

IBM PC Local Area Network Program

User's Guide

Communications Family

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IBM PC Local Area Network Program

User's Guide

Communications Family

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Third Edition (April 1987)

This edition applies to Release 1.2 of IBM PC Local Area Network Program, and to all subsequent releases and modifications until otherwise indicated in new editions or Technical Newsletters. Changes are made periodically to the information herein.

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About This Book

This book provides you with the information you need to use the IBM PC Local Area Network (LAN) Program 1.20 on your IBM Personal Computer.

The IBM PC LAN Program 1.20 provides some functions that are not available with the IBM PC LAN Program 1.10. The PC LAN Program provides for you:

- Performance enhancements
- Reduced user performance tuning activities
- Increased number of workstations attached to the server
- Installation enhancements

This book has fourteen chapters and three appendixes:

- Chapter 1 introduces you to the IBM PC LAN Program, describes the parts of the program and the various ways you can use it.
- Chapter 2 explains how to install the program on your computer.
- Chapter 3 explains how the menus work.
- Chapter 4 explains how to use the PC LAN Program with menus.
- Chapter 5 describes tasks you may want to do with the PC LAN Program and how to do them.
- Chapter 6 explains how to use the PC LAN Program with commands.

- Chapter 7 describes the PC LAN Program commands.
- Chapter 8 describes IBM DOS commands that are included with the PC LAN Program.
- Chapter 9 describes the CONFIG.SYS file and how it is used with the PC LAN Program.
- Chapter 10 provides guidelines for supervising the PC LAN
- Chapter 11 describes how to use TopView with the PC LAN Program.
- Chapter 12 describes the factors that affect the performance of the network.
- Chapter 13 describes how to write application profiles for the Network Installation Aid (NIA).
- Chapter 14 describes the errors that may occur if you are connected to the IBM Token-Ring Network.
- Appendix A lists the error messages you may see while using the PC LAN Program. The appendix also tells you how to recover from errors.
- Appendix B provides programming guidelines for application developers who are writing applications for the PC LAN.
- Appendix C lists the programming interfaces to the PC LAN Program.

How to Use This Book

If you are new to using a computer or new to using DOS, or if you prefer to use menus, you should use the following:

- Chapter 1
- Chapter 2
- Chapter 3
- Chapter 4
- Chapter 5
- Appendix A

If you are familiar with computers and DOS and prefer to use commands, you should use the following:

- Chapter 1
- Chapter 2
- Chapter 5
- Chapter 6
- Chapter 7
- Chapter 8
- Chapter 9
- Appendix A

If you are going to share your devices and directories with other computers or if you are responsible for supervising the use of the PC LAN, you should also read Chapter 10.

If you are going to use TopView with the PC LAN Program, you should read Chapter 11.

If you are developing applications for use with the PC LAN, you also should read Chapter 13, Appendix B and Appendix C.

If you are going to use the PC LAN Program on an IBM Token-Ring Network, you should read Chapter 14.

Conventions

This book uses the following conventions, unless otherwise noted.

- DOS refers to IBM PC DOS Versions 3.10, 3.20, and 3.30
- TopView refers to TopView 1.12
- LAN Adapter refers to one of the following:
 - IBM PC Network Adapter
 - IBM Token-Ring Network PC Adapter
 - IBM Token-Ring Network PC Adapter II
 - IBM PC Network Adapter II
 - IBM PC Network Baseband Adapter
 - IBM PC Network Adapter II/A
 - IBM PC Network Baseband Adapter/A
 - IBM Token-Ring Network Adapter/A.
- High capacity drive refers to a 5-1/4", 1.2M-byte high capacity diskette drive
- 5-1/4" drive refers to a 5-1/4", 360K-byte (double-sided) diskette drive
- PC LAN Program diskette refers to either:
 - The 5-1/4" IBM PC Local Area Network Program diskette, or
 - The 3-1/2" IBM PC LAN Program/Message Manager/Installation Aid diskette.
- PC LAN Program Installation Aid diskette refers to either:
 - The 5-1/4" IBM PC Local Area Network Program Installation Aid diskette, or
 - The 3-1/2" IBM PC LAN Program/Message Manager/Installation Aid diskette.

Related Publications

- IBM Personal Computer *DOS User's Guide*, Version 3.10
- IBM Personal Computer *DOS User's Guide*, Version 3.20
- IBM Personal Computer *DOS User's Guide*, Version 3.30
- IBM Personal Computer *DOS Reference*, Version 3.10
- IBM Personal Computer *DOS Reference*, Version 3.20
- IBM Personal Computer *DOS Reference*, Version 3.30
- IBM Personal Computer *DOS Technical Reference*
- IBM *PC Network Technical Reference*
- IBM Personal Computer *Systems Extensions Planning and Installation*
- *IBM Token-Ring Network PC Adapter Guide to Operations*
- *IBM Token-Ring Network NETBIOS Program User's Guide*
- *IBM Token-Ring Network Problem Determination Guide*, SY27-0280.
- *IBM Local Area Network Support Program User's Guide*

Contents

Chapter 1. Introduction	1-1
Introduction	1-3
Sharing Programs Over the Network . .	1-3
Before You Begin	1-4
PC LAN Diskettes	1-6
What Is a Network?	1-7
Menus and Commands	1-11
DOS and the PC LAN Program . .	1-12
Installing Applications to Share .	1-14
Starting the PC LAN Program . .	1-14
Setting Up Your Computer On the Network	1-16
Using Your Applications with the Network	1-21
Using the Network Request Keys to Interrupt Your Application . .	1-24
Sending and Receiving Messages on the Network	1-26
DOS Functions and the Network	1-30
Using The PrtSc Key	1-30
Commands	1-31
Deciding How You Want to Use the PC LAN Program	1-33
Choosing a Network Configuration for TopView	1-37
Choosing a Network Configuration for the IBM 3270 Workstation Program	1-37
Tasks You Can Do With the Network Configurations	1-38
Summary	1-40
You Are Ready to Start	1-41
Chapter 2. Installing Your Programs . .	2-1
Introduction	2-3
Making Sure Your Computer is Connected to the PC LAN	2-4

Making a Copy of Your PC LAN Program Diskette	2-4
Installing the PC LAN Program	2-5
Installing for Diskette Drives	2-5
Installing for a Fixed Disk	2-21
Adding Additional Users or Applications	2-33
Chapter 3. How the Menus Work	3-1
Introduction	3-3
What Are Menus?	3-3
Parts of the Menus	3-9
Fields	3-10
Message Line	3-10
Status Line	3-11
Keys	3-12
You are Ready to Use the Menus	3-17
Chapter 4. Setting Up and Using the PC LAN Program	4-1
Introduction	4-3
Getting Help	4-3
Starting the PC LAN Program	4-4
Setting Up the PC LAN Program for Your Computer	4-11
Setting Up to Use Network Devices	4-12
Setting Up to Share Devices With the Network	4-15
Saving Your Network Setup	4-18
Starting Applications While Your Computer is on the Network	4-21
Using Applications While Your Computer is on the Network	4-23
Sharing and Using Applications	4-24
Sharing and Using Data for Applications	4-24
Printing Files from Applications	4-25
Sharing and Using Private Directories	4-25
Interrupting Applications and Programs To Do Network Tasks	4-26
Interrupting Your Application With the Network Request Keys	4-26

Interrupting Your Application Without the Network Request Keys	4-27
Doing Other Network Tasks	4-28

**Chapter 5. Tasks You Can Do With the
PC LAN Program**

PC LAN Program	5-1
Introduction	5-4
Starting the PC LAN Program	5-5
Changing the Defaults When You Start the PC LAN Program	5-6
Messages Tasks	5-7
Send Messages	5-7
View Received Messages With the Network Request Keys	5-8
View Received Messages Without the Network Request Keys	5-10
Start Saving Messages	5-11
Stop Saving Messages	5-12
Start Receiving Messages for Another Name	5-13
Stop Receiving Messages for Another Name	5-13
Forward Messages to Another Computer	5-14
Stop Forwarding Messages to Another Computer	5-15
Printer or Print Queue Tasks	5-16
Sharing Your Printer	5-16
Stop Sharing Your Printer	5-17
Use a Network Printer	5-18
Stop Using a Network Printer	5-18
Print a File	5-19
Change the Print Size (Mode) on a Network Printer	5-19
Printing a Separator Page	5-20
Stop Printing a Separator Page	5-22
Disk or Directory Tasks	5-23
Share Your Disk or Directory	5-23
Share (Permit) Your Disk or Directory Temporarily	5-24
Stop Sharing Your Disk or Directory	5-24
Using a Network Disk or Directory	5-25

Stop Using a Network Disk or Directory	5-26
Network Status Tasks	5-27
Check or Change Print Queue on Your Printer	5-27
Check Print Queue on Another Computer	5-28
Display Names That Can Receive Messages At Your Computer . . .	5-28
Display Devices You are Sharing	5-29
Display Network Devices You are Using	5-30
Pause and Continue Tasks	5-31
Pause Using Network Disks and Directories	5-31
Continue Using Network Disks and Directories	5-32
Pause Using Network Printers . . .	5-32
Continue Using Network Printers	5-33
Pause Receiving Messages	5-33
Continue Receiving Messages	5-34
Pause Sharing Your Devices	5-34
Continue Sharing Your Devices . . .	5-35
Pause Printing Files (on a Printer that You've Shared)	5-36
Continue Printing Files (on a Printer that You've Paused)	5-37
Save or Cancel the Network Setup Tasks	5-37
Save Your Network Setup	5-37
Cancel Your Current Network Setup	5-39
Application and PC LAN Program Tasks	5-40
Install New Applications to Share on The Network	5-40
Do a PC LAN Program Task From an Application	5-40
Return to Your Application from the PC LAN Program	5-41
Network Control Tasks	5-42
Close a File	5-42
Display the Error List	5-42

Display Users and Record Locks for a File	5-43
--	------

Chapter 6. Getting Started with

Commands	6-1
Introduction	6-3
Choosing a PC LAN Program	
Configuration	6-5
Server Configuration	6-6
Messenger Configuration	6-7
Receiver Configuration	6-9
Redirector Configuration	6-10
Starting the Network With Commands	6-11
Setting Up Your Computer for Use on the Network	6-13
The CONFIG.SYS File	6-16
Saving Your Network Setup	6-17
Starting Your Applications While Your Computer is on the Network	6-17
Using Your Applications While Your Computer is on the Network	6-18
Printing Files from Applications .	6-20
Interrupting Your Applications to Use the Network	6-21
Doing Network Tasks With Commands	6-22
Doing Network Commands with Batch Files	6-24

Chapter 7. PC LAN Program Command

Reference	7-1
Introduction	7-3
Command Information Format ...	7-3
Command Format	7-4
PC LAN Command Parameters and Operands	7-6
NET Command	7-12
NET CONTINUE Command	7-14
NET ERROR Command	7-20
NET FILE Command	7-24
NET FORWARD Command	7-28
NET LOG Command	7-32
NET NAME Command	7-39
NET PAUSE Command	7-43
NET PRINT Command	7-50

NET SEND Command	7-55
NET SEPARATOR Command	7-58
NET SHARE Command	7-63
NET START Command	7-75
NET USE Command	7-93

Chapter 8. DOS Commands for the PC

LAN Program	8-1
Introduction	8-3
APPEND Command	8-5
FASTOPEN Command	8-10
MODE Command	8-13
PERMIT Command	8-15

Chapter 9. CONFIG.SYS Commands

Used with the PC LAN Program	9-1
Introduction	9-3
BUFFERS Command	9-6
FCBS (File Control Blocks) Command	9-8
FILES Command	9-11
LASTDRIVE Command	9-13

Chapter 10. Managing the Server

Computer	10-1
Introduction	10-3
Computers on the Network	10-4
Guidelines for Sharing	10-5
Sharing Disks and Directories	10-5
Sharing Printers	10-14
Pausing and Continuing Sharing	10-33
Backing Up and Restoring the Disk	10-34
Stopping the Network	10-35
Critical Errors on the Server	
Computer	10-35
Using the NET ERROR Command	10-38
Using the NET FILE Command	10-38
Additional Ways to Manage Security	10-39
Organizing the Server's Fixed Disk	10-40
The Root Directory	10-43
The NETWORK Subdirectory	10-43
The APPS Subdirectory	10-44
The USER Subdirectories	10-46

The BATCH Subdirectory for the Server	10-48
The NETPATH Command	10-49
Subdirectories You May Want To Add	10-50
Installing Applications with the Installation Aid	10-51
Sharing Application and User Subdirectories	10-52
Installing Other Applications ..	10-56

Chapter 11. Using TopView with the PC

LAN Program	11-1
Introduction	11-3
Start Up Procedures	11-4
Doing Network Tasks After Starting TopView	11-9
Using Additional Network Devices	11-10
Sending a Message While Using TopView	11-13
Receiving and Viewing Network Messages	11-13
Using a Mouse Pointing Device	11-14
Doing Message Manager for TopView Tasks	11-14
Receiving Messages	11-15
View Received Messages	11-16
Start Saving Messages	11-17
Stop Saving Messages	11-18
Start Receiving Messages for Another Name	11-18
Stop Receiving Messages for Another Name	11-18
Start Forwarding Messages to Another Computer	11-19
Stop Forwarding Messages to Another Computer	11-19
Display Names That Can Receive Messages At Your Computer ..	11-19
Pause Receiving Messages	11-20
Continue Receiving Messages ..	11-20
Save Your Message Manager for TopView Setup	11-21

Cancel Your Current Message Manager for TopView Setup . . .	11-22
Changing Start Parameters for the Message Manager for TopView	11-22

Chapter 12. IBM PC LAN Performance

Considerations	12-1
Introduction	12-3
Hardware Factors	12-4
Server Work Load	12-5
DOS and PC LAN Program Performance Options	12-6
Remote Computer Performance Options	12-7
Remote File Buffer Pool	12-7
CONFIG.SYS File	12-9
/PBx Network Print Buffers	12-9
/SES (Sessions) and /CMD (Commands)Parameters	12-10
Server Performance Options	12-10
Disk Buffer Pool	12-11
CONFIG.SYS File	12-12
FASTOPEN	12-13
Network Transmission Buffer Pool (NTBP)	12-13
/SES (Sessions) and /CMD (Commands) Parameters	12-14
/PRB (Print Buffer) Parameter	12-15
/PCx (Print Count) Parameter	12-16
/PRP (Print Priority) Parameter	12-16
/TSI Parameter	12-17

