Software will operate correctly with most MS-DOS 2.0 (and later) or Windows 3.11 operating systems. In addition, network-dependent timing functions may be replaced by operating system calls to make the software run faster on a faster CPU.

Contact your dealer for further information on EtherSeries and IBM PC compatibility.

The following compatibility information is provided for your reference.

### Compaq

**Please remove this page from your User's Guide.**

Slot 1 (nearest the back of the chassis)

If the Compaq is recessed, a different slot may be required to connect to the Thin Ethernet network. This slot is labeled "Com", model number 3C539A.

### Columbia

Early versions of the Columbia paralleled printer port were incompatible with IBM's.

### Corona

The Corona fixed disk uses I/O addresses that conflict with EtherLink card. You may reconfigure the EtherLink to use a different base address. (280H is suggested.)



## Using EtherSeries Products with IBM PC Compatibles

### Eagle

There are no differences. (PC + and XL only. Turbo untested at this printing.)

### Televideo

EtherLink plugs into single PC-type exp

**Please remove this page  
from your User's Guide.**

To change the base address, locate the jumper corresponding to the address bit you want to select.

- To set the address decoding logic to recognize a "1", place the jumper cover so that it fits over the center and lower pins on the jumper block.
- To set the logic to recognize a "0", place the jumper cover to fit over the center and top pins.

The EtherLink card can be set to select any I/O address block starting between 0 and 3F0H, inclusive. In the figure, the I/O Base Address is set for 300H.

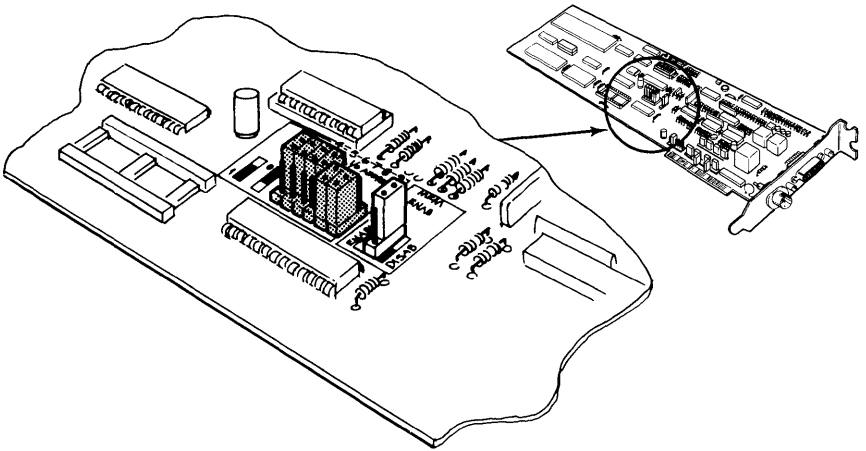


Figure E-9. I/O Base Address Jumpers (Assembly No. 34-0780)

## Modifying the EtherSeries User Software

If you change the DMA channel or I/O Base Address, you must modify the EtherSeries network driver program which is contained in the file ENET.SYS. This is stored on your EtherSeries/DOS boot diskette, or on your fixed disk drive if you have an XT and boot from the fixed disk.

The EtherSeries User Software does not use interrupts.

# Configuration

## Making Changes to Driver Programs

You use the program CONFIG.EXE to change the I/O base addresses and the DMA channel values in the EtherSeries software to correspond to the changes you have made to your EtherLink card.

The CONFIG program is part of the EtherSeries User Software.

## Running the CONFIG Program

You can use the CONFIG program to change your EtherSeries/DOS diskette or to change the network driver on your fixed disk.

## Changing Your EtherSeries/DOS Diskette

1. Insert the EtherSeries User Software Diskette in drive A:.
2. Set the default drive to A:.

```
D> A: ←
```

3. At the prompt, type:

```
A> CONFIG ←
```

This displays the EtherSeries Configuration Menu.

```
3Com Corporation

=====
|| EtherSeries Configuration ||
=====

The following items may be configured:

    1 - I/O Base Address
    2 - DMA Channel
    3 - Interrupt Level
    4 - Input(s) complete

Please enter options:
```

Figure E-10. The EtherSeries Configuration Menu

4. When the menu is displayed, remove the EtherSeries User Software Diskette and insert your EtherSeries/DOS diskette in drive A:. You can begin selecting items from the menu to make changes.

## Changing the Network Driver on Your Fixed Disk

1. Insert the EtherSeries User Software diskette in drive A:.
2. Set the default drive to C:.

```
A> C: ←
```

3. Set the default directory to the root directory. Type:

```
C> CD \ ←
```

4. Run the CONFIG program.

```
C> A:CONFIG ←
```

This displays the EtherSeries Configuration Menu.

5. When the EtherSeries Configuration Menu is displayed, remove the EtherSeries User Software Diskette from A: and begin selecting items from the menu to make the necessary changes.

## Changing the I/O Base Address

1. Select item 1 (I/O BASE ADDRESS) on the EtherSeries Configuration menu.
2. Type the new base address at the prompt.

```
I/O Base Address can be from 0H through 3F0H  
Please enter new I/O Base Address: 300 ←
```

This example changes the I/O base address to the hexadecimal value 300.

If you are using the EtherLink Card with Assembly Number 0345 you can use an address between 200 and 3F0. The EtherLink Card with Assembly Number 34-0780 uses addresses between 0 and 3F0. See Installing the EtherLink Card in this manual to identify the EtherLink card you are using.

## Configuration

### Changing the DMA Channel

1. Select item 2 (DMA CHANNEL) on the EtherSeries Configuration menu.
2. Type the new DMA channel number at the prompt.

DMA Channel can be 1, 2 or 3  
Please enter new DMA Channel: **1** ←

This example changes the DMA channel to channel 1.

If you are using the EtherLink Card with Assembly Number 0345, you can use DMA Channels 1 or 3. Assembly Number 34-0780 uses 1, 2, or 3.

### Changing the Interrupt Level

The EtherSeries Configuration Menu provides Interrupt Level as a choice. However, EtherSeries User Software does not use interrupts, so you will not need to use this option.

1. Select item 3 (INTERRUPT LEVEL) on the EtherSeries Configuration menu.
2. Type the new interrupt level at the prompt. (EtherSeries software does not use interrupt levels.)

Interrupt Level can be 2 through 7  
Please enter new interrupt level: **3** ←

This example changes the interrupt level to 3.

The EtherLink card with Assembly Number 0345 uses interrupts 3 or 5; Assembly Number 34-0780 uses 2 through 7.

## Saving the Configuration Changes

1. Select item 4 (INPUT(S) COMPLETE) on the EtherSeries Configuration menu.
2. Check the new values that are displayed.

The changes are:

I/O 300  
DMA 1  
INT 3

Are these correct (y or n)?