Chapter 13. Creating PC LAN

Installation Aid Profiles	13-1
Introduction	13-3
Adding Installation Aid Profiles	13-3
Installation Aid Profile Rules	13-4
Profile Variables	13-5
COMMENT LINE (;) Command	13-7
APPEND FOLLOWING TEXT TO FILE (.AF) Command	13-8
APPEND SOURCE FILE TO DESTINATION FILE (.AP) Command	13-9
ATTRIBUTE FILE (.AT) Command	13-10

CHANGE DIRECTORY (.CD)	
Command	13-11
CENTER TEXT (.CE) Command	13-12
COPY FOLLOWING TEXT TO FILE	
(.CF) Command	13-13
CLEAR SCREEN(.CL) Command	13-14
COPY FILE (.CO) Command	13-15
CURSOR POSITION (.CP) Command	13-16
CARRIAGE RETURN (.CR) Command	13-17
DEFINE DEFAULT DRIVE (.DD)	
Command	13-18
DECISION (.DE) Command	13-19
DISPLAY LINE (.DL) Command	13-20
ECHO (.EC) Command	13-21
END-OF-FILE TEXT FOR .CF and	
.AF (.EF) Command	13-22
END PROFILE DEFINITION (.EN)	
Command	13-23
ERASE FILE (.ER) Command	13-24
MAKE DIRECTORY (.MD) Command	13-25
PROFILE NAME - APPLICATION	
(.NB) Command	13-26
PRINTER DECISION (.PR) Command	13-27
RENAME FILE (.RE) Command	13-28
RIGHT JUSTIFY TEXT (.RJ)	
Command	13-29
VERIFY DISKETTE (.VD) Command	13-30
Installation Aid Profile Examples	13-32
Example of an Installation Aid	
Application Profile	13-32
Installing "Exploring the IBM PC	
Network" Program	13-34
Chapter 14. The Token-Ring Network	14-1
Introduction	14-3
NET 700 Errors for Token-Ring	
Network	14-3
Determining What to Do After an	
Error	14-4
Messages	14-7
Problem Determination	14-7
Where to Find Additional Information	
on the Token-Ring Network	14-8

Appendix A. Messages	A-1
Message Information Format . . .	A-1
Prompt and Information Messages	A-2
Error Messages	A-9
Appendix B. Guidelines for Application Developers	B-1
General Guidelines for the Network	
Environment	B-2
Use of the APPEND Command . . .	B-2
Use of the Display Controller	B-3
Physical Resource Sharing	
Applications	B-3
Multiuser Considerations	B-5
Multistation Data Processing	
Applications	B-6
Coexistence of Applications With the PC LAN Program	B-7
Setting Up and Initializing	
Applications	B-10
Application-to-Application	
Communication	B-10
Transaction Processing	
Applications	B-11
Error Recovery and Problem Determination	B-13
Appendix C. Programming Interfaces .	C-1
Introduction	C-1
Function Call Overview	C-1
EXEC System Call	C-4
00H (INT 2AH) Installation Check	C-5
06H (INT 2AH) Network Print Stream	
Control	C-6
0300H (INT 2AH) Check Direct I/O . . .	C-9
0400H (INT 2AH) Execute NETBIOS (Error Retry)	C-11
0401H (INT 2AH) Execute NETBIOS (No Error Retry)	C-13
0500H (INT 2AH) Get Network	
Resource Information	C-15
B700H (INT 2FH) APPEND Installation Check	C-17

B702H (INT 2FH) APPEND Version Check	C-18
B800H (INT 2FH) PC LAN Program Installation Check	C-19
B803H (INT 2FH) Get Current Post Address	C-21
B804H (INT 2FH) Set New Post Address	C-22
B809H (INT 2FH) Network Version Check	C-35
Index	X-1

Chapter 1. Introduction

Introduction	1-3
Sharing Programs Over the Network . .	1-3
Before You Begin	1-4
PC LAN Diskettes	1-6
What Is a Network?	1-7
Menus and Commands	1-11
DOS and the PC LAN Program . .	1-12
Installing Applications to Share .	1-14
Starting the PC LAN Program . .	1-14
Setting Up Your Computer On the Network	1-16
Using Your Applications with the Network	1-21
Using the Network Request Keys to Interrupt Your Application . .	1-24
Sending and Receiving Messages on the Network	1-26
DOS Functions and the Network	1-30
Using The PrtSc Key	1-30
Commands	1-31
Deciding How You Want to Use the PC LAN Program	1-33
Choosing a Network Configuration for TopView	1-37
Choosing a Network Configuration for the IBM 3270 Workstation Program	1-37
Tasks You Can Do With the Network Configurations	1-38
Summary	1-40
You Are Ready to Start	1-41

Introduction

The IBM PC Local Area Network (LAN) Program is a powerful tool for you to use with your personal computer because it allows you to become part of a *local area network*. Through the network, you can share and use valuable resources among several people. You and other members of the network can all share and use equipment that previously was owned by only one person. Equipment, such as letter quality printers and fixed disks, now can be made available to everyone. Everyone can also share important data files and programs. With the network, you'll have the resources you need, available quickly, without having to leave your computer.

Sharing Programs Over the Network

Unless otherwise specified by IBM, IBM Personal Computer program license agreements permit the use of a program on a single machine. The customer is responsible for ensuring that each user on the network is appropriately licensed to use any program shared over the network.

For non-IBM programs, you should consult your license agreement or the vendor of the program to determine what is required for you to share the program over the network.

Before You Begin

You need one of the following IBM Personal Computers, with a minimum of 128K-bytes of memory, to use the PC LAN Program:

- IBM Personal Computer
- IBM Personal Computer XT (Models 89 or 286)
- IBM Personal Computer AT (Models 068, 099, 239, 319, 339)
- IBM Personal Computer AT/370
- IBM Portable Personal Computer
- IBM Personal System/2 Model 30
- IBM Personal System/2 Model 50
- IBM Personal System/2 Model 60.

You also need the following:

- Minimum of one 5-1/4" or 3-1/2" diskette drive
- LAN Adapter, cables, and associated hardware and software that present the NETBIOS interface

Four configurations may be defined for IBM Personal Computers using the PC LAN Program. See "Deciding How You Want to Use the PC LAN Program" on page 1-33 for information on how to use the configurations, including memory requirements.

You need DOS to use the PC LAN Program. Additionally, you should be aware of the following:

- If you are using an IBM AT/370 with the IBM VM/PC Control Program Version 2.01, you must configure the PC LAN Program as a redirector. See “Deciding How You Want to Use the PC LAN Program” on page 1-33 for information on how to set up a PC LAN redirector.
- The IBM Personal Services/PC Program Version 1.2 can be used with the PC LAN Program and the IBM 3270 Emulation Program Version 3.0.
- The redirector configuration (see “Deciding How You Want to Use the PC LAN Program” on page 1-33) of the PC LAN Program and DOS 3.2 or 3.3 should be used when operating the IBM Personal Services/PC Program in the IBM PC Network and IBM Token-Ring Network environments.

IMPORTANT

Before you use the PC LAN Program, you need to know how to use DOS. If you don't know how to use DOS, you should read the *DOS User's Guide* now. Come back to this book when you're finished.

PC LAN Diskettes

If you are using 5-1/4" diskettes, your diskettes should have the following labels:

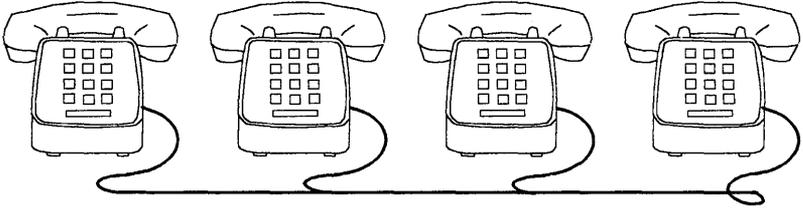
- The IBM PC Local Area Network Program
- The IBM PC Local Area Network Program Installation Aid
- The IBM PC Local Area Network Program-Message Manager for TopView

If you are using 3-1/2" diskettes, your diskettes should have the following labels:

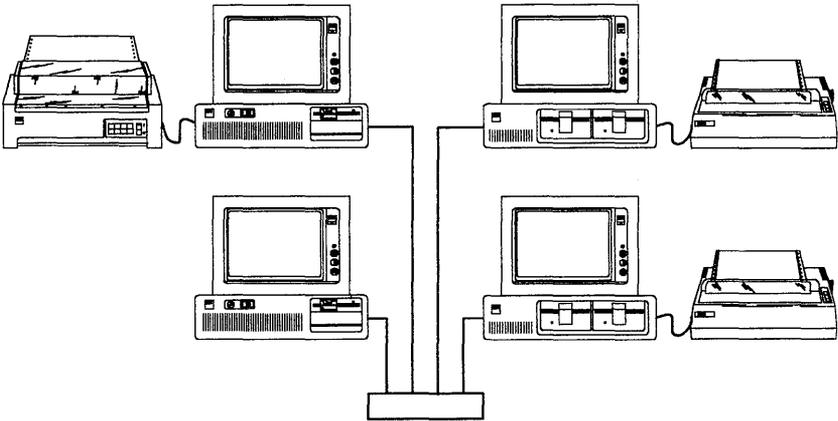
- The IBM PC LAN Program/Message Manager/Installation Aid

What Is a Network?

A network is a group of computers connected together through adapters and cables. Your telephone is connected to other telephones through the telephone lines.



Similarly, your computer is connected to other computers through the network.



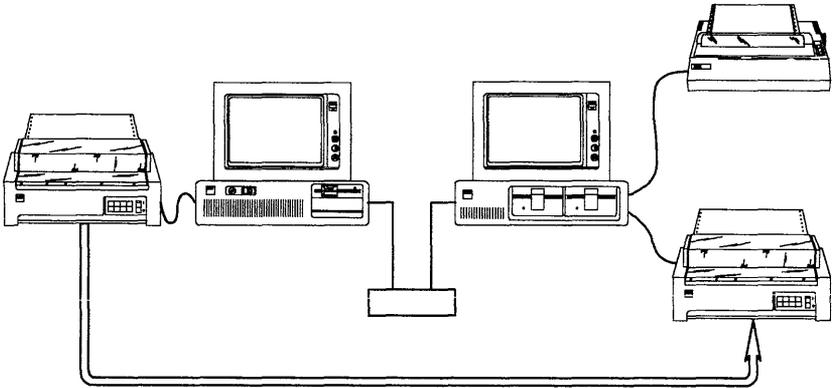
The IBM PC LAN Program allows your computer to communicate with the other computers on the network.

The network makes your computer more powerful because:

- You can make hardware, such as a letter-quality printer, available to everyone on the network.

For example, suppose you're on the network and your computer has a letter-quality printer attached to it. Some of the other people on the network don't have letter-quality printers attached to their computers and need to use yours.

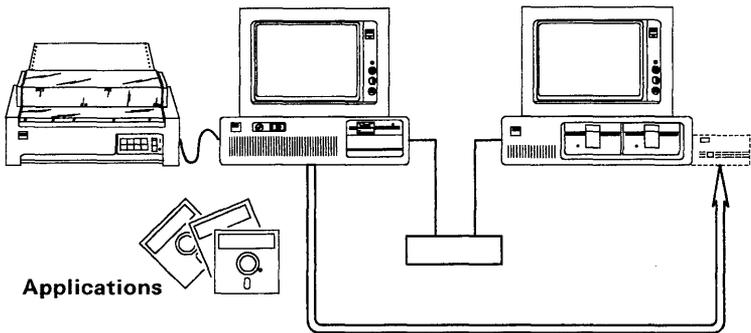
With the network, you can *share* your printer with the network. Then, other people can *use* your printer, just like they would use their own printers. Everyone on the network, including you, can print files on the printer.



- You can make applications or programs, such as word processing or accounting applications, available to everyone.

For example, suppose your computer has a fixed disk. You've installed a lot of applications in a directory on your fixed disk. The other people on the network want to use your applications.

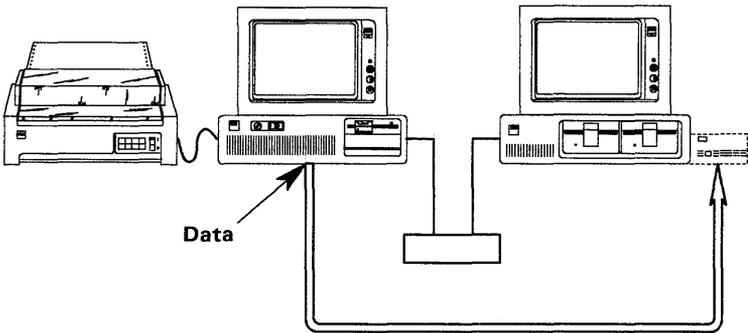
You can *share* your application directory with the network. Then, other people can *use* the applications in the directory. Of course, you can use your applications, too.



- You can make the most up-to-date data files for the applications available to everyone.

For example, suppose you also have data files for your applications in a directory on your fixed disk. You and several other people on the network need to use the most up-to-date files for your applications.

With the network, you can *share* the data file directory with the network. Then, other people can *use* the files in the directory.

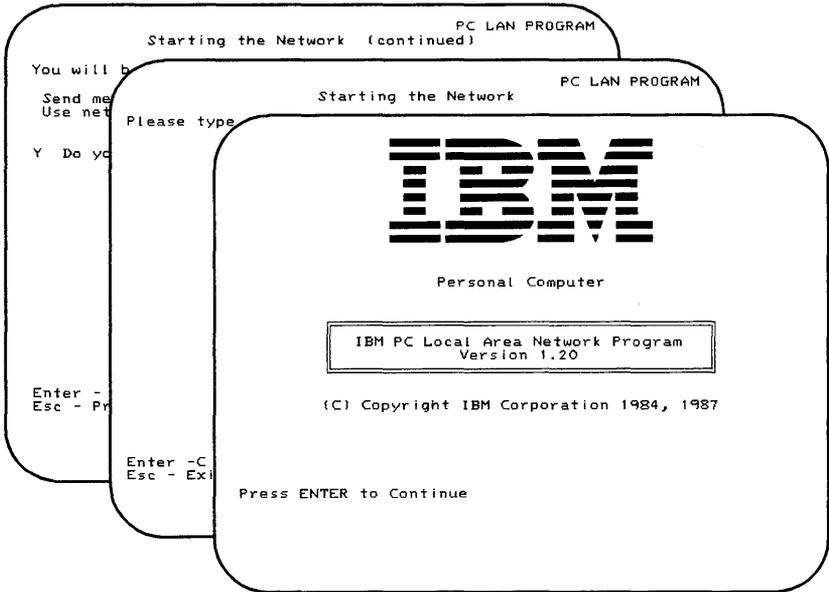


Menus and Commands

You can give instructions to the PC LAN Program in two ways: *menus* or *commands*.

Menus

If you're new to using a computer, menus are easier. The menus lead you through all the steps you need to complete the task. The menus also tell you when you've completed the task or when you've made a mistake.



Commands

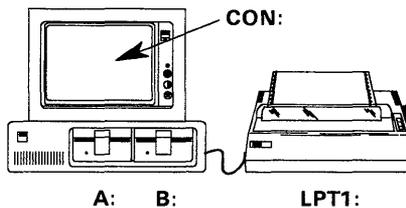
If you're familiar with DOS commands, you may prefer to use the PC LAN Program commands. The commands are similar to DOS commands. You should try the menus also, just to see how they work.

DOS and the PC LAN Program

The PC LAN Program works with DOS. To use the PC LAN Program, you need to know about DOS.

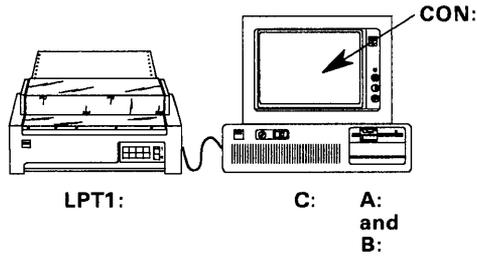
DOS has preset names for each device; such as a disk drive, a printer, or a display, attached to your computer. These names are called *device names*. DOS uses the device names to give instructions to each of your devices.

For example, if you have a computer with a display, two diskette drives, and a printer, DOS sees your computer like this:



- The first diskette drive is A
- The second diskette drive is B
- The display is CON (for console)
- The printer is PRN or LPT1 (for printer or line printer 1)

If you have a computer with a display, one diskette drive, one fixed disk, and a printer, DOS sees your computer like this:



- The first diskette drive is A *and* drive B
- The first fixed disk drive is C
- The display is CON (for console)
- The first printer is PRN or LPT1 (for printer or line printer 1)

More information about device names is in the *DOS User's Guide* under "DOS Reserved Device Names."

Installing Applications to Share

If your computer has a fixed disk, you may want to share applications from your fixed disk with other computers on the network.

Before you start the PC LAN Program, your applications must be correctly installed in a directory on your fixed disk. You may also install a *private directory* on your fixed disk for each person who uses your applications. A private directory is a directory that is assigned to a person for his own use. For example, network users can store their own personal files in their private directory. The PC LAN Program Installation Aid stores special application program files in the private directories.

To help you install your application easily and help you create private directories for the people who use your applications, you can use the PC LAN Program Installation Aid. The aid helps you install DOS, the PC LAN Program, your IBM applications, other applications, and private directories on your fixed disk. You'll find that the aid is easy to use and has menus to prompt you through the installations. You'll learn how to use the aid in Chapter 2. Additional information is included in Chapters 10 and 13.

Starting the PC LAN Program

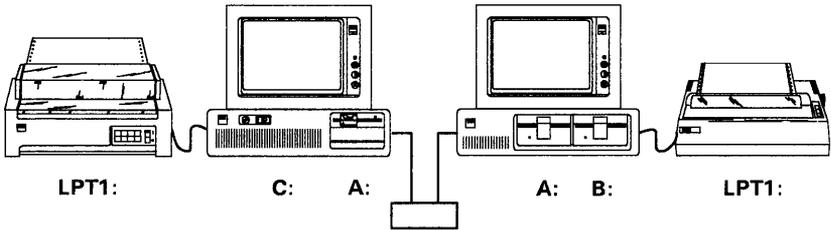
To make your computer work on the network, you have to start DOS and then start the PC LAN Program.

When you start the PC LAN Program, you need to identify your computer from all of the other computers on the network. To do this, you give your computer a *network name* when you start the PC LAN Program. The network name identifies your computer on the network.

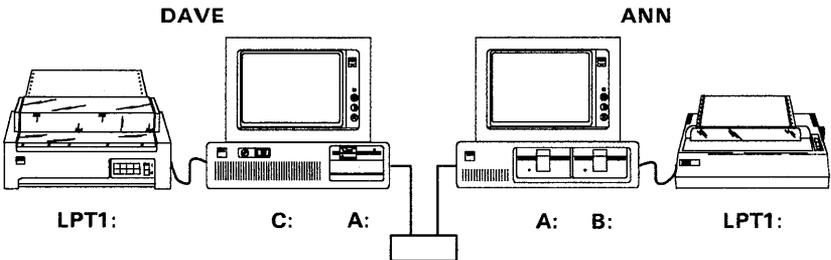
Let's look at an example to understand what a network name is. The examples in this book show only two computers on the network. Your network probably has more computers on it. But even though your computer is on the network, it's still a *personal computer*. You can control how you use the network, and you can quit using the network any time.

Example

Suppose two computers are attached to a network. The computers belong to Dave and Ann. Dave has a fixed disk and a letter-quality printer attached to his computer.



Dave and Ann want to use the PC LAN Program to communicate through the network. First, Dave and Ann start DOS on their computers. Then Dave and Ann start the PC LAN Program with the network names DAVE and ANN.



Setting Up Your Computer On the Network

After you start the PC LAN Program, you have to *set up* your computer. Set up means that you specify devices you want to share or devices that you want to use.

Sharing Your Devices

If you install the PC LAN Program on a fixed disk, you can share your disks, directories, and printers with other network computers.

To share devices, you give them a *network name* that the network can recognize. The network name for your computer and the network name for the device you want to share are combined to form a unique name on the network.

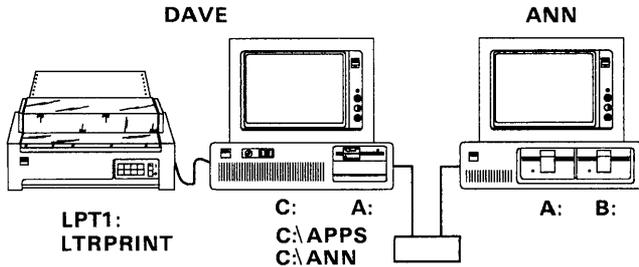
For example, ANN may call her applications directory APPS, and DAVE may also call his applications directory APPS. But, when the two network names are put together, Ann's directory is \\ANN\APPS and Dave's is \\DAVE\APPS.

Example

In our example, Dave used the installation aid to install some applications on his fixed disk. The applications are in a directory named APPS. Dave also installed a private directory for Ann and named it ANN.

Now, Dave has started the network and is ready to share his APPS directory and the ANN directory. He also wants to share his letter-quality printer, LPT1.

Dave shares the APPS directory as network name APPS, the ANN directory as network name ANN, and the printer as network name LTRPRINT. The directories and the printer are available for Ann to use.



Using Network Devices

All users on the network can set up their computers to use devices that are shared with the network. To use the shared devices, you have to know the network name of the computer that shared the device and the network name of the device you want to use. Then you have to give the network device a DOS device name. The DOS device name lets DOS on your computer recognize the device as if it were really attached to your computer.

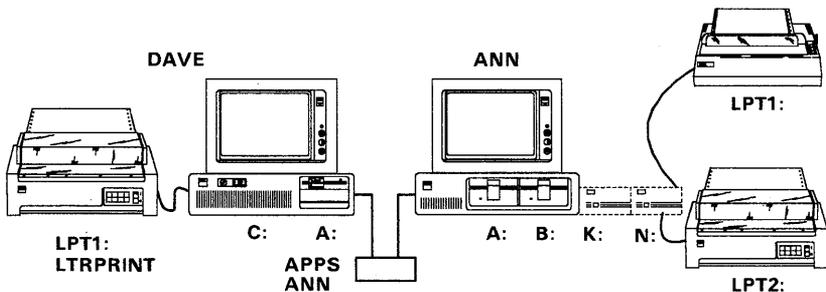
For example, if you use a network device as your drive N, DOS on your computer now recognizes N as a drive on your computer. If you use a network device as your drive B and you have a diskette drive B attached to your computer, DOS on your computer now recognizes the network device as drive B. Your diskette drive B is unavailable while you are using the network device as your drive B.

Example

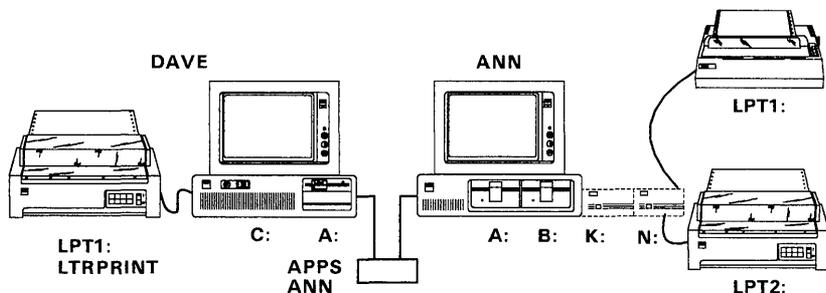
Suppose Ann wants to use the devices that DAVE has shared. Ann needs to know the network name for Dave's computer (DAVE). She also needs to know the network names for the directories and the printer that Dave has shared (APPS, ANN, and LTRPRINT). Then Ann has to give each network device a DOS device name so that DOS on her computer recognizes the devices.

If DAVE used the Installation Aid to install his applications and remote users private directories, he should provide ANN with a copy of the network users information printed out by the Installation Aid. This information contains the network names for the directories DAVE has shared (APPS, ANN), the drive letter (K, L, M, or N) which ANN should use as the APPS directory. Dave also should tell ANN the network name for the printer he has shared (LTRPRINT).

Ann can use the APPS directory as her drive K, L, M, or N (depending on the drive letter DAVE chose while using the Installation Aid). Let's say N. She uses ANN (her private directory) as her drive K, and she uses LTRPRINT as her second printer, LPT2. Now Ann's computer has a drive N, a drive K, and a letter-quality printer, LPT2. Dave can still use his directories and his printer.



Now Dave and Ann have set up their computers on the network. Their computers are named DAVE and ANN. Dave is sharing the APPS directory as network name APPS, the ANN directory as network name ANN, and his LPT1 as network name LTRPRINT. Ann is using APPS as if it were her drive N, ANN as if it were her drive K, and LTRPRINT as if it were her LPT2.



Saving Your Network Setup

After you've started the PC LAN Program and you've set up your computer on the network, you may want to *save* your PC LAN Program setup. Saving your setup means that you keep a copy of all the tasks you did to set up your computer on the network in a file named AUTOEXEC.BAT.

Each time you start DOS, your computer finds the file. You'll see a prompt asking you if you want to start the network. If you choose to start the network, the tasks you saved are executed and your computer is automatically set up on the network.

Note: If you already have an AUTOEXEC.BAT file, your file is renamed to AUTOUSER.BAT. AUTOUSER.BAT is executed after AUTOEXEC.BAT. Any commands that should be executed before starting the network should be moved from AUTOEXEC.BAT to the User Area of the AUTOEXEC.BAT (between the .*** entries). See “Saving Your Network Setup” on page 4-18 for more information.

Example

Now that Dave and Ann have started the PC LAN Program and set up their computers on the network, they can save their setups. Whenever they start DOS on their computers, they can automatically start the network and set up their computers. Of course, because Dave is sharing devices with Ann, Dave needs to start his computer first so that his devices are ready for Ann to use.

If you're sharing your devices with other network computers, you need to properly maintain your devices. You should:

- Be sure that you start DOS and the PC LAN Program, then set up your computer on the network *before* the other computers start.
- Be sure that you don't restart DOS (Ctrl-Alt-Del) or switch off your computer while others are using your devices. When you restart DOS, you stop the PC LAN Program on your computer and your devices are no longer available for others to use.

If you're planning to restart DOS or switch off your computer, send a message to everyone and give them a chance to finish their work with your devices.

- Be sure that your printer is online and ready for use.

Using Your Applications with the Network

After you've set up your computer to use the network, you're ready to do your normal work. Even though you can't see it, the PC LAN Program is still working on your computer, behind your application and DOS. If you're sharing devices with the network, the devices are still shared. If you're using devices from the network, the devices are still available for you to use, right from your application.

Using Applications that You've Shared

Sharing your applications with the network does not prevent you from using them. These applications are still available for you to use.

If the applications were installed with the installation aid, you can start the application from any disk or directory on your computer. And, if you can't remember how to start the application, you can enter HELP at the DOS prompt to see a list of your applications and how to start them.

Using Applications from Another Computer

If you're using applications from another computer, you can use the applications as you normally do.

If the applications were installed with the installation aid, you need to do the following steps *before* you use the applications:

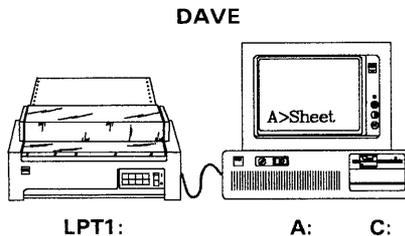
1. Use the APPS directory and your private directory.
2. Make your private directory your current drive.

3. Enter NETPATH at the DOS prompt. NETPATH lets you access the applications from your computer.
4. Change your current drive to any drive *except* the drive that contains the applications. (You'll probably want to make the drive that contains the data files for your application your current drive.)
5. Now you can start your application. If you can't remember how to start an application, you can enter HELP at the DOS prompt to see a list of the applications and how to start them.

Example

In our example, Dave and Ann are ready to use their applications. First, Dave and Ann go back to the DOS prompt.