3. Type **Y** if the correct values are displayed. At this point the appropriate changes are made to the driver file. When the changes have been successfully made, a message is displayed.

ENET.SYS has been changed.

If you respond **N** to the prompt, you see the message "Cancelled by user" and the DOS prompt is redisplayed. Run the CONFIG program again to enter the changes you want to make.

# Configuration

## Error Messages

Configuration error messages are displayed in the form of **\*\*\*ERROR message**.

All error messages related to changing the configuration are listed here alphabetically. In addition to the message, the list includes an explanation and a recommended recovery.

The word FILENAME represents the name of the driver file. The actual filename is substituted when the message is displayed.

<b>Error Message</b>	<b>Meaning/Action</b>
Cannot close file FILENAME	An error occurred while the changed file is being closed. Try running the CONFIG program and making the change again. If it does not work on the second try, reload FILENAME from your backup diskette.
Cannot find file 3C*.VER	Cannot find at least one file of the type 3C*.VER. Check that 3C*.VER file is located and the files to be changed are on the default drive.
Cannot open file FILENAME	File could not be opened to make the change. Try running the CONFIG program and making the change again. If it does not work after the second try, reload FILENAME from your backup diskette.
Cannot read file FILENAME	An error occurred while the file was being read to make the change. Try running the CONFIG program and making the change again. If it does not work after the second try, reload FILENAME from your backup diskette.
Cannot seek to beginning of file FILENAME	An error occurred while moving to the beginning of the file you want to change. Try running the CONFIG program and making the change again. If it does not work after the second try, reload FILENAME from your backup diskette.

<b>Error Message</b>	<b>Meaning/Action</b>
Cannot write to file FILENAME	An error occurred while trying to write the file back to 3SHARE.VER. Check to make sure there is enough space on the diskette (6000) bytes. Use the DOS CHKDSK command to be sure the diskette is not defective. Try running the CONFIG program and making the change again. If it doesn't work after the second try, reload FILENAME from your backup diskette.
Input error	Any key other than a menu item was pressed while the Configuration menu was displayed. Run CONFIG again and type an appropriate menu item number.
Invalid DMA channel	You entered a number other than 1 or 3 for the new DMA channel. Type 1 or 3. Run CONFIG again and type 1 or 3.
Invalid I/O base address	The number you entered for the I/O base address was not in the range of 0H to 3F0H. Run CONFIG again and type a number in the correct range.
Invalid interrupt level	The number you entered for the interrupt level was not between 2 and 7. Run the CONFIG program and type a number between 2 and 7.







# **EtherShare User's Guide**

**for use with DOS 2.0, 2.1 and 3.0**

**Version 2.4    November, 1984**

Copyright © 1983, 1984 by 3Com Corporation  
1365 Shorebird Way  
P.O. Box 7390  
Mountain View, California 94039  
USA



# ES MODIFY and ES RENAME Commands

## Remarks

Public access volumes can be linked by many users at once. They have read only access; the owner, however, can also write to the volume. Public volumes often contain program files which all network users need.

Shared volumes have read-write access and may be linked for use by many users at the same time. These volumes usually contain data which is changed by different users. Since several users can access the volume to change data at the same time, access must be synchronized by setting and checking "in use" status flags called semaphores. Programs must use these semaphores in order to prevent simultaneous access which could result in a loss of data.

This command has two forms, ES MODIFY (or ES MOD) and ES RENAME (or ES REN). You can use either form to change the volume name, the password and the access. The size of the volume cannot be changed.

You must be the owner of the volume to use the ES MODIFY or ES RENAME commands.

Volumes cannot be modified while they are linked to a drive specifier.

The ES MODIFY command is used to change the access of volumes from private to public or shared after the volume has been created and files have been loaded.

After a volume has been changed to public, the owner may still write to the volume. In this way, one person may change the files on a volume while others are linked to and using it. The owner of a public volume should use caution when modifying files on such a volume.

When you change the name of an EtherShare volume, the new name is displayed when you list all volumes with the ES DIR command. However, if you list the volume names with the DOS DIR command, the original volume name is displayed. Using the ES MODIFY or ES RENAME command does not change the volume name in the DOS directory.

## ES MODIFY and ES RENAME Commands

### Examples

#### Prompted

```
A> ES MODIFY ? ←  
Volume? MEMOS ←  
New name? ←  
New password? ←  
New access? /PUB ←  
MEMOS modified.
```

Changes only the access. The name and password do not change. Even though you want to change only the access, EtherShare prompts you for all parameters. Press the ← key to keep the existing one and display the next prompt.

```
A> ES RENAME ? ←  
Volume? REPORTS ←  
New name? REGION1 ←  
New password? ←  
New access? ←  
REPORTS modified.
```

Changes the name of the EtherShare volume from REPORTS to REGION1.

#### Unprompted

```
A> ES MODIFY PROGRAMS /PUB ←  
PROGRAMS modified.
```

Changes the access to public. In general, only volumes which several EtherShare users need should be public.

```
A> ES MOD VOLUME1 ( ) ←  
VOLUME1 modified.
```

Removes the password from VOLUME1.

```
A> ES RENAME VOLUME1 VOL1 ←  
VOLUME1 modified.
```

Changes the name of the volume from VOLUME1 to VOL1.

## ES UCREATE Command

Adds a new user to EtherShare.

### Format

```
ES UCREATE username
```

### Parameters

*username*

The name which will identify this person as an EtherShare user. The name can be up to eight characters in length. No two users on the network can have the same user name.

### Remarks

Any user can use the ES UCREATE command to add a new user name to EtherShare.

If your Ethernet network has more than one EtherShare server, you must use a name that is unique on all the servers. No two users can have the same user name, even if they are using different servers. When a new name is created, all servers are checked to be sure the name does not duplicate one already on the network before the new name is added.

Once a new name has been added to the directory, the user can log in and use the ES UMOD command to assign a password.

If you try to create a new user, but cannot, the error message may indicate that the server is out of disk space. Delete unused or obsolete volumes on the server disk or add an expansion disk to the network server. See the EtherShare Administrator's Guide for more information.

### Examples

#### Prompted

```
A> ES UCREATE ? ←  
Name? CAROLR ←  
Checking for CAROLR on server SHARE1...  
CAROLR added.
```

This example adds the name CAROLR to server, SHARE1.

## ES UCREATE Command

### Unprompted

```
A> ES UCREATE JEFFM ←  
Checking for JEFFM on server SHARE1...  
JEFFM added.
```

This example adds the name JEFFM to server SHARE1. This is the log in name for this user. EtherShare checks to be sure the name is not currently in use before accepting it.

## ES UMODIFY Command

Adds or changes the password assigned to your user name.