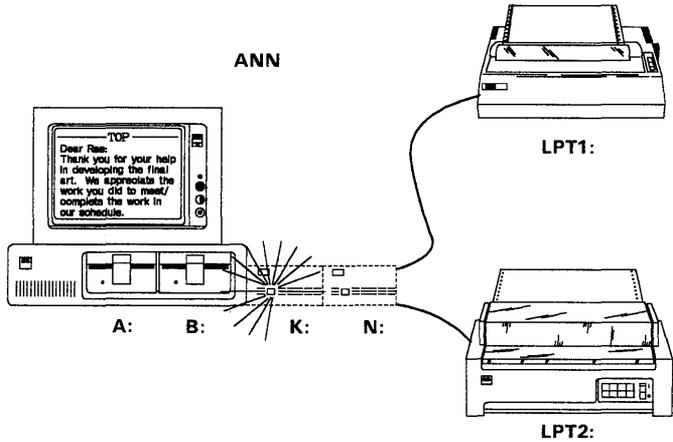
Dave wants to do some work with a spreadsheet application that he's installed with the installation aid. So, Dave goes to the DOS prompt and enters HELP to find out how to start the application. Then Dave starts the application.



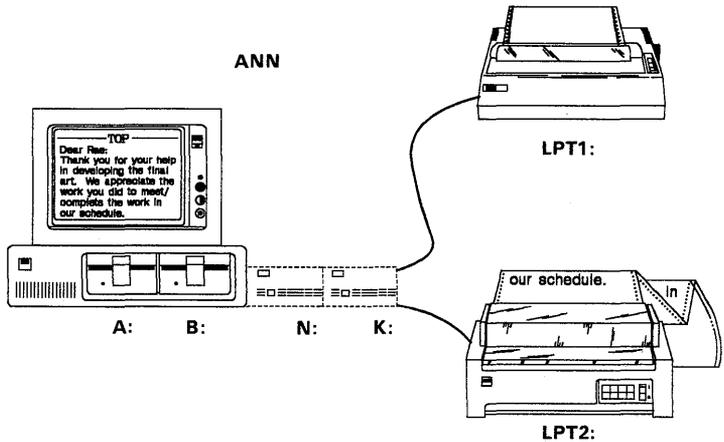
Ann needs to use a word processing program that Dave has installed on his computer using the installation aid. Ann has already used the APPS directory on computer DAVE as her drive N. She also used ANN (her private directory on computer DAVE) as her drive K. So, Ann makes

K her current drive and enters the NETPATH command.

Ann wants to put her data files in her private directory that resides on Dave's computer, so she continues using K as her current drive. Then Ann starts the application.



Ann can also use her word processing program to print files on LPT2, which is the printer on Dave's computer. Dave can print files on the printer, too.



Using the Network Request Keys to Interrupt Your Application

You may need to do something on the network after you've already started an application. For example, you may be in your application and remember that you need to use a network directory that contains data files for the applications.

If you chose to use the *Network Request keys* (Ctrl-Alt-Break keys) when you started the network, you can quickly go from your application to the PC LAN Program, then back to your application.

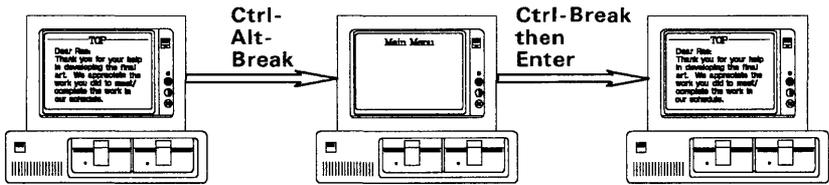
If you chose not to use the network request keys when you started your application, you can't go from your application to the PC LAN Program. You have to end your application and go back to the DOS prompt, go to the PC LAN Program, and then start your application again.

Example

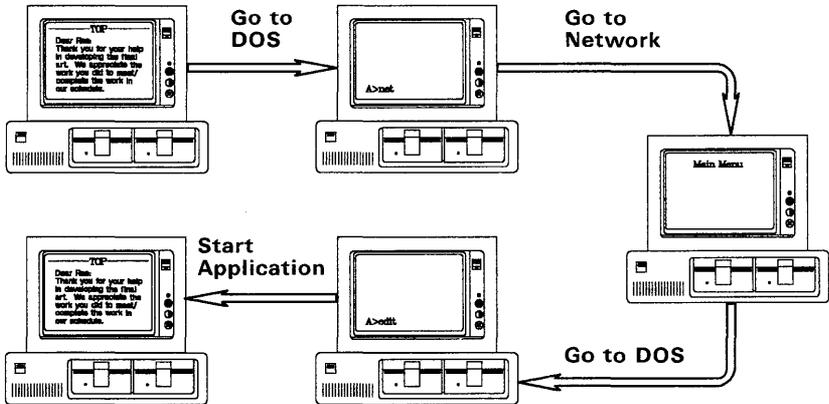
Suppose Ann chose to use the network request keys when she started the PC LAN Program, and she is in her word processing application. She forgot to use Dave's printer. She needs the printer to print her documents.

Ann presses Ctrl-Alt-Break (the network request keys) to get to the PC LAN Program. Ann uses LTRPRINT from DAVE as her LPT2.

Then Ann presses Ctrl-Break and Enter to go back to her word processing application.



If Ann wasn't using the network request keys, she would have to quit using her application and go back to the DOS prompt. Then Ann would have to go to the PC LAN Program and use Dave's printer. To get back to her application, Ann has to start the application again.



Sending and Receiving Messages on the Network

You can use the network to send and receive messages.

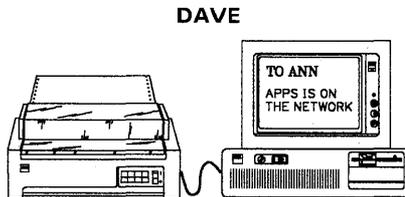
Sending Messages

All you have to do to send a message is tell the network the network name of the computer that you want to send the message to, and type the message. The network finds the network name, if it's on the network, and delivers your message.

You can also send a message to every computer on the network all at the same time. A message to every computer is called a *broadcast message*. Instead of using a network name, you use an asterisk (*).

Example

In our example, Dave wants to send Ann a message and tell her that his directory is ready for her to use. So, he sends a message to network name ANN saying "APPS is on the network."



Receiving Messages

You can also receive messages at your computer. The way you receive messages at your computer depends on how you started the PC LAN Program:

- If you chose *not to use* the network request keys, you'll receive messages on your screen, on top of whatever is on your screen. You will hear a *beep* when you receive the message. You can *refresh* your screen to erase the message. Refresh means to redisplay what's on your screen, or change to a new screen. Some applications do not provide a way to redisplay what's on your screen.

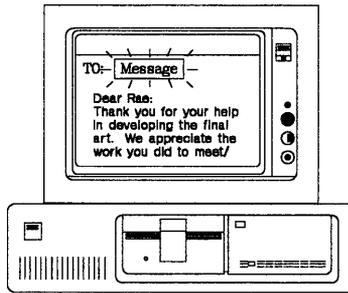
If you chose not to use the network request keys, you should save or log your messages in a file. If you save your messages, you won't be interrupted and you can choose to look at them when you're ready.

- If you chose *to use* the Network Request keys, you'll hear a *beep* and be notified when you receive a message. You can then press Ctrl-Alt-Break (the network request keys) to see the message, or you can wait until later to see the message. Your screen is saved for you so that you don't have to refresh your screen. If you don't want to be interrupted at all, you can save your messages in a file and look at them later.

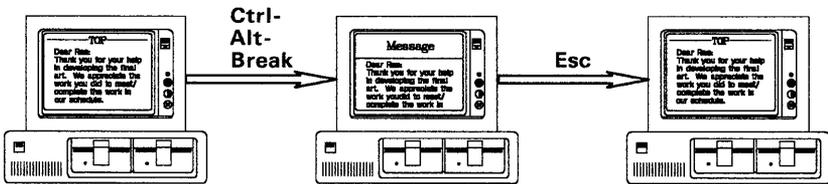
Example

Suppose Ann is on the network and is using a word processing program. Ann is receiving messages on her screen and is using the network request keys.

Ann receives the message from Dave, hears a beep, and is notified that she's received a message.

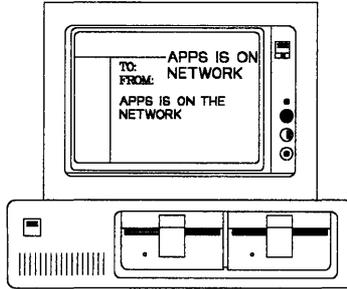


Ann wants to see the message, she presses Ctrl-Alt-Break (the network request keys) and the message is displayed.



Ann reads the message. Then Ann goes back to her application. She's back to her work, without losing any of her text.

Suppose Ann is receiving messages on her screen and is not using the network request keys. When she receives Dave's message, she sees the message overlaying (on top of) the text that's on her screen.



Ann reads the message, then refreshes the screen. The screen can be refreshed, in some applications, by pressing the PgDn key to scroll forward.

DOS Functions and the Network

Using The PrtSc Key

Printing a Screen (Shift-PrtSc)

If you are sharing your first printer (LPT1) with the network or if you are using a network printer as your LPT1, you cannot use Shift-PrtSc to print a screen. If you press Shift-PrtSc, you'll hear a "beep" telling you that you can't print the screen.

Stop sharing or using the network printer before doing a Shift-PrtSc. You can also pause print redirection. See "Pause and Continue Tasks" in Chapter 5, or the "NET PAUSE" command in Chapter 7.

Printing What You Type (Ctrl-PrtSc)

If you are sharing your printer (LPT1) with the network or if you are using a network printer as your LPT1, you cannot use Ctrl-PrtSc to echo what you type to the printer. If you press Ctrl-PrtSc, you'll hear a "beep" telling you that you can't print what you type.

Stop sharing or using the network printer before doing a Ctrl-PrtSc. You can also pause print redirection. See "Pause and Continue Tasks" in Chapter 5, or the NET PAUSE command in Chapter 7.

Commands

You can use most of the DOS commands on network disks, directories, and printers.

For example, you can use the DIR command to list the contents of a network disk or directory:

```
dir k:
```

You can use the COPY command to copy files from a network disk or directory. You can copy the files to your own disk or to a network disk or directory:

```
copy b:letter k:
```

You *cannot use* the following DOS commands with devices that you're sharing or network devices that you're using. If you try to use these commands with a network device, you'll receive an error message telling you that you can't use the command. (You can still use the commands with the your disks, directories, and printers that are not on the network.)

You can't use:

- CHKDSK (Check Disk)
- DISKCOMP (Disk Compare)

Note: You can use the COMP (Compare) command to compare files instead.

- DISKCOPY (Disk Copy)

Note: You can use the COPY command to copy files, instead.

- FDISK
- FORMAT
- JOIN
- LABEL

Note: You cannot change the volume ID of a network device you are using. You can change it on a device you are sharing.

- PRINT

Note: Use the PRINT command if you are using network devices. You cannot use the PRINT command if you are sharing devices with the network. Use the NET PRINT command if you are sharing devices.

- RECOVER
- SUBST (Substitute)
- SYS (System)
- VERIFY

Note: The VERIFY command won't work for files on a network device. You can use the VERIFY command for files on a device attached to your computer.

Deciding How You Want to Use the PC LAN Program

Now that you know a little about how the PC LAN Program works, you can decide how you want to use the program. The way that you use the PC LAN Program depends on:

- Whether your computer has a fixed disk
- How much memory your computer has
- The tasks you want to do
- Whether you plan to use TopView after starting the PC LAN Program

Based on these requirements, the PC LAN Program has the following four configurations:

- Server
- Messenger
- Receiver
- Redirector

Note: If you use the menus, you won't see the names of the network configurations. But you choose one of the configurations by choosing what you want to do on the "Starting the Network" menus.

You can use the following table to decide how you're going to use the PC LAN Program.

The memory sizes for each configuration in the table are the minimum requirements for the default starting values for the PC LAN Program. The memory requirements will change if you choose starting values other than the defaults. Current defaults were selected to enhance

network performance, but not to minimize memory.

Note: The memory requirements are the resident memory used by the PC LAN Program. DOS, associated software, and application programs have their own memory requirements. See the appropriate reference manuals.

Additional memory will be needed to run applications or issue NET commands.

Configuration:	You can use the PC LAN Program to:
<p>(Server)</p> <p>Requires a minimum of:</p> <p>One fixed disk</p> <p>One 5-1/4" or 3-1/2" diskette drive</p> <p>350K-bytes of memory</p>	<p>Send messages; Receive messages; and Save (log) messages</p> <p>Use network disks, directories, and printers</p> <p>Use the network request keys (Ctrl-Alt-Break)</p> <p>Receive messages for other names; and Transfer messages to other computers</p> <p>Share your disks, directories, and printers</p>
<p>(Messenger)</p> <p>Requires a minimum of:</p> <p>One 5-1/4" or 3-1/2" diskette drive</p> <p>160K-bytes of memory</p>	<p>Send messages; Receive messages; and Save (log) messages</p> <p>Use network disks, directories, and printers</p> <p>Use the network request keys (Ctrl-Alt-Break)</p> <p>Receive messages for other names; and Transfer messages to other computers</p>

Configuration:	You can use the PC LAN Program to:
<p>(Receiver)</p> <p>Requires a minimum of:</p> <p>One 5-1/4" or 3-1/2" diskette drive</p> <p>68K-bytes of memory</p>	<p>Send messages; Receive messages; and Save (log) messages</p> <p>Use network disks, directories, and printers</p>
<p>(Redirector)</p> <p>Requires a minimum of:</p> <p>One 5-1/4" or 3-1/2" diskette drive</p> <p>50K-bytes of memory</p>	<p>Send messages</p> <p>Use network disks, directories, and printers</p>

Choosing a Network Configuration for TopView

If you plan to use TopView after starting the PC LAN Program, you must select the **Redirector** configuration of the PC LAN Program. Also, if you want to receive messages after starting TopView, you must start the IBM PC LAN Program-Message Manager for TopView application after starting TopView.

Choosing a Network Configuration for the IBM 3270 Workstation Program

If you plan to use the IBM 3270 Workstation Program after starting the PC LAN Program, you may select any configuration except **Server**.

Also, if you select the **Receiver** or **Messenger** configuration and you plan to use the IBM 3270 Workstation Program, you cannot log your messages to the console. This is the default for the **Receiver** configuration. See the "NET LOG Command" on page 7-32 to change the default so that you log your messages to a file.

Tasks You Can Do With the Network Configurations

Each configuration can do *some* of the following tasks:

- **Share your disks, directories, and printers**

This means that you will be able to let other computers use your devices. Of course, you have to tell the network which devices you want to share. *You must install and start the PC LAN Program on a fixed disk to share your devices.*

- **Transfer messages to other computers**

This means that you can move a name for which you are receiving messages to another computer. Then the other computer receives messages for the name. You may want to do this if you are leaving, but you want someone else to get messages for your names.

- **Receive messages for other names**

This means that you can give your computer more network names for which you want to receive messages. You may want to do this if your office has several people for whom you need to get messages.

- **Use the network request keys to interrupt your work and use PC LAN**

This means that, even if you are in an application, you can press Ctrl-Alt-Break (the network request keys) so that you can do a PC LAN Task.

You will be notified when you receive messages. A message window is displayed in the middle of the screen. You can press

Ctrl-Alt-Break to go see the message or you can press Ctrl-Break to go back to your work.

If you don't use the network request keys, you'll have to go to the DOS prompt to use the PC LAN Program. You will receive messages on your screen and have to redisplay or "refresh" your screen to go back to your work.

Note: Some applications won't accept or allow network request keys in all situations.

If you wish to use the network request keys and require one of the DOS national language keyboard drivers, load the driver prior to starting the network.

- **Log messages in a log file**

This means that you can put messages that you receive into a file. You won't be interrupted when you receive messages. Instead, your messages go into the file. You can look at them whenever you want to.

- **Receive messages from other computers**

This means that you'll get messages from other network computers.

- **Use network disks, directories, and printers**

This means that you can use disks, directories, and printers that other computers share with the network. Of course, you have to tell the network which devices you want to use.

- **Send messages to other computers**

This means that you can send a message to one computer or to all the computers on the network.

Summary

Let's review what we've learned so far.

- You have to start the PC LAN Program first.
- When you start the program, you give your computer a network name.
- If you've installed the PC LAN Program on a fixed disk, you can share your devices with other computers. (Of course, you can also use other computers' devices, too.)

- You cannot share devices, if your computer doesn't have a fixed disk. However, you can use devices from other computers.
- You can send and receive messages.
- You can use your applications just like you normally do. The PC LAN Program is still running on your computer, even though you aren't aware of it.
- The network request keys are a quick way for you to interrupt your application and do PC LAN Program tasks without having to end your application.
- Using network request keys allows you to be notified when you receive a message and choose to look at the message or wait till later to see the message.
- You can use all of the DOS Commands *except* CHKDSK, DISKCOMP, DISKCOPY, FDISK, FORMAT, JOIN, LABEL, PRINT, RECOVER, SUBST, SYS, and VERIFY with network devices.

You Are Ready to Start

You're ready to get started with the PC LAN Program. First, you need to install the program. Go to Chapter 2, "Installing Your Programs" to get started.

If you've already installed the PC LAN Program or if someone installed it for you, you can skip Chapter 2. Go to Chapter 3, "How the Menu Work" instead.

Chapter 2. Installing Your Programs

Introduction	2-3
Making Sure Your Computer is Connected to the PC LAN	2-4
Making a Copy of Your PC LAN Program Diskette	2-4
Installing the PC LAN Program	2-5
Installing for Diskette Drives	2-5
Installing for a Fixed Disk	2-21
Adding Additional Users or Applications	2-33

Introduction

Now that you've learned a little about what a network is and how you can use it, you're ready to install the PC LAN Program on your computer.

This chapter tells you how to:

- Check to be sure your computer is connected to the network
- Make a backup copy of your PC LAN Program diskette
- Install the PC LAN Program
- Install applications.

Making Sure Your Computer is Connected to the PC LAN

Check to see if you have a PC LAN Adapter in your computer. The adapter should have a network cable attached to it.

If your adapter is installed and the cable is connected, continue with “Making a Copy of Your PC LAN Program Diskette.”

If you don't have the adapter or if the adapter isn't connected to a cable, you must install the adapter and attach the cable. See the setup instructions that you received with the adapter for more information.

Making a Copy of Your PC LAN Program Diskette

You should make a copy of your PC LAN Program diskette before you start using the program.

You should use the copy to do your work and keep the original diskette in a safe place.

Use the DOS DISKCOPY command to make the copy. If you are not familiar with the DOS DISKCOPY procedure, follow the instructions in “Copying Your Diskettes” in the *DOS User's Guide* to make a copy of your PC LAN Program diskette.

Note: Because of the variety of possible drive configurations, be sure that you have read “Drive Considerations” in the *DOS User's Guide* before you install your PC LAN Program.

Installing the PC LAN Program

After you've made a copy of the PC LAN Program, you're ready to install the program on your computer.

If your computer only has diskette drives, go to "Installing for Diskette Drives" for instructions.

If your computer has a fixed disk, go to "Installing for a Fixed Disk" on page 2-21 for instructions.

Installing for Diskette Drives

The way that you install the PC LAN Program depends on the kind of diskette drive that you plan to use the program from.

You may want to use the program from one of the following kinds of diskette drives:

- A high capacity diskette drive.
- A 5-1/4" diskette drive
- A 3-1/2" diskette drive

You also need to know how much memory your computer has.

Note: You can use the Diagnostics diskette that came with your Personal Computer *Guide to Operations* manual to determine the kinds of drives and the amount of memory your computer has.

Decide which kind of drive you plan to use the PC LAN Program from and make sure you know how much memory your computer has. Then, do *one* of the following:

- If you want to install the program for a high capacity drive, go to “Installing for High Capacity Drives” to continue.
- If you want to install the program for a 5-1/4” diskette drive, go to “Installing for a 5-1/4” Drive” on page 2-11 to continue.
- If you want to install the program for a 3-1/2” diskette drive, go to “Installing for a 3-1/2” Drive” on page 2-16 to continue.

Note: You cannot install the PC LAN Program on a 160K-byte or 180K-byte (single-sided) drive.

Installing for High Capacity Drives

Follow these instructions to install the PC LAN Program for a high capacity drive:

1. Check to be sure that:
 - a. You are using a computer with at least one high capacity drive to install the PC LAN Program.
 - b. You have your copy of the PC LAN Program diskette and your copy of DOS that you created using the DOS Select command.
 - c. You have one blank high capacity diskette.
 - d. Your DOS diskette is in drive A.
 - e. You have started DOS and are at the DOS prompt and your current drive is A.

2. Follow these steps to format the blank high capacity diskette:

- a. Enter the following command:

```
format a: /s
```

You'll see a prompt asking you to insert the diskette for drive A.

- b. Insert the blank diskette in the drive.
- c. Follow the instructions on your screen. You'll see a message when FORMAT ends.
- d. When FORMAT ends, remove the diskette.
- e. Write the following name on the diskette label (use a felt-tip pen):

```
DOS/PC LAN
```

Your diskette is formatted and contains the DOS system. You should be at the DOS prompt.

3. If you are using a **U.S. English** keyboard, **skip** this step. **Go to step 4.** Otherwise do one of the following to copy the keyboard configuration for your country.

- If your computer only has one diskette drive:
 - a. Make sure your copy of the DOS diskette is in the drive and enter the following command.

```
copy autoexec.bat b:
```

When prompted to insert the diskette for drive B, insert the DOS/PC LAN diskette you created earlier.

- b. Make sure that your copy of the DOS diskette is in the drive and enter the following command.

```
copy config.sys b:
```

When prompted to insert the diskette for drive B, insert the DOS/PC LAN diskette again.

- c. You can now copy the keyboard routine for your particular country. Consult your *Disk Operating System Reference* for details on how to do this.
 - d. Go to step 4.
- If your computer has two diskette drives:
 - a. Insert your copy of the DOS diskette in drive B.
 - b. Type **B:** and press Enter to make B your current drive.
 - c. Insert the diskette that you labeled DOS/PC LAN in drive A.
 - d. Enter the command:

```
copy autoexec.bat a:
```
 - e. Enter the command:

```
copy config.sys a:
```
 - f. Type **A:** and press Enter to make A your current drive.
 - g. Consult your *Disk Operating System Reference* for details on how to copy the keyboard routine for your country.

4. Do one of the following:

- If your computer only has one diskette drive,

a. Insert your copy of the PC LAN Program diskette in drive A.

b. Enter the following command:

```
install b: hc tvmsg
```

IMPORTANT: You'll be prompted to switch your diskettes. When you're prompted to:

– **Insert the diskette for drive B,** insert the diskette that you labeled **DOS/PC LAN.**

– **Insert the diskette for drive A,** insert your copy of the PC LAN Program diskette.

– **Insert the Message Manager for TopView diskette in drive A,** insert the IBM PC Local Area Network Program-Message Manager for TopView diskette shipped in the PC LAN package.

- If your computer has two diskette drives,

a. Insert your copy of the PC LAN Program diskette in drive A.

b. Insert the diskette that you labeled **DOS/PC LAN** in drive B.

c. Enter the following command:

```
install b: hc tvmsg
```

- d. Follow the instructions on the screen to install the program.

When prompted to insert the Message Manager for TopView diskette, insert the IBM PC Local Area Network Program-Message Manager for TopView diskette in drive A.

When you install the PC LAN Program, a subdirectory named NETWORK is created on your high capacity diskette. The PC LAN Program files for your configuration are installed in the subdirectory. NETWORK is a subdirectory of the root directory.

The DOS prompt is displayed when the PC LAN Program is installed. Your installed PC LAN Program diskette contains all the information that you need to start DOS and the PC LAN Program. The diskette also contains the **Message Manager for TopView** which you will need if you are going to use TopView with the PC LAN Program.

Note: When you installed the PC LAN Program, you also installed a CONFIG.SYS file. If you already had a CONFIG.SYS file, the PC LAN Program alters your file to include additional commands needed by the PC LAN. The CONFIG.SYS file contains special commands that help tailor the way that you want to use your computer's memory with DOS.

You can change the CONFIG.SYS file by editing the file with the text editor you normally use (such as EDLIN). See "Edit CONFIG.SYS Using EDLIN" on page 9-4. Some of the CONFIG.SYS commands you can use in a CONFIG.SYS file are shown in Chapter 9. Also, if you want to make changes for DOS, you can use the CONFIG.SYS commands shown in the *DOS Reference*.

5. Remove the diskettes from the drives.
6. Put the DOS/PC LAN diskette into drive A.
7. Restart DOS by pressing Ctrl-Alt-Del.

IMPORTANT: From now on, you should always use the DOS/PC LAN diskette that you just made to start DOS and the PC LAN Program on your computer.

When you see the DOS prompt, you're ready to start the network.

8. Go to the next chapter to continue.

Installing for a 5-1/4" Drive

Follow these instructions to install the PC LAN Program for a 5-1/4" drive:

1. Check to be sure that:
 - a. You are using a computer with at least one 5-1/4" drive to install the PC LAN Program.
 - b. You have your copy of the PC LAN Program diskette and your copy of DOS that you created using the DOS Select command.
 - c. You have two blank diskettes.
 - d. You have started DOS and are at the DOS prompt and your current drive is A.
 - e. Your DOS diskette is in drive A.
2. Follow these steps to format the blank diskettes:
 - a. Format the first diskette by entering the command:

format b: /s

- b. When prompted to insert the diskette for drive B, do one of the following:
 - If your computer only has one drive, remove the DOS diskette and insert the blank diskette in the drive. Remember that your one drive is both your drive A and your drive B.
 - If your computer has two drives, insert the blank diskette in drive B.
- c. When formatting is complete, remove the diskette and type *n* to the message:

Format another (Y/N)?.

- d. Write the following name on the formatted diskette's label (use a felt-tip pen):

DOS/PC LAN

Your diskette is formatted and contains the DOS system. You should be at the DOS prompt.

- e. Format the second blank diskette by entering the command:

format b:

- f. When formatting is complete, remove the formatted diskette and write the following name on the label.

Message Manager for TopView

Type *n* to the message:

Format another (Y/N)?.

3. If you are using a **U. S. English** keyboard, **skip** this step. **Go to step 4.** Otherwise perform the following steps to copy the keyboard configurations for your country.
 - a. Make sure your copy of the DOS diskette is in drive A and enter the following command.

```
copy autoexec.bat b:
```

When prompted to insert the diskette for drive B, insert the **DOS/PC LAN** diskette you created earlier.

- b. Make sure that your copy of the DOS diskette is in drive A and enter the following command.

```
copy config.sys b:
```

When prompted to insert diskette for drive B, make sure the **DOS/PC LAN** diskette is in drive B.

- c. You can now copy the keyboard routine for your particular country. Consult your *Disk Operating System Reference* for details on how to do this.

4. You will now install the PC LAN Program.
 - a. Insert your copy of the PC LAN Program diskette in drive A.

Do one of the following:

- If your computer only has one drive, go to step *b*.
- If your computer has two drives, insert the formatted diskette you labeled **DOS/PC LAN** in drive B.

- b. Enter the following install command:

```
install b: ds tvmsg
```

IMPORTANT: If your computer only has one drive, you'll be prompted to switch your diskettes. When you're prompted to insert the diskette for drive B, insert the diskette that you labeled **DOS/PC LAN**. When you're prompted to insert the diskette for drive A, insert your copy of the PC LAN Program diskette.

- c. Follow the instructions on the screen. During installation you will be prompted to:
 - **Insert the Message Manager for TopView diskette in drive A.** Insert the IBM PC Local Area Network Program-Message Manager for TopView diskette shipped in the PC LAN package.

- **Insert the diskette you labeled “Message Manager for TopView” in drive B.** At this time, insert the diskette you labeled **Message Manager for TopView** in drive B.
 - **Insert the PC LAN Program diskette in drive A.** This diskette is needed to install some network files on to the Message Manager for TopView diskette.
5. The PC LAN Program files for your configuration are installed on the diskette labeled **DOS/PC LAN**. The IBM PC Message Manager for TopView is installed on the diskette labeled **Message Manager for TopView**. You will need this diskette if you are going to use TopView with the PC LAN Program.

The DOS prompt is displayed when the PC LAN Programs are installed. Your installed PC LAN Program diskette contains all the information that you need to start DOS and the PC LAN Program.