### Format

```
ES UMOD[IFY] (newpass)
```

### Parameters

(*newpass*)

Changes the password assigned to your user name. The password must be enclosed in parentheses. Use an empty parentheses ( ) to remove a password.

### Remarks

If you are a new user, you can assign a password to your name with this command. You can also change or remove an existing password. You cannot remove or clear a user password if the user log in name contains any punctuation symbols (! , ; ; " ' ?); only letters and numbers are allowed in the user name. This applies to the password also. Symbols and numbers are not allowed in the user name password.

You must enclose the password in parentheses when you use this command.

This command has two forms, ES UMODIFY and ES UMOD. You may use either form.

### Examples

#### Prompted

```
A> ES UMOD ? ←  
New password? (MINE) ←  
STEVEP modified.
```

Assigns or changes a password associated with an EtherShare username. This password must be given when you log in. The password is not displayed when it is entered.

#### Unprompted

```
A> ES UMOD (FORGET) ←  
USER2 modified.
```

Assigns or changes the password which belongs to the logged in user name.



## ES UNLINK Command

### ES UNLINK Command

Ends the link between a drive specifier and an EtherShare volume.

#### Format

ES UNLINK *drive*

ES UNLINK [*username.*]*volname*

#### Parameters

*drive*

The drive specifier to which the EtherShare volume is linked.

[*username.*]*volname*

The name of the EtherShare volume to which you are currently linked. The *username* parameter is the owner's name. The owner's name is required if the volume does not belong to you. Separate the user name and the volume name with a period (.).

#### Remarks

Use the ES UNLINK command to end the link between the drive specifier and an EtherShare volume. This makes the drive available to link to another volume. It also releases private volumes for use by other EtherShare users.

You can unlink by identifying either the drive specifier to which an EtherShare volume is linked or by supplying the linked volume name.

You can unlink all volumes by specifying an \* in place of a drive specifier.

## Appendix C

# Using Purchased Software

## Using Purchased Software

There are many purchased software programs which can be used with the network. These programs are used in the normal way, except that you have the added advantage of being able to access data files on an EtherShare volume and print files on a shared printer.

Examples of loading and using purchased programs are given in Section 3.

Table C-1 lists purchased software which can be used on the network and shows how you would run the program.

To run these programs, insert the software diskette in drive A: (your own diskette in drive B:), and type the command given in table C-1. If the program does not load, type the command AUTOEXEC.PC. If you are using a network, type the command NET USE followed by the network name and the path to the program. Refer to the manual for more information on using the network.

**Please remove this page from your User's Guide.**

		<b>Self-Loading</b>
Stamps	STAMP	Yes (AUTOEXEC)
WordPerfect	WP	No
Easy	EW	No
pfs: FILE	FILE	Yes (AUTOEXEC)
pfs: REPORT	REPORT	Yes (AUTOEXEC)
pfs: GRAPH, 1	GRAPH	Yes (AUTOEXEC)
VisiDesktop/Plan	BASIC MENU	Yes (AUTOEXEC)
VisiFile	VF	Yes (AUTOEXEC)

Table C-1. EtherShare Compatible Software

## Using Purchased Software

### Using Purchased Software

These and any other programs which meet the following criteria can be used with EtherShare:

- Must use IBM PC DOS Version 2.0, or MSDOS Version 2.0
- Must use the standard diskette driver and/or the standard printer driver
- Must be relocatable
- When loaded into memory, the program and data must fit in the approximately 5400 bytes available for the program
- Must not depend on linking to EtherShare or other programs running. All data to be accessed must be contained in the application program.

Purchased software that is not listed here are:

- EasyWriter
- WordPerfect

**Please remove this page from your User's Guide.**

For information on software compatibility with software not listed here, call technical support number, (415)964-5561.

## Remarks

Only application programs that are written specifically to use EtherSeries semaphores can reliably access and modify files in a shared volume. Single user applications, such as most word processing programs, spreadsheets and decisions support tools should **never** read or write files in a shared volume since data loss could result.

If you plan to have several programs running concurrently and reading and writing to files on the same volume, you should be familiar with the way DOS allocates file space, uses the File Allocation Table (FAT) and directories, and buffers sub-block reads and writes. (See Appendixes B, C, and D of the IBM Disk Operating System Manual.)

Shared files should be fixed length, and if they are to change size, you should preallocate the space. This is necessary to ensure that Personal Computers sharing the same files have a valid copy of the File Allocation Table (FAT). DOS keeps a copy of the File Allocation Table in each Personal Computer. This table keeps track of all disk blocks, for example, which blocks currently belong to a file and which ones are free. The table is read from the disk when a file is opened and is rewritten when a file is closed. By preallocating space for shared files, you ensure that all PCs sharing those files will have a valid copy of the FAT.

A request to lock a semaphore initiates a search of the list of those currently locked. If no match is found, the named semaphore is entered into the list of locked semaphores. The list in each server can contain up to 150 names. If a match is found, then the status "semaphore currently locked" is returned. Alternatively, the program can request to wait until the lock succeeds.

It is possible to receive an Error 9, Semaphore already locked by this PC, or an Error 1, Semaphore not locked, the first time you try to lock or unlock a semaphore. If you are trying to lock a semaphore and receive an Error 9, unlock the semaphore then lock it again. If you are trying to unlock the semaphore and receive an Error 1 on the first try, proceed as if the unlock was successful.

Programs using semaphore operations to lock records or files should do so for the shortest time possible so that other programs are not blocked.

# Semaphores

When using the LOCK/RETURN function, care should be taken to ensure that the operation, if unsuccessful, is not immediately tried again. Your program should delay before retrying the operation. Otherwise, you will "flood" the network server with requests which must be processed. Rapid retransmission of lock requests may cause the server to be less available for processing other IBM PC's requests for disk or printer access.

If a Personal Computer has a lock in effect and is turned off or goes down, the lock remains in effect and can block other programs. Locks that have been set can be cleared by:

- using the UNLOCK function
- logging out from the server
- logging in as a new user
- rebooting your IBM Personal Computer
- using the Administration functions from a server (See the EtherShare Administrator's Guide)

Each lock is associated with the Ethernet address of the Personal Computer that requested the lock. You must request the unlock from that same PC unless you use the Administration functions from a server.

# Upgrading to EtherShare 2.0

## Overview

If you are currently using EtherShare version 1.0 with DOS 1.0 or 1.1 and are upgrading to EtherShare version 2.0 with DOS version 2.0, you must follow the two procedures described in this appendix. First, you must change the switch settings on your IBM Personal Computer's system board, and secondly, you must convert your existing EtherShare volumes for use with version 2.0.

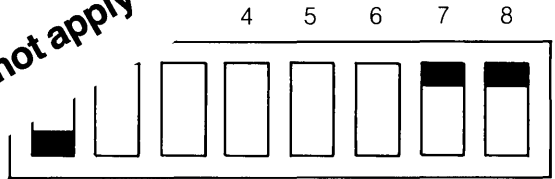
## Setting the Drive Switches

Remove the cover of your IBM Personal Computer system unit. The switches reflect the actual number of drives installed.