Note: When you installed the PC LAN Program, you also installed a CONFIG.SYS file. If you already had a CONFIG.SYS file, the PC LAN Program alters your file to include additional commands needed by the PC LAN. The CONFIG.SYS file contains special commands that help tailor the way that you want to use your computer’s memory with DOS.

You can change the CONFIG.SYS file by editing the file with the text editor you normally use (such as EDLIN). See “Edit CONFIG.SYS Using EDLIN” on page 9-4. The CONFIG.SYS commands you can use in a CONFIG.SYS file are shown in Chapter 9. Also, if you want to make changes for DOS,

you can use the CONFIG.SYS commands shown in the *DOS Reference*.

6. Remove the diskettes from the drives.
7. Put the DOS/PC LAN diskette into drive A.
8. Restart DOS by pressing Ctrl-Alt-Del.

IMPORTANT: From now on, you should always use the DOS/PC LAN diskette that you just made to start DOS and the PC LAN Program on your computer.

9. Go to the next chapter to continue.

Installing for a 3-1/2" Drive

Follow these instructions to install the PC LAN Program for a 3-1/2" drive:

1. Check to be sure that:
 - You are using a computer with at least one 3-1/2" drive to install the PC LAN Program.

Note: This section assumes that your 3-1/2" drive is drive A, although you can install from any drive.

 - You have 3-1/2" copies of your PC LAN program diskette and your copy of DOS that you created using the DOS Select command.
 - You have one blank 3-1/2" diskette.
 - Your DOS diskette is in drive A.
 - You have started DOS and are at the DOS prompt and your current drive is A.
2. Follow these steps to format the blank 3-1/2" diskette:

- a. Enter the following command:

```
format a: /s
```

- b. When prompted to insert the diskette for drive A, insert the blank diskette in the drive.
- c. Follow the instructions on your screen. When formatting is complete, remove the diskette.
- d. Write the following name on the formatted diskette's label (use a felt-tip pen):

```
DOS/PC LAN
```

Your diskette is formatted and contains the DOS system. You should be at the DOS prompt.

3. If you are using a **U. S. English keyboard**, **skip this step. Go to step 4.** Otherwise, do one of the following to copy the keyboard configuration for your country.

- If your computer only has one 3-1/2" drive:

- a. Make sure your copy of the DOS diskette is in the drive and enter the following command:

```
copy autoexec.bat b:
```

When prompted to insert the diskette for drive B, insert the DOS/PC LAN diskette you created earlier.

- b. Make sure that your copy of the DOS diskette is in the drive and enter the following command:

```
copy config.sys b:
```

When prompted to insert the diskette for drive B, insert the DOS/PC LAN diskette again.

- c. You can now copy the keyboard routine for your particular country. Consult your *Disk Operating System Reference* for details on how to do this.
 - d. Go to step 4.
 - If your computer has two 3-1/2" drives:
 - a. Insert your copy of the DOS diskette in drive B.
 - b. Type **B:** to make B your current drive.
 - c. Insert the diskette that you labeled **DOS/PC LAN** in drive A.
 - d. Enter the command:

```
copy autoexec.bat a:
```
 - e. Enter the command:

```
copy config.sys a:
```
 - f. Type **A:** and press Enter to make A your current drive.
 - g. Consult your *Disk Operating System Reference* for details on how to copy the keyboard routine for your country.
4. Do one of the following:
- If your computer only has one 3-1/2" drive,
 - a. Insert your copy of the PC LAN Program diskette in drive A.
 - b. Enter the following command:

```
install b: 35 tvmsg
```

IMPORTANT: You'll be prompted to switch your diskettes. When you're prompted to:

- **Insert the diskette for drive B,** insert the diskette you labeled **DOS/PC LAN.**
 - **Insert the diskette for drive A,** insert your copy of the PC LAN Program diskette.
- If your computer has two 3-1/2" drives:
 - a. Insert your copy of the PC LAN Program diskette in drive A.
 - b. Insert the diskette that you labeled DOS/PC LAN in drive B.
 - c. Enter the following command:

```
install b: 35 tvmsg
```
 - d. Follow the instructions on the screen to install the program.

5. The PC LAN Program files for your configuration are installed on the diskette labeled **DOS/PC LAN**. The IBM PC Message Manager for TopView is also installed on this diskette.

When you install the PC LAN Program, a subdirectory named **NETWORK** is created on your diskette. The PC LAN Program files for your configuration are installed in the subdirectory. **NETWORK** is a subdirectory of the root directory.

The DOS prompt is displayed when the PC LAN Programs are installed. Your installed PC LAN Program diskette contains all the

information that you need to start DOS and the PC LAN Program.

Note: When you installed the PC LAN Program, you also installed a CONFIG.SYS file. If you already had a CONFIG.SYS file, the PC LAN Program alters your file to include additional commands needed by the PC LAN and the IBM PC Message Manager for TopView. The CONFIG.SYS file contains special commands that help tailor the way that you want to use your computer's memory with DOS.

You can change the CONFIG.SYS file by editing the file with the text editor you normally use (such as EDLIN). See "Edit CONFIG.SYS Using EDLIN" on page 9-4. Some of the CONFIG.SYS commands you can use in a CONFIG.SYS file are shown in Chapter 9. Also, if you want to make changes for DOS, you can use the CONFIG.SYS commands shown in the *DOS Reference*.

6. Remove the diskettes from the drives.
7. Put the **DOS/PC LAN** diskette into drive A.
8. Restart DOS by pressing Ctrl-Alt-Del.

IMPORTANT: From now on, you should always use the **DOS/PC LAN** diskette that you just made to start DOS and the PC LAN Program on your computer.

9. Go to the next chapter to continue.

Installing for a Fixed Disk

The PC LAN Program Installation Aid Diskette

You can use the PC LAN Program Installation Aid diskette that you received with this manual to easily install the PC LAN Program on your fixed disk (drive C).

Note: If you plan to have one of the following sets of programs on your computer, see Chapter 10, “Managing the Server Computer.”

- Multiple versions of DOS
- Both the PC LAN Program and the PC Network Program
- Multiple versions of the PC LAN Program

The PC LAN Program Installation Aid has menus that guide you through installing your programs and applications. The PC LAN Program Installation Aid organizes your fixed disk so that you can efficiently install your programs and applications. After you've installed your programs and applications, you'll be able to efficiently share them with the network, if you want to. Of course, you'll be able to use your programs and applications as you normally do.

You can use the PC LAN Program Installation Aid to do the following:

- Install multiple versions of DOS on your fixed disk drive C so that other network users can use it
- Install multiple versions of the PC LAN Program on your fixed disk drive C so that other network users can use it

- Install applications on your fixed disk drive C so that you can efficiently share the applications across the network
- Make private subdirectories for each computer user who wants to use your applications
- Print a list of what you need to share with the network
- Print a list of what others need to use from your computer.

The PC LAN Program Installation Aid is also used to install additional users and install additional applications.

If you want to know more about the disk organization that the PC LAN Program Installation Aid creates, see Chapter 10, "Managing the Server Computer."

Before you start using the PC LAN Program Installation Aid, you should make a copy of the diskette and set up the copy with DOS.

Copying the PC LAN Program Installation Aid Diskette

The PC LAN Program Installation Aid that you received with your manual is on diskette. You have to use a computer that has at least one 5-1/4" or one 3-1/2" diskette drive to copy the diskette.

You should make a DISKCOPY of your PC LAN Program Installation Aid diskette before you start using the PC LAN Program Installation Aid. Label your copy of the PC LAN Program Installation Aid **PC LAN Program Installation Aid (Copy)**.

You should use the copy to do your work and keep the original diskette in a safe place.

Use the DOS.DISKCOPY command to make the copy. If you are not familiar with the DOS DISKCOPY procedure, follow the instructions in “Copying Your Diskettes” in the *DOS User’s Guide* to make a copy of your PC LAN Program Installation Aid diskette.

Note: Due to the variety of possible drive configurations, be sure that you have read “Drive Considerations” in the *DOS User’s Guide* before you install your PC LAN Program.

The PC LAN Program Installation Aid

Before you start the PC LAN Program Installation Aid, find the *PC LAN Program Installation Aid Quick Reference Card* at the back of this manual. The card lists IBM applications that you can use with the PC LAN Program and gives you the following information about the applications:

- Tells you the instructions you should use to install the application
- Tells you if the application can be shared across the network
- Tells you if data for the application can be shared across the network
- Tells you how to start the application.

If you’re planning to install IBM applications, you should refer to this card before you install them. If you want to install an application that is not on the card, refer to the application’s reference manual to see if this application can be installed by the PC LAN Program Installation Aid. If so, follow the instructions in the application’s manual. If not, refer to Chapter 10, “Managing the Server Computer” for guidelines about installing the application.

Starting the PC LAN Program Installation Aid

Follow these steps to start the PC LAN Program Installation Aid:

1. Ask each person who plans to use the network what level of DOS and what version of the appropriate network program they use.

Also ask them whether they plan to use a local copy of these programs (from their own machine), or whether they want to use the Server's copy. If they are going to use a local copy, find out what directory the program is in. Write this information down; you will need it when you use the PC LAN Program Installation Aid to install or update remote users.

2. If you are going to install the version of DOS that you will use, insert the DOS diskette into drive A.
3. Switch on your computer, or if your computer is already on, press Ctrl-Alt-Del.

If you are not installing DOS for your own use, reset the system as you normally do.

DOS starts and you're prompted to enter the date and the time.

4. Enter the date and the time.

The DOS prompt A> is displayed.

5. Remove your DOS diskette from drive A.
6. Set the current drive to be the drive that you will use to run the PC LAN Installation Aid. Insert your diskette labeled **PC LAN Program Installation Aid (Copy)** into the current drive.

7. Type G and press Enter.

When the main menu is displayed, choose "1) Install DOS, IBM PC LAN Program, IBM PC Network Program and other IBM applications".

Note: If you are going to install the version of DOS you are going to use, it must be installed from the current drive.

8. Press Enter to continue starting the PC LAN Program Installation Aid.

The PC LAN Program Installation Aid can also be started if you are currently using DOS as follows:

1. Set the current drive to be the drive that you will use to run the PC LAN Installation Aid.
2. Insert your diskette labeled **PC LAN Program Installation Aid (Copy)** in the current drive.
3. Type G and press Enter.

When the main menu is displayed, choose "1) Install DOS, IBM PC LAN Program, IBM PC Network Program and other IBM applications".

Note: If you are going to install the version of DOS you are going to use, it must be installed from the current drive.

4. Press Enter to continue starting the PC LAN Program Installation Aid.

Using the PC LAN Program Installation Aid

The menus tell you what you need to do to install the PC LAN Program and your IBM applications on your computer. *If this is the first time that you've used the aid, you should look at the Help information (press the F1 "HELP" key) for each menu.*

Use the PC LAN Program Installation Aid to do the following tasks:

1. Install multiple versions of DOS in directories on your fixed disk so that other network users can use it. Even if you don't think that you're going to be sharing your disks and directories, install DOS. You may need it later.

A menu of all applications that can be installed by the PC LAN Program Installation Aid is displayed; DOS is highlighted.

- Press Enter.

A menu is displayed with the following questions.

- What version of DOS are you installing?

If you are installing DOS 3.20, type 3.20.

- Is DOS on 5.25" diskettes? (Y/N)

If you are installing from 3-1/2" diskettes, type N.

- From which diskette drive are you installing DOS?

Type the appropriate drive letter; for example, A.

- Will you be using this version of DOS?
(Y/N)
- After you answer these questions, you will be guided through installing DOS.

During the installation process, you will be told the directory that DOS was installed in (for example, DOS 3.30 will be installed in C:\APPS\DOS3_30). Write this information down; you will need it when you install or update remote users.

Note: If you answered “Y” to the last question, consider the following:

- A PATH statement has been added to either your AUTOUSER.BAT or AUTOEXEC.BAT file to reference this version of DOS. When you finish using the PC LAN Program Installation Aid, you should edit the modified file and remove your old PATH and APPEND statements.
 - You must install this version of DOS from the current drive. This is necessary for DOS to correctly transfer the system to your fixed disk.
- When installation is complete, press Enter to return to the application selection screen. Check the list you made earlier to see if you need to install any other version of DOS. If so, repeat step 1. If not, go to step 2.
2. Install the PC LAN Program or PC Network Program.

Check the list you made earlier to determine which versions of the network programs to install. The PC LAN Program Installation Aid, Version 1.2, will guide you through installing these programs. The application

selection screen lists the network programs immediately following DOS.

- The menu screen will ask you the following questions:
 - What version of either the PC Network or PC LAN Program are you installing?

If you are installing the PC LAN, Program Version 1.20, type 1.20.
 - Is the network on 5-1/4" diskettes? (Y/N)

If you are installing from 3-1/2" diskettes, type N
 - From which diskette drive are you installing the network?

Type the appropriate drive letter; for example, A
 - Will you be using this version of the network? (Y/N)
- After you answer these questions, you will be guided through installing this version of the network program. During installation you will be told the directory name where the network program is installed. Write this information down; you will need it when you install or update remote users.

When you install the PC LAN Program or the PC Network Program, different subdirectories are created on your fixed disk C. For example, the PC LAN Program is installed in the C:\APPS\NET1_20 directory. If you answered "Y" to the last question, this version is also installed in the

C:\NETWORK directory. The C:\NETWORK directory is for the private use of the server user (user who shares devices) and the C:\APPS\NET1_20 directory is for the remote users.

If you install the PC Network Program 1.00, it is installed in the C:\APPS\NET1_00 directory. It is also optionally installed in the C:\NETWORK directory.

The subdirectory named APPS will be used for your applications.

- When the installation is complete, press Enter to return to the application selection screen. Check the list you made earlier to see if you need to install any other versions of the network programs. If so, repeat step 2. If not, go to step 3.

Note: If you need to install multiple versions of either the PC LAN Program or the PC Network Program, the following message will display when you are installing the second version: "This application has been installed previously in this session". Ignore this message and proceed with the installation.

Note: When you installed the PC LAN Program, you also installed a CONFIG.SYS file.

If you already had a CONFIG.SYS file, a CONFIG.NIA file was created which contains the required DOS commands. You should add these files to your CONFIG.SYS file. The CONFIG.SYS file contains special commands that help tailor the way that you want to use your computer's memory with DOS.

If you normally use a CONFIG.SYS file, you may want to edit the CONFIG.SYS file that

the PC LAN Program installed, so that the new file includes the additional information from the CONFIG.SYS file that you normally use.

For example, you may need the files created or used by the DOS SELECT command (CONFIG.SYS, AUTOEXEC.BAT, and KEYBxx.COM files). You would need to edit the new CONFIG.SYS file to include the COUNTRY = xxx command. You would also need to copy the AUTOEXEC.BAT file created by the DOS SELECT command and needed KEYBxx.COM files.

You can change the CONFIG.SYS file by editing the file with the text editor you normally use (such as EDLIN). See "Edit CONFIG.SYS Using EDLIN" on page 9-4. Some of the CONFIG.SYS commands you can use in a CONFIG.SYS file are shown in Chapter 9. Also, if you want to make changes for DOS, you can use the CONFIG.SYS commands shown in Chapter 4, "Configuring Your System" in the *DOS Reference*.

3. If you need to install applications on your fixed disk, do that next. Refer to the *PC LAN Program Installation Aid Quick Reference* card that you received with this manual for information about your IBM applications before you install them. Other applications in addition to those on the *PC LAN Program Installation Aid Quick Reference* card can be installed by the Installation Aid. Refer to each application's user guide for information. The Installation Aid installs all applications with read-only access rights.

Note: The installation aid overlays previous versions of the same application. If you install two versions of the same application, only the last version installed will be on the disk.

4. If you're planning to let other network users use your applications, name the users next.
 - Return to the main menu and choose "2) Name or update the network users who can use your applications".
 - If you have previously used either the PC Network Installation Aid 1.00 or the PC LAN Installation Aid 1.10 and you have *not* used the PC LAN Installation Aid 1.12, you must update all current users in addition to adding new users. This is because each remote user currently has a NETPATH.BAT that generates the following PATH statement (assuming that you have selected k as the drive others should use to access your applications):

```
PATH=\BATCH;k:\BATCH;k:\TEXT;k:\DOS;  
k:\NETWORK;\
```

However, since any version of DOS could be in k:\DOS and any version of the network programs could be in k:\NETWORK, this PATH statement will not be valid for all users.

- The following questions will be asked about each user:
 - What is the path to this user's version of DOS?

For example, type k:\DOS3 _20 .
 - What is the path to this user's version of either the PC Network or PC LAN Program?

For example, type c:\PCLAN.
- Consult the list you made earlier which records where each remote user wishes to

access DOS and the network program. You can respond with either a directory on your machine (for example, k:\DOS3 _10) or a directory on the remote user's machine (for example, c:\DOS). The user's NETPATH.BAT will be updated to reflect your response. Performance will be better if remote users access these programs from their own machines.

5. If you have previously used either the PC Network Installation Aid 1.00 or the PC LAN Installation Aid 1.10 and you have *not* used the PC LAN Installation Aid 1.12, you must now reinstall all applications which were previously installed with either the PC Network Program Installation Aid or an earlier version of the PC LAN Program Installation Aid. The applications must be reinstalled because the .BAT files created to install the applications contain direct references to the C:\APPS\DOS directory and this directory will no longer be used by all users.
6. When you're finished installing applications and naming users, print the information about your applications and the information for network users.

Make the information for network users available to the network users.

IMPORTANT: Read the information that you print. You may need to do some additional steps to finish installing some of your applications. The information tells you what you need to do. You can install all your applications before doing these additional instructions from the printout.

7. Remove the diskette from the drive.
8. Press Ctrl-Alt-Del to restart DOS.

When you see the DOS prompt, you're ready to start the network.

9. If you have previously used either the PC Network Installation Aid 1.00 or the PC LAN Installation Aid 1.10, you have *not* used the PC LAN Installation Aid 1.12, and you just updated ALL remote users, the C:\APPS\DOS and C:\APPS\NETWORK are no longer needed. To delete these directories, make the following entries at the DOS prompt:

```
ATTRIB -R C:\APPS\DOS\*.*
```

```
ATTRIB -R C:\APPS\NETWORK\*.*
```

```
ERASE C:\APPS\DOS\*.*
```

```
ERASE C:\APPS\NETWORK\*.*
```

```
RMDIR C:\APPS\DOS
```

```
RMDIR C:\APPS\NETWORK
```

Adding Additional Users or Applications

Whenever you need to add users or applications you must use the PC LAN Program Installation Aid.

Some applications cannot be installed when the PC LAN Program is active. For example, DOS, PC LAN, and the IBM Personal Computer Assistant Series cannot be installed when the PC LAN program is active.

If the application that you are trying to install indicates that it cannot be installed when the PC LAN program is active, you must first stop the PC LAN Program and reset (Ctrl-Alt-Del) your computer, then start the PC LAN Program Installation Aid.

Note: Notify the network users if you are taking the Network down before starting the PC LAN Program Installation Aid.

You should be at the DOS prompt; follow these steps to start the PC LAN Program Installation Aid:

1. Set the current drive to the drive you will use to run the PC LAN Installation Aid.
2. Insert your diskette labeled **PC LAN Program Installation Aid (Copy)** in the current drive.
3. Type G and press Enter.

The logo screen is displayed.

4. Press Enter to continue starting the PC LAN Program Installation Aid.
5. Choose the task you want to do from the menu.
6. When you finish using the PC LAN Program Installation Aid follow the instructions on the menu to return to DOS.

Notes:

1. You may want to install other applications similar to the way that the Installation Aid installs IBM applications. For instructions on installing these applications in the \APPS subdirectory, see "Installing Other Applications" in Chapter 10.
2. If your application has an NIA profile on its diskette, select "OTHER APPLICATION NOT LISTED BELOW" from the Installation Aids Application Selection Menu.

Chapter 3. How the Menus Work

Introduction	3-3
What Are Menus?	3-3
Parts of the Menu	3-9
Fields	3-10
Message Line	3-10
Status Line	3-11
Keys	3-12
You are Ready to Use the Menu	3-17

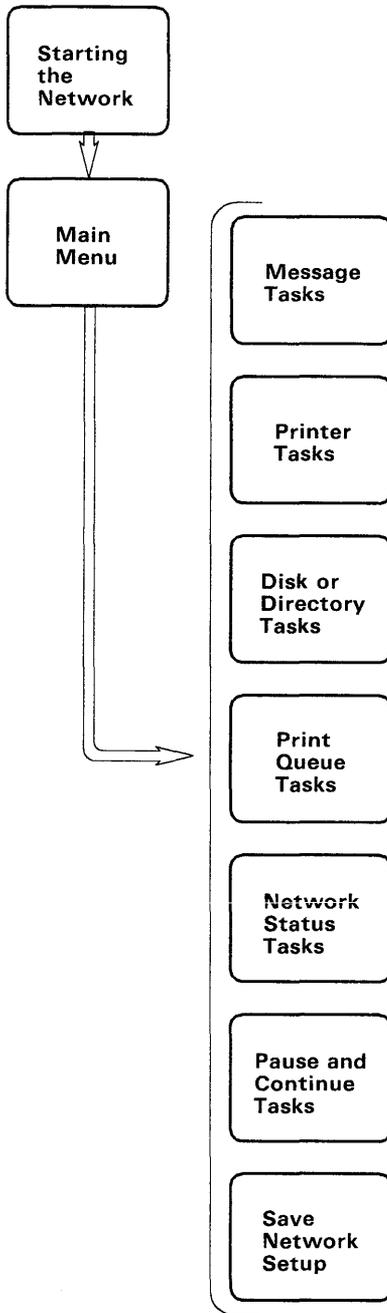
Introduction

After reading this chapter on how the PC LAN Program menus work, continue with setting up and starting the PC LAN Program in Chapter 4.

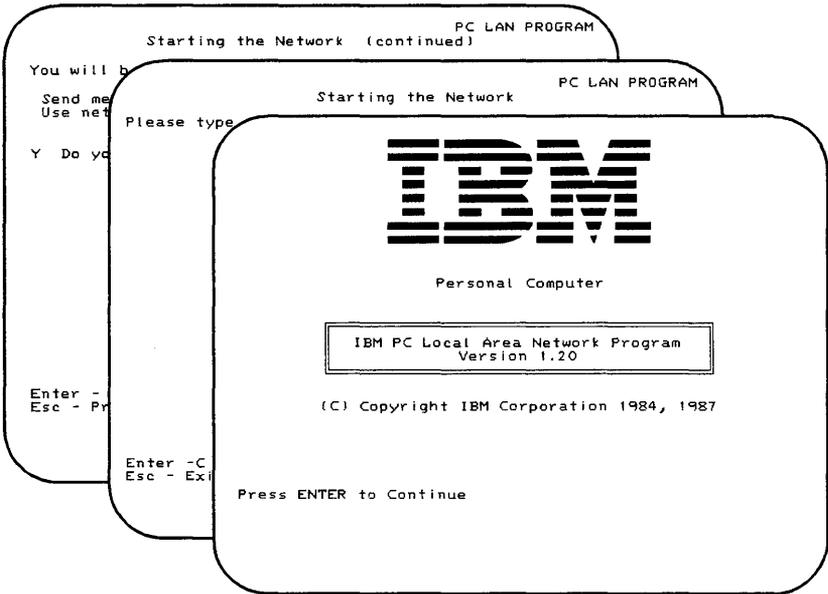
Menus let you use the PC LAN Program without having to enter commands. The menus guide you through each task you want to do and keep you from getting lost. You can get help to complete each menu just by pressing a key.

What Are Menus?

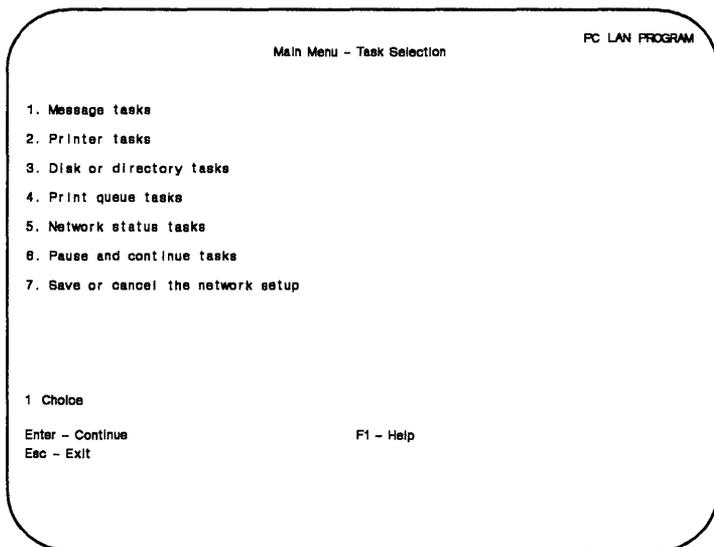
The PC LAN menus are like a path through all the tasks you can do with the PC LAN Program. The menus lead you through starting the program to the “Main Menu.” The Main Menu is the starting point for all of the tasks you can do. You choose the kind of task you want to do from the Main Menu and more menus step you through the tasks.



The first menus lead you through starting the PC LAN Program. You see these menus only when you start the program.

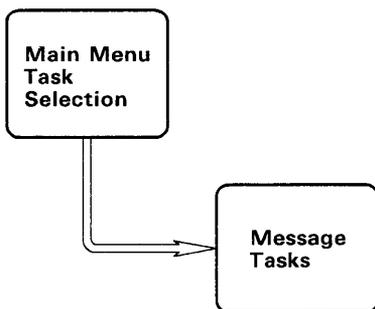


The next menu you see is the “Main Menu—Task Selection” menu. The Main Menu lets you choose the kinds of tasks you want to do.

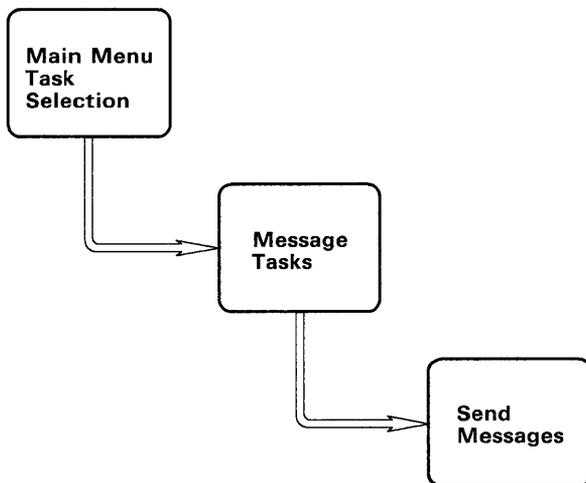


You may not have all the choices shown above, depending upon how you installed and started the PC LAN Program. But that's okay; the menus all work the same way.

For example, suppose you want to send a message to another computer. You would start at the Main Menu and choose “Message Tasks.”



The “Message Tasks” menu shows you different tasks you may want to do with messages. You would choose “Send Messages.”



On the "Send Messages" menu, you would type and enter the name of the computer you're sending the message to and the message. When you enter this information, you send the message. You see a message at the bottom of the menu telling you that you've finished the task.

Send Messages PC LAN PROGRAM

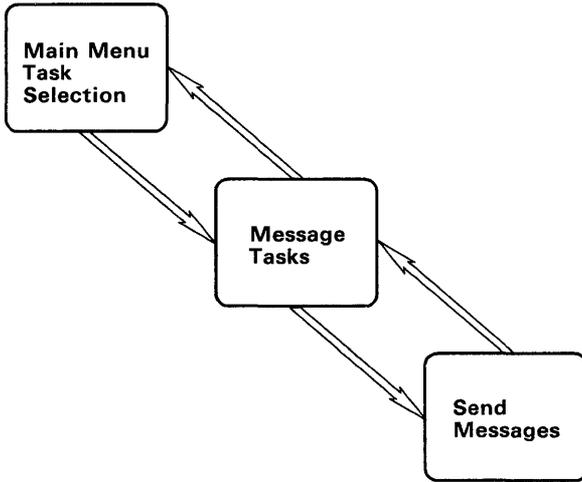
Send the message to : (* for all computers)
Type message below :

▼

Ctrl-Enter - Send message	Esc - Previous menu or Exit		
Tab - Cursor to next field	Ctrl-PgDn - Erase message		
F1 HELP/MORE KEYS	F2 COMMAND LINE	F3 ADJUST PARAGRAPH	F4 VIEW MESSAGES
F5 RETRIEVE FIRST	F6 RETRIEVE NEXT	F7 SAVE MESSAGES	

Characters Free 1599

When you finish the task, you can go back to the Main Menu and do something else.