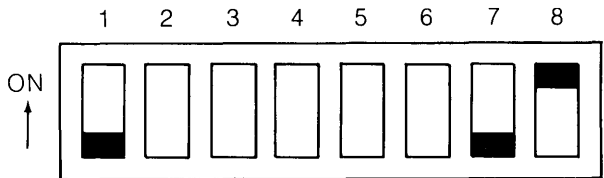
Refer to Installation section 2.4 for instructions on removing the system unit cover and locating the switches.

Set switches 1 through 8 to the positions shown in the diagrams below.

**Please remove this page from your User's Guide. It does not apply to EtherSeries 2.4.**



If you have two drives:



Return to your EtherLink User's Guide, version 1.0, for instructions on replacing the system unit cover and reconnecting the cables and power.

## Upgrading to EtherShare 2.0

### Converting EtherShare 1.0 Volumes for Use with EtherShare 2.0

All EtherShare volumes created with DOS version 1.1 as double sided (/2) with EtherShare version 1.0 must be converted for use with DOS 2.0 and EtherShare version 2.0. A batch file, CONVERT.BAT, and the program ECONVERT.COM are provided on your EtherSeries User Software Diskette, version 2.0 for this purpose. They have *not* been copied onto your EtherSeries/DOS Software Diskette during software installation.

Single sided volumes (/1 or 160KB) do not need to be converted.

#### The Convert Batch File

Converts an EtherShare 1.0 double sided volume.

#### Format

```
CONVERT
```

```
F:
```

```
vol  
con  
then
```

Converts a new double sided volume. The batch file then copies the old volume to the new volume in the process and lists the contents to ensure it is as expected. The old volume is then deleted and the new volume is renamed to the old volume name.

#### Listing

```
ECHO OFF
```

Turns off the display of DOS commands as they are read from the batch file.

```
ES CREATE %2 /2; LINK E: %1; LINK F: %2
```

Creates the new volume and links it to drive specifier F:. Links the existing volume to E:. The name supplied for the new volume is substituted for the %2 variable; the name supplied for the old or existing volume is substituted for the %1 variable.

**Please remove this page from your User's Guide.**  
**It does not apply to EtherSeries 2.4.**

IF ERRORLEVEL 1 GOTO FAIL

Tests for an error. If an error occurs, the GOTO is performed. If no errors occur, the next command is performed.

ECONVERT E: F:

Converts the old volume to the new volume.

CHKDSK F:

Uses the DOS CHKDSK command to check the new volume.

DIR F: /P

Lists the files and subdirectories for the new volume.

PAUSE

Pauses the batch file.

ES UN\*

Erases the old volume. The name supplied for the old volume is substituted for the %1 variable; the name supplied for the new volume is substituted for the %2 variable. The name supplied for the old volume is substituted for the %1 variable; the name supplied for the new volume is substituted for the %2 variable. Erases the old volume; deletes the old volume. The name supplied for the old volume is substituted for the %1 variable; the name supplied for the new volume is substituted for the %2 variable.

:F:

If errors occur, the batch file stops.

**Please remove this page  
from your User's Guide.  
It does not apply to EtherSeries 2.4.**





# Appendix F

## Error Messages

---

### Error Messages

EtherShare error messages are displayed in the form of **\*\*\*Error message**. This appendix lists these messages alphabetically, explains the message and recommends recovery action.

The words VOLUME, USER and SERVER represent any volume name, user name or server name. The actual volume name, user name or server name is substituted when the message is displayed.

<b>Error Message</b>	<b>Meaning/Action</b>
A value must be supplied.	A parameter value is required. No default is assigned.
Bad character.	An illegal character has been typed for this parameter.
Bad server.user name format.	A user name can be an optional server name and a period followed by a user name.
Bad user.volume name format.	A volume name can be an optional user name and period followed by a volume name.
Can't find user USER.	The specified user could not be found on any server on the network.
Can't link to an assigned drive.	You cannot link to any drive id which has been redefined using the DOS ASSIGN command.
Caution: Overlaying default drive X:	You are requesting to link a volume to your default drive. This can get you into trouble.
Caution: At least one server did not respond, so a duplicate user name may result. Add user anyway (Y/N)?	When adding a new user, all EtherShares are checked for that user name. If one of the EtherShares does not respond, it is possible the user already exists on that server. If you are sure the user is unique, go ahead. Otherwise, cancel the operation, and try again later.

# Error Messages

<b>Error Message</b>	<b>Meaning/Action</b>
Cross server access failed.	There was a failure in a request to access a server other than the one to which you are logged in.
#CROSS is a reserved user name.	#CROSS is used by EtherShare internally and is not available for general use.
Drive not ready— Abort, Retry, Ignore?	You are linked or cross-linked to a volume and your default drive does not have a volume currently linked to it, or the server storing the linked volume is busy, or the server you are linked to has failed. Retry several times. If this does not work, log out then log in to your server and re-establish the link or cross-link when the other server on which the linked volume is stored is operating.
Drive X: in use... OK to unlink (Y/N)?	The requested drive has a volume linked to it. You are asked if the volume can be unlinked.
Enter only one value.	More than one value has been entered for a command parameter. Remember, use a space to separate parameter values.
Enter /P for pause.	In a directory listing, /P is used to request a pause.
Enter /PUB, /PRIV, or /SHAR.	These are the acceptable values for the access parameter.
Enter /W for a wide listing.	In a directory listing, /W is used to display several entries on one line.
Enter /1 or /2, /64KB - /3200KB, or /1MB - /32MB.	Volume size options. /1 is single sided; /2 is double sided. You can also indicate the size in kilobytes (KB) or megabytes (MB).
Ethernet driver not loaded.	You must boot using the EtherSeries/DOS diskette.

<b>Error Message</b>	<b>Meaning/Action</b>
Failure formatting volume.	There was a write error while automatically formatting the volume being created. Delete and recreate the volume. If failure continues, you are possibly out of disk space on your server. Use the server ADMIN functions to remove unnecessary undelivered mail and files waiting to be printed, and restart the EtherSeries software.
Maximum users logged in.	No more users can log in to EtherShare. Someone needs to log out before you can log in.
Max of 2 characters.	More than two characters have been given for a drive id value such as C: or D:.
Max of 8 characters.	A server, user or volume name can contain a maximum of eight characters.
No match.	No name matches the request.
Not enough disk space, numKB remain.	Not enough disk space to create the volume requested.
Nothing to modify.	You must include at least one of the parameters in the ES MODIFY command.
No user logged in.	You are linked or cross-linked to a volume and the server you are cross-linked to goes down. You must log out, log in to your own server and link or cross-link to the volume when the server on which the linked volume is stored is operating.
No volumes linked.	You are requesting to list currently linked volumes with the ES DIR /L command. There are none, or you are attempting to "unlink*" and there are no volumes linked.
No volume linked.	No volume is currently linked to the drive specifier given.
Password incorrect.	The password given is not correct. Try again. Be sure you have typed the correct password.

# Error Messages

<b>Error Message</b>	<b>Meaning/Action</b>
Passwords must be enclosed in parens.	Enter the password enclosed in parentheses ( ). The right parenthesis is not required.
Please log in first.	You must log in to use any EtherShare commands.
Selection must be 1-14.	Select a command by typing the number next to the command option. Only 1-14 can be used.
Semicolon (;) must be followed by a space.	There must be at least one space after each semicolon (;) to separate multiple EtherShare commands entered on one line.
Server not ready.	The EtherShare server is not responding. It may be too busy or not operating. Try a few more times, then check the EtherShare.
Server not ready ... Correct login name?	No server is responding to your log in request. It may be an unknown user name, or the server may be too busy or not operating. If you are sure the log in name is correct, try again.
Server SERVER not ready.	The server named SERVER is either not operating or too busy.
Unknown command.	EtherShare commands are used in the form ES COMMAND. It must be one of the 15 defined commands.
Use /L or a volume name, not both.	You can list volumes or linked volumes, not both. Use either ES DIR /L or ES DIR volname.
USER already exists on server SERVER.	The user name you want to add to EtherShare already exists on the server named SERVER. User names must be unique on the entire network.
USER unknown.	The user name you want to delete does not exist on the EtherShare to which you are logged in.

<b>Error Message</b>	<b>Meaning/Action</b>
Value must be X: through X:.	You can link EtherShare volumes to the drive specifiers shown only.
Values ignored from XXX.	Too many parameters have been given. The command has been executed, but all values including XXX have been ignored.
VOLUME already exists.	Each volume you create must have its own unique name.
VOLUME has no assigned password.	You cannot access another user's volume unless a password has been assigned and you give that password.
VOLUME is a private volume and already in use	Private volumes have exclusive access. Once a private volume has been linked, no other user can link it.
VOLUME is linked.	You cannot modify or erase a linked volume. You must first unlink the volume using ES UNLINK and make sure no one else has it linked.
VOLUME is linked to X: ... OK to unlink (Y/N)?	The requested drive is currently linked to VOLUME. Confirm if it is all right to unlink VOLUME.
VOLUME not linked.	When requesting an ES UNLINK for VOLUME, it is not currently linked.
VOLUME space is full.	All EtherShare disk space has been used. An EtherShare volume must be deleted before space will be available.
VOLUME unknown.	There is no EtherShare volume with this name. Check the spelling. Make sure you include the owner's name if it is not your volume.
Write to network failed.	Your IBM Personal Computer cannot access the network probably because the network itself has a problem. Consult the EtherLink User's Guide for help in finding the problem.



# **EtherPrint User's Guide**

**for use with DOS 2.0, 2.1 and 3.0**

Version 2.4 November, 1984

Copyright © 1983, 1984 by 3Com Corporation  
1365 Shorebird Way  
P.O. Box 7390  
Mountain View, California 94039  
USA





# Contents

---

## Section 1—Introduction

Overview	1-1
Features	1-2
EtherPrint Commands	1-2
Using this Manual	1-3

## Section 2—Using EtherPrint

Overview	2-1
Linking to a Printer	2-2
Establishing a Print Link	2-2
Printing a File	2-3
Selecting an Alternate Printer	2-5
Using Purchased Software	2-6
Establishing Links	2-6
Running the VisiCalc Program	2-7
Printing a VisiCalc Report	2-7
Printing Multiple Pages	2-8
Ending the Print Link	2-8
Hold Printing	2-9
Direct Printing	2-9

## Section 3—EtherPrint Commands

Overview	3-1
Selecting Commands	3-1
EP DIR Command	3-3
EP HELP Command	3-5
EP LINK Command	3-6
EP UNLINK Command	3-11
Command Summary	3-13

## Appendices

Appendix A—Glossary	A-1
Appendix B—Error Messages	B-1

## List of Figures

IBM PCs Connected to a Server with a Printer	1-1
--	-----



# SECTION 1

## Introduction

---

### Overview

EtherPrint lets any IBM Personal Computer in the network send files or program output to a printer connected to a Network Server. These files are automatically stored at the server until they can be printed. This means many computers can send information to be printed at the same time; even though only one request can actually be printed at a time. Sharing a single printer eliminates the need to have a printer connected to each personal computer.

Up to three printers can be connected to a server to give you additional printing options. Through the use of EtherPrint commands, you can select the printer best suited for each printing job. Letter quality printers can be used for letters and final reports; higher speed printers can be used for program listings and draft documents. In addition, printers can be placed in different locations to serve separate departments.

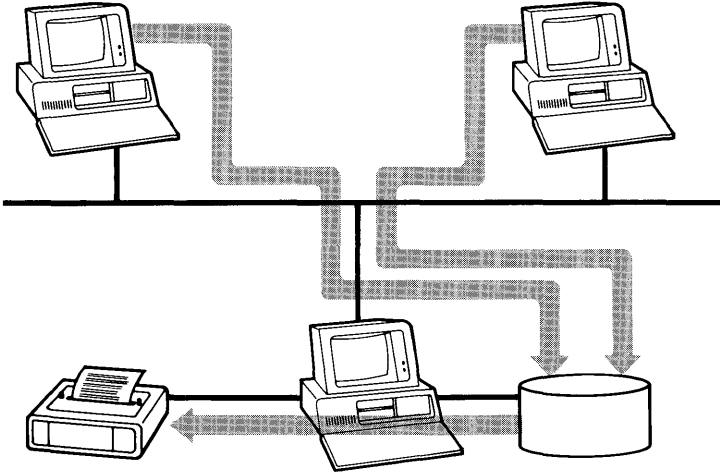


Figure 1-1 IBM PC's Connected to a Server with a Printer

In order to use EtherPrint, you establish a link between your IBM Personal Computer and a printer connected to an EtherPrint server. From this point on, you use the printer as if it was connected directly to your computer. Use standard DOS commands to copy a file to the printer, or use the **PrtSc** key to print the screen display. Additionally, programs can send output directly to the printer.

# Introduction

## Features

### Shared Resources

- Expensive letter quality and high speed printers can be shared by all IBM Personal Computers in an Ethernet network

### Automatic Queued Printing

- Files are stored on a server and printed on a first come first served basis

### Compatible with Other Software

- Once a link is established, you can print files just as if the printer was connected directly to your IBM Personal Computer

## EtherPrint Commands

The EtherPrint commands are found in the program EP which is supplied with your EtherLink card. It is contained in the file EP.COM on your EtherSeries/DOS Software Diskette or on your fixed disk.

## Using this Manual

This manual is divided into three sections.

Section 2 gives examples which show you how to use the EtherPrint commands to establish a print link to an EtherPrint Server. Read this section first. It is designed to get you started with EtherPrint.

Section 3 describes each EtherPrint command in detail. Each command parameter is described followed by a remarks section which provides information on using the command. In addition, examples of both the prompted and unprompted forms of the command are given. A command summary is also included.

There are two appendices:

- Appendix A is a glossary
- Appendix B lists all EtherPrint error messages

## SECTION 2

# Using EtherPrint

---

## Overview

EtherPrint can be used with either a 3Com Network Server or an IBM Personal Computer which is acting as an EtherPrint Server. In either case, the printing capabilities are the same when viewed from the IBM PCs on the network. EtherPrint provides these functions:

- Multiple users can print at once. Printing requests can be sent from many IBM Personal Computers to an EtherPrint server at the same time, even though only one request can actually be printed at a time.
- Up to three printers can be attached to a server. Only one of those can be a serial printer. You choose the one you want to do your printing.
- Programs run faster. Any time you print with EtherPrint, the data is sent to the server at the speed of the network, not the speed of the printer.

To use a printer connected to a server, you need to:

- establish a link between your computer and a printer connected to a server,
- then use DOS commands, application programs or the **PrtSc** key to print files just as if you had a printer connected to your own personal computer.

When you establish a link, files that would normally be printed on a printer connected to your IBM Personal Computer are stored in temporary files or "spooled" on the server. When the printer you've selected is available, your work is automatically printed.

This section gives you examples for using EtherPrint. They show how to establish and end a print link, use DOS commands to print a file, and print a report generated by a popular application program, VisiCalc. The examples are designed to serve as models for ways to use EtherPrint with your own applications to expand your printing options.

The examples used in this section A: as the default drive; therefore the prompt A> is shown. If you have an IBM Personal Computer with a fixed disk, you will use C:; therefore, the prompt you will use is C>.

# Using EtherPrint

## Linking to a Printer

Insert your EtherSeries/DOS Software Diskette into diskette drive A: on your IBM Personal Computer. This diskette contains the EtherPrint program. If you have a fixed disk, set your default drive to C:. Remember to boot your computer with this diskette or from your fixed disk, otherwise the software you need to use EtherPrint is not available.

## Establishing a Print Link

In order to use EtherPrint, you need to establish a link between a printer device name on your IBM Personal Computer and a printer connected to a server. Use the EP LINK command to do this.

A> **EP LINK ?** ←

Establishes a link between your IBM Personal Computer and a printer connected to a server. Entering a question mark after the command specifies that you want to be prompted for all responses.

Your printer id? ←

The printer device name you want to link to the server's printer. Your choices are PRN:, LPT1:, LPT2:, and LPT3:. If you do not give a printer device name, PRN: is automatically used.

To whom? **SHARE1** ←

The name of the server whose printer you want to use. This name can be any server in the network. You must supply a server name if you are not logged in.

Your name? **CAROLR** ←

Your EtherShare user name. This name identifies anything you print. The name is printed on a blank page which separates your printed output from that of other users.

SHARE1 linked to PRN: ←

Confirms that a print link has been established.

## Hold Printing

Normally, EtherPrint prints anything you have sent to it whenever there is a break of 30 seconds or longer between print requests. If you want to save everything you have sent for printing so that it is all printed at one time, use the /HOLD parameter of the EP LINK command. This is useful when printing a series of small reports which you want to link together to be printed at one time.

The /HOLD parameter can be used only with the unprompted form of the EP LINK command. To use the unprompted form of the command, enter the command name and all parameters on the same line.

**A> EP LINK SHARE1 /HOLD ←**

Establishes a print link between PRN: (the default printer name) and the printer identified as 1 connected to server, SHARE1. The /HOLD parameter delays printing until you request it.

Now you can print as you normally would using DOS commands, the **PrtSc** key or from a program; however, nothing is printed until you end the print link.

**A> EP UNLINK ←**

Ends the link between the printer device name on your computer and the printer connected to a server.

Any files you have held for printing begin printing or are placed in a queue until the printer you have selected is available. This happens automatically; you don't have to do anything.

## Direct Printing

You can link your IBM PC directly to the printer connected to the Network Server with the /DIRECT parameter of EP LINK command. This reserves the printer for your use to print directly; you bypass normal spooling and queuing of printing requests. When you request a direct link, only those files print while the link is established. Printing requests from all other IBM PCs on the network will be held in a temporary file (spooled) as usual until you end the direct link. These files will not be printed even if the printer appears to be idle.



## Using EtherPrint

A> **EP LINK SHARE1 /DIRECT** ←

Establishes a direct link between PRN:(the default printer name) and the printer identified as 1 connected to server, SHARE1. The */DIRECT* parameter lets you control all printing done on that printer.

Once you have established a direct link, you can print files as you normally would. Your files will print immediately in the order they are sent. No files from any other IBM PC on the network can print until you end the direct link. If you do not send files to be printed for 10 minutes the server will assume you no longer want the link and will automatically end it.

If you need to control the printer for a period of longer than 10 minutes without sending a file to be printed, to change forms for example, you can associate a specific amount of time with the */DIRECT* parameter.

A> **EP LINK SHARE1 /DIRECT=30** ←

Establishes a direct link between PRN: (the default printer name) and the printer identified as 1 connected to server, SHARE1. The */DIRECT=30* parameter lets you control the printer for up to 30 minutes without sending any files to be printed.

When you attach a specific amount of time to the */DIRECT* parameter, the link will not be broken during that period unless you specifically request it.

A> **EP UNLINK** ←

Ends the direct link between the printer device name on your computer and the printer connected to the server.

Once the direct link is ended, other direct links can be established, or files that are queued will be printed.

## EP HELP Command

Provides information about the EtherPrint commands: EP LINK, EP UNLINK, EP DIR and EP HELP.

### Format

```
EP HELP [commandname]
```

### Parameters

*commandname* The EP command about which you want information.

### Remarks

The HELP information is displayed in levels. The first level lists the EtherPrint command choices and the second level gives the format and describes the parameters for each EP command. You can go directly to the second level by using the *commandname* parameter.

### Examples

```
A> EP HELP ←
```

Displays a list of the EtherPrint commands.

```
A> EP HELP LINK ←
```

Displays the command format and describes the parameters for the EP LINK command.

# EP LINK Command

## EP LINK Command

Establishes a link between your computer and a printer connected to a Network Server.

### Format

```
EP LINK [printer] [servername] /1  
/2 [/HOLD] [/PLOT] [/DIRECT=#]  
/3
```

### Parameters

*printer* The printer device name you use to link to a server's printer. This name can be any device name DOS uses to identify printers: PRN: (also called LPT1:), LPT2: and LPT3:. If you do not give a printer name, the name PRN: is used as the default value.

*servername* The name used to identify the server to which the printer is connected. (Use the ES SDIR command to list the names of all servers in the network.) If you are already logged in to EtherShare, the server to which you are logged in is used as the default *servername*.

/1 Identifies the printer you want to use. It can be any of three printers connected to a server.

/1 selects the printer identified as one;  
/2 selects the printer identified as two;  
/3 selects the printer identified as three.

If you do not specify a printer, /1 is used as the default value.

<i>/HOLD</i>	Delays printing until the EtherPrint link is ended by using the EP UNLINK command, or a new EP LINK command is issued for this printer.
<i>/PLOT</i>	Same as <i>/HOLD</i> except that no banner or trailing form feed is printed between print requests. Printing is delayed until another EP LINK or EP UNLINK occurs.
<i>/DIRECT=#</i>	Lets one IBM PC on the network control all printing. All other print requests are spooled and will not print until you end the direct link or unless no print request is received for # minutes. If you don't set a specific number of minutes, the direct link is automatically set to 10 minutes. Be sure you enter the parameter exactly as it is shown; do not put a blank space on either side of the equal (=) sign.

### Remarks

This command links your IBM Personal Computer to a printer connected to a Network Server. Once you have linked a printer device name to a remote printer, you can perform any normal printing function by referring to the printer name, for example, PRN:.

The EP LINK command can be used with the EtherPrint Server Software running on a 3Com Network Server or an IBM Personal Computer. In both cases, the printing capabilities are the same functions: print spooling and the choice between two printers.

If you are not logged in to an EtherShare Server, you are prompted for a user name. This does not log you in; rather it establishes the name which appears on the blank page which separates anything you print from the other users' printing.

Each server can have up to three printers connected to it. Only one of these can be a serial printer. You identify which printer you want to use with the /1, /2, or /3 parameter. (Use the EP DIR command to list the printers connected to each server.)

## EP LINK Command

EtherPrint allows many PC users to be linked to the same EtherPrint printer at once. Each user's data is stored in a separate temporary file on the server's disk. When complete, the file is released for printing. Since only one file can actually be printed at a time, others are placed in a queue until the printer is free.

Normally printing begins approximately 30 seconds after the last print request has been completed. However, if the */HOLD* or */PLOT* option is specified, the print requests are appended to the temporary file until an *EP UNLINK* or another *EP LINK* command is issued. At this point, the temporary file is printed or queued for printing.

You can initiate printing in any of the following ways:

- use the *EP LINK* command again; this automatically closes the first link and reopens it a second time
- use the *EP UNLINK* command
- pause for 30 seconds between print requests except when */HOLD* or */PLOT* has been used
- log out from EtherShare
- Issue an *INT 17H* with *AH = 9* and the printer number (0, 1, 2) in *DX*.

If you send multiple PC files to be printed without ending the link or pausing for 30 seconds between each file, they are printed all at once without any page ejects or space between them. You can start new files at the top of a page by sending a *CTRL-L* (displayed as *^L* on your screen) to the printer between each file.

You can cause a temporary file to be queued for printing immediately by issuing on *INT 17H* after the file. This is not easily done using DOS commands; however, any program sending output to a printer can be instructed to issue on *INT 17H* through an assembly language subroutine. Set *AH = 9* and *DX = 0, 1, or 2*, depending on the printer that is linked. This does not apply if you are using the */PLOT* parameter.

EtherPrint provides one-way communication from your computer across the network to a shared device. For this reason, you cannot sense device status from a share printer or plotter. Programs that must sense device status have to be used with plotters or printers connected directly to your computer.

You can request a direct link to the printer so that only the files you want to print are printed. Print requests from other IBM PCs on the network are held in a temporary file as always until the direct link is ended. You can establish a direct link only if the printer is not currently printing a file. If the printer is in use when you request a direct link, you see the message, "Can't direct link—printer busy", and you must try again when the printer isn't busy.

You can associate a specific number of minutes with the */DIRECT* parameter to indicate that you want the direct link maintained even if no printing requests are made during that time. This lets you do things such as change the forms you are printing on. If you do not specify any time, the direct link is automatically ended after 10 minutes. You can end a direct link at any time with the EP UNLINK command or by logging out of EtherShare.

### Examples

#### Prompted

```
A> EP LINK ? ←  
Your printer id? LPT2: ←  
To whom? SHARE2 ←  
Your name? CAROLR ←  
SHARE2 linked to LPT2:
```

Links to a printer connected to the server named SHARE2. In this example you are prompted for a user name because you are not logged in to a server.

If you are already logged in to a server, you are not prompted for your name. Your user name is automatically used.

# EP LINK Command

## Unprompted

```
A> EP LINK /HOLD ←↵
SHARE1 linked to PRN:
```

Links to the printer connected to the server, SHARE1. Any further reference to PRN: prints to the printer attached to this server. PRN: is the default printer name; SHARE1 is the default server name because it is the server to which you are logged in. The /HOLD parameter causes printing to be delayed until the EP UNLINK command is used.

```
A> EP LINK /2 ←↵
SHARE1 linked to PRN:
```

Links to printer 2 which is connected to the server, SHARE1. PRN: is the default printer name.

```
A> EP LINK SHARE2 /DIRECT ←↵
```

Links to a printer connected to a server named Share2. Since no printer name or number is given, PRN: and 1 are used as default values. The /DIRECT parameter gives you direct access to the printer. Only the files you request to be printed will print. Print requests from other IBM PCs on the network will be spooled as usual; however, they will not be printed until you end the direct link. Since no time is associated with the /DIRECT parameter, the link is automatically ended after 10 minutes if you do send any files to be printed.

```
A> EP LINK LPT1: SHARE2 /2 /PLOT
SHARE2 linked to LPT1:
```

Links to a plotter or graphics printer designated as printer 2 connected to a server named SHARE2. The /PLOT parameter suppresses the banner and causes printing to be held until the EP UNLINK command is used.

### EP UNLINK Command

Ends the link between your IBM Personal Computer and a printer connected to a server. Printing requests stored in a temporary file on the server are released to be printed.

#### Format

```
EP UNLINK [printer]
```

#### Parameters

*printer*

The printer device name you linked to with the EP LINK command. The printer name can be any device name that DOS uses to identify printers: PRN:, LPT1:, LPT2:, or LPT3:. If you do not give a printer device name, PRN: is used.

#### Remarks

This command ends a link between your personal computer and a printer connected to a server. (You can also unlink by logging out from EtherShare.)

If you use the */HOLD* or */PLOT* parameter when you establish a print link, you must unlink before your files are printed.

Files on a 3Com Network Server that are waiting to be printed, can be deleted or assigned a priority status. Files that are waiting to be printed on an IBM PC acting as an EtherPrint server can be deleted. (See the EtherPrint Administrator's Guide for further instructions.)

Remember that rebooting your system breaks all links to all servers.



# EP UNLINK Command

## Examples

### Prompted

```
A> EP UNLINK ? ←  
Printer id? LPT1: ←  
SHARE1 unlinked from LPT1:
```

Ends the link between your IBM Personal Computer and a printer connected to the server, SHARE1.

### Unprompted

```
A> EP UNLINK ←  
SHARE1 unlinked from PRN:
```

Ends the link to the printer to which you are currently linked.

```
A> EP UNLINK LPT2: ←  
SHARE2 unlinked from LPT2:
```

Ends the link to the printer LPT2:

## Command Summary

**EP DIR**     [*servername*]

Lists the printer(s) connected to a server.

**EP HELP**    [*commandname*]

Gives summary information about the EtherPrint commands.

**EP LINK**    [*printer*] [*servername*]    /1    [/*HOLD*] [/*PLOT*] [/*DIRECT=#*]  
  /2  
  /3

Establishes a link between your IBM personal computer and a printer connected to a server.

**EP UNLINK**   [*printer*]

Ends the link between your IBM Personal Computer and a printer connected to a server.



# Appendix B

## Error Messages

---

### Error Messages

EtherPrint error messages are displayed in the form of **\*\*\*Error message**. This appendix lists these messages alphabetically, explains the message and recommends recovery action.

<b>Error Message</b>	<b>Meaning/Action</b>
A value must be supplied.	A required parameter was omitted when requested. When you are prompted again, supply a value or use <b>Ctrl-Break</b> to cancel the command.
Address must be 12 hex digits.	An Ethernet address (using #123456789ABC notation) was supplied instead of a server name, but was not exactly 12 digits long. You must pad with zeros if necessary, and use exactly 12 hexadecimal digits.
Bad /HOLD option.	A /HOLD option was expected, but something else was supplied.
Bad character.	A user name or server name was expected and a character which is not legal in name was encountered. Names can be up to eight characters long (letters, digits and some special characters).
Bad printer number; value must be 1 or 2.	An attempt was made to select a remote printer other than /1 or /2.
Cannot use a printer name.	An attempt was made to use a printer name (PRN:, LPT1:, LPT2:, LPT3:) where a user or server name was expected. Supply your user name or the name of the PC server you want to use.
Enter only one value.	When prompted for a value, more than one word was entered, that is, a separator appeared in the middle of the value. Enter only one word in response to this prompt.

# Error Message

Error Message	Meaning/Action
Ethernet driver not loaded.	The system was booted from a diskette that did not contain the EtherPrint software. You must reboot from the EtherSeries/DOS diskette before using any EtherPrint commands.
Hexadecimal value required.	An attempt was made to specify an Ethernet address (using #123456789ABC notation) in place of a server name. This address contained a non-hexadecimal digit. Use only digits 0-9 and letters A-F.
Link unexpectedly broken.	A print server received an EP UNLINK command when there was no printer linked. This could happen by interrupting and restarting a PC server using <b>Ctrl- Break</b> , or restarting an EtherShare printer server by reinstalling or reconfiguring.
Max of 4 characters.	The printer name is too long. Enter PRN, LPT1, LPT2 or LPT3, optionally followed by a colon.
Max of 8 characters.	A user or server name longer than eight characters was used. Enter a name up to eight characters long.
Maximum users using EtherPrint.	Too many users attempted to print on an EtherShare at once. Try again later.
Must supply server name when not logged in to EtherShare.	The EP LINK command (without a servername parameter) was used while not logged in to EtherShare. If you are not logged in, you must supply a server name.
No parameters for this command.	Parameters were supplied for a command that has none.
Not ready error writing device PRN Abort, Retry, Ignore?	The file cannot print. Select Retry then unlink with the EP UNLINK command and link again with the EP LINK command.

# **EtherMail User's Guide**

**for use with DOS 2.0, 2.1 and 3.0**

Version 2.4 November, 1984

Copyright © 1983, 1984 by 3Com Corporation  
1365 Shorebird Way  
P.O. Box 7390  
Mountain View, California 94039  
USA



<b>Error Message</b>	<b>Meaning/Action</b>
Incorrect attachment field.	Enter the DOS file name(s) of your attachment(s) on this line. Each file name must be separated by a comma or semicolon.
Incorrect character in a name.	User names can be up to eight characters long (letters, digits and some special characters). This name contains a character that cannot be used.
Incorrect date field.	Internal error.
Incorrect from field.	The From: field must contain an EtherShare user name.
Incorrect to or cc list.	Enter the EtherShare user names of your addressees on this line. Names must be separated with a comma or semicolon.
Invalid drive or path name XXXX for folder.	The drive specifier must be followed by a colon (:); the path name must be followed by a backslash (\).
Invalid drive or path name XXXX for distribution lists.	The drive specifier must be followed by a colon (:); the path name must be followed by a backslash (\).
Message sent, EXCEPT to:	A network server was not responding when the message was sent. The recipients listed did not receive the message.
Must supply a Date field.	Internal error.
Must supply a From field.	The From: field is required and must contain an EtherShare user name.
Must supply a To field.	The To: field is required and must contain the EtherShare user names of your addressees, or distribution list names.
Name too big.	Names cannot be longer than eight characters.



# Error Messages

<b>Error Message</b>	<b>Meaning/Action</b>
No new mail to get.	There is no new mail waiting for you on EtherShare.
No next message.	There are no more messages in your folder.
Not enough memory.	There is not enough memory to complete this move or copy operation. Either mark smaller areas of text for moving/copying, or check that the file is not too large. A message editor file cannot be larger than 25K.
Nothing to delete.	There are no messages in your folder, so nothing can be deleted.
Nothing to file.	There are no messages in your folder, so nothing can be filed.
Nothing to forward.	There are no messages in your folder, so nothing can be forwarded.
Nothing to print.	There are no messages in your folder, so nothing can be printed.
Nothing to reply to.	There are no messages in your folder, so you cannot reply to anything.
Nothing to show.	There are no messages in your folder, so you cannot show any.
Please login first.	You must log in to the server with the ES LOGIN command or the LOGIN batch file before running EtherMail.
Printer access failed.	Check that the printer is properly connected and configured, that it is on-line and has paper in it. If all of these are correct, you may need to unlink with the EP UNLINK command then link again with the EP LINK command.
Server not ready ... Are you logged in?	You must log in to EtherShare with the ES LOGIN command or the LOGIN batch file before running EtherMail.

**REMOVE THIS PAGE AND INSERT TAB**