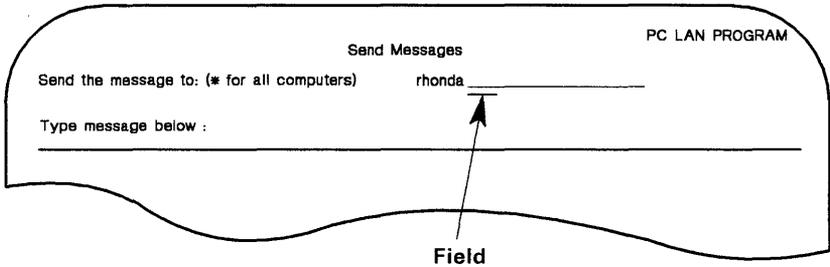
The menus allow you to do tasks and make sure you do each task in the right order. You can't get lost because you always can get back to the Main Menu by pressing Ctrl-Home.

Parts of the Menus

Let's look at the menus a little more closely.

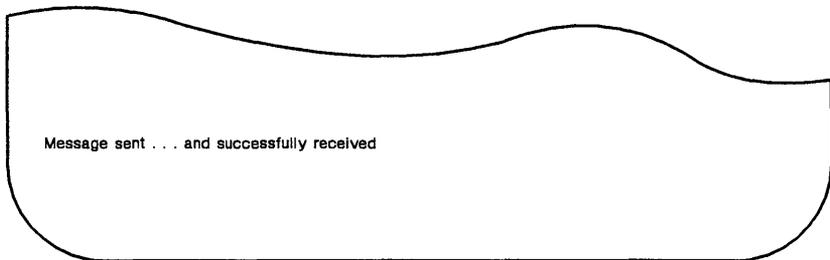
Fields

You'll notice that the cursor is always at an underlined area of the menu. (If you have a color display, the area is highlighted.) This area is called a *field*. Some menus have more than one field. The field is where you fill in information. If you enter invalid characters in a field, you'll hear a *beep*, and see an error message.

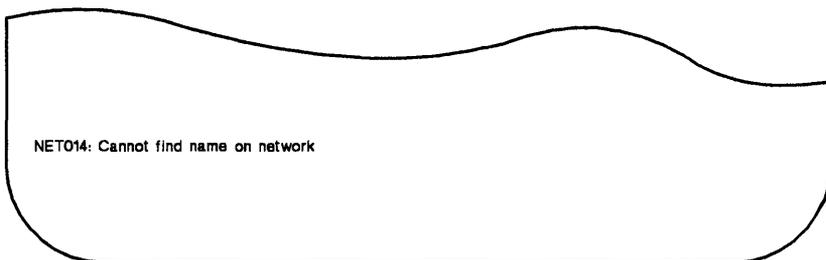


Message Line

When you complete a task, you'll see a message at the bottom of your menu on the *message line* telling you that you've done the task.



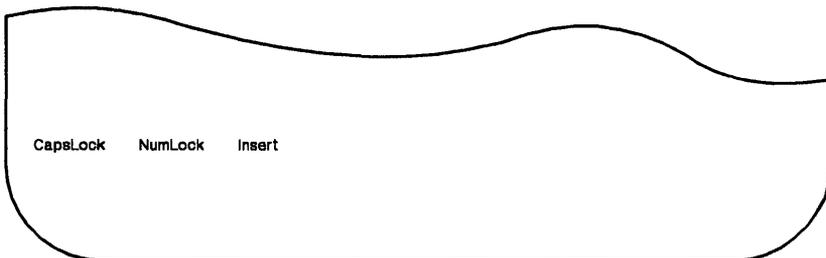
If you make a mistake on a menu or if an error occurs, you'll see a message on the message line telling you what the problem is. You can look up the message in Appendix A, "Messages" on page A-1 to find out how to fix the problem.



on network

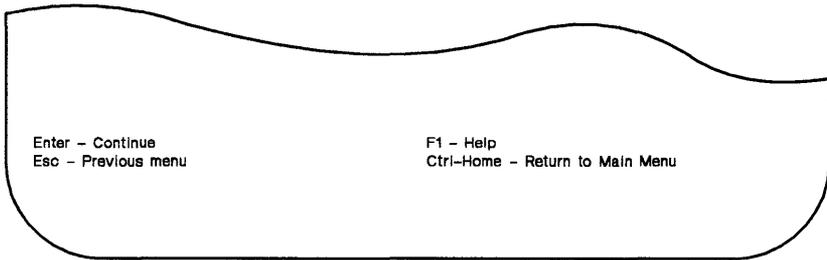
Status Line

If you are using Insert, Num-Lock, or Caps-Lock, the *status line* at the bottom of your menu will let you know which ones you're using.



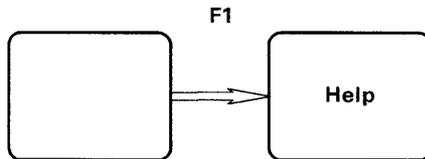
Keys

At the bottom of each menu, you'll see a list of keys most often used with the menus.



F1

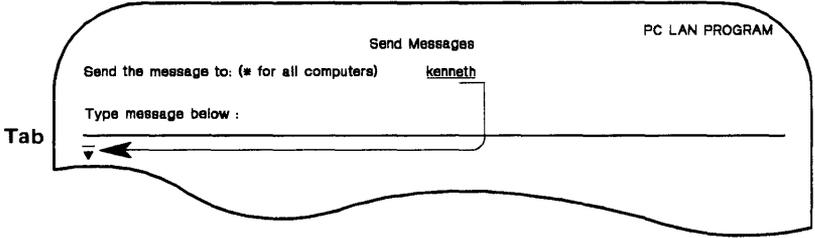
Press **F1** to get Help to complete a menu.



IMPORTANT: Every menu has a Help screen. If you don't understand a menu, press **F1** for Help.

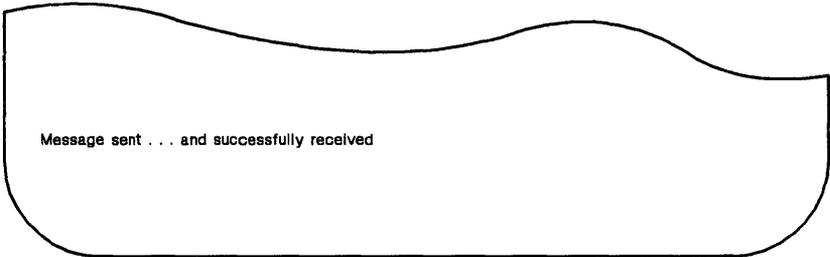
Tab

If a menu has more than one field, press **Tab** to move the cursor from one field to the next field.



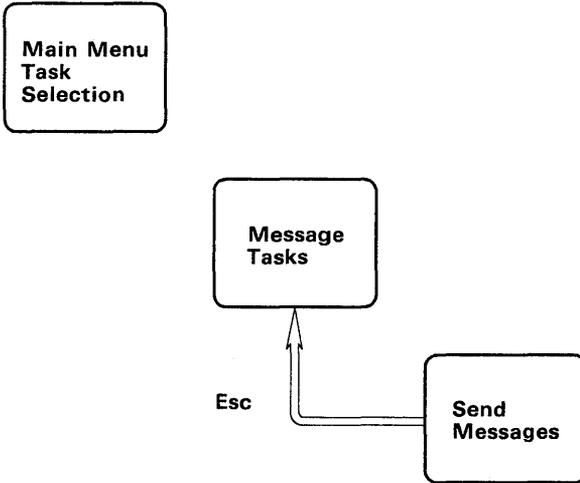
Enter

Press **Enter** to enter the information you have on the menu and continue the task. If you finish the task, you'll see a message at the bottom of your menu after you press Enter.



Esc

Press **Esc** to get out of the menu you're in and go back to the previous menu.



Ctrl-Break

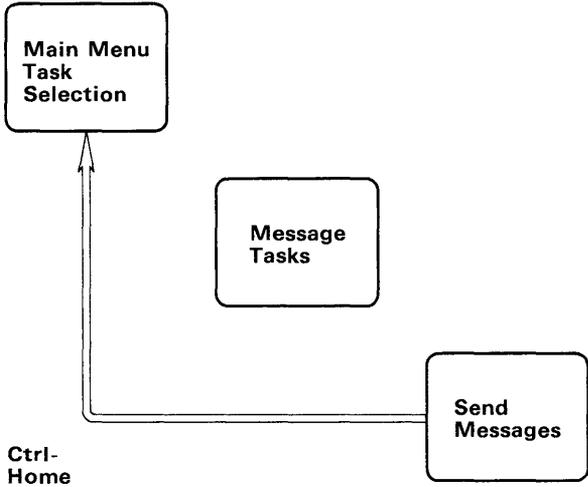
Press **Ctrl-Break** and then **Enter** to get out of the PC LAN Program menus and return to DOS. When you press **Ctrl-Break**, you see the following prompt:

Are you sure you want to exit the menus? (Y/N) Y

Press **Enter**, with the Y in the (Y/N) field, to exit the menus and return to the DOS prompt. If you change your mind, type **N** and press **Enter**.

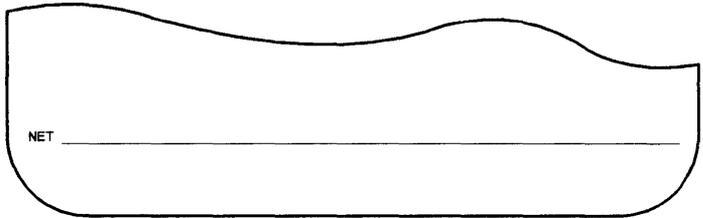
Ctrl-Home

Press **Ctrl-Home** to get out of the menu you're in and go back to the Main Menu.



F2

If you want to enter a PC LAN Program command instead of completing the menus, you can press **F2** to display a command line. You can type the PC LAN Program command on the line and press Enter to enter the command. Then press Esc to return to the menu.



F3

If you have a color monitor, you can press F3 on the Main Menu to change the menu colors. You can choose to see the menus with a blue background or with a black background.

Editing Keys

You can also use the editing keys that you normally use. Some of the keys you may want to use are:

←	Moves the cursor left
→	Moves the cursor right
End	Moves the cursor to the end of a field
Home	Moves the cursor to the beginning of a field
Ctrl-End	Erases characters to the right of the cursor
← (Backspace)	Moves the cursor to the left and deletes characters to the left of the cursor
Ins (Insert)	Allows you to insert characters without erasing anything (you'll see "Insert" at the bottom of the menu)
Del (Delete)	Deletes characters

You are Ready to Use the Menus

Now that you know how the menus work, you are ready to start. Go to Chapter 4, “Setting Up and Using the PC LAN Program” to begin using the PC LAN Program.

Chapter 4. Setting Up and Using the PC LAN Program

Introduction	4-3
Getting Help	4-3
Starting the PC LAN Program	4-4
Setting Up the PC LAN Program for Your Computer	4-11
Setting Up to Use Network Devices	4-12
Setting Up to Share Devices With the Network	4-15
Saving Your Network Setup	4-18
Starting Applications While Your Computer is on the Network	4-21
Using Applications While Your Computer is on the Network	4-23
Sharing and Using Applications .	4-24
Sharing and Using Data for Applications	4-24
Printing Files from Applications .	4-25
Sharing and Using Private Directories	4-25
Interrupting Applications and Programs To Do Network Tasks	4-26
Interrupting Your Application With the Network Request Keys	4-26
Interrupting Your Application Without the Network Request Keys	4-27
Doing Other Network Tasks	4-28

Introduction

This chapter tells you how to use the PC LAN Program through the menus. You'll learn how to:

- Start the PC LAN Program
- Select a PC LAN configuration
- Save your setup
- Start applications while your computer is on the network
- Use applications while your computer is on the network
- Interrupt your applications to do PC LAN Program tasks
- Do other network tasks.

Getting Help

Remember, if you don't understand a menu, press F1 to display help for the menu. You should press F1 if you don't understand something on the menu. You'll see a Help screen that explains the menu.

Now let's start the PC LAN Program.

Starting the PC LAN Program

Starting the PC LAN Program means that you are putting a copy of the PC LAN Program in your computer's memory. You're also selecting a PC LAN configuration by giving the PC LAN Program some information about how you plan to use the network.

Follow these steps to start the program:

1. You should have already installed the PC LAN Program and any applications that you want to share with the network. If you have not installed the program, go to Chapter 2, "Installing Your Programs" for instructions.

2. Follow *one* of these steps:

- If you are using the PC LAN Program from a high capacity drive or a 3-1/2" diskette:

- a. Insert your DOS/PC LAN diskette in drive A and start DOS.

The DOS prompt should be displayed.

- b. Enter the following command:

```
cd \network
```

You are in the network subdirectory of your diskette.

- c. Go on to step 3.

- If you are using the PC LAN Program from a 5-1/4" diskette:

- a. Insert your DOS/PC LAN diskette in drive A and start DOS.

The DOS prompt should be displayed.

- b. Go on to step 3.
- If you are using the PC LAN Program from a fixed disk:
 - a. Start DOS from your fixed disk.

The DOS prompt should be displayed.

- b. Enter the following command:

```
cd \network
```

You are in the network subdirectory of your fixed disk. The DOS prompt should be displayed.

3. If you are using an IBM *Portable* Personal Computer display or any other composite monitor, you need to change the mode of your display so that you'll be able to see the menus. If you don't have an IBM *Portable* or composite monitor continue with step 4.

To change the mode of your display Enter:

```
MODE BW80
```

4. Enter the following at the DOS prompt:

```
NET
```

The PC LAN Program logo screen is displayed.

5. Press Enter to display the "Starting the Network" menu. Your cursor is at the first field.

The "Starting the PC LAN Program" menus prompt you to give the PC LAN Program

information about how you plan to use the network.

6. Fill in the fields on the menu. (Be sure that you press Enter each time you fill in a field.)

The following list gives you some hints about how to fill in the fields.

Note: You'll only see the fields or prompts that you need for tasks that you wish to do on your computer, so don't worry if you don't see all of the fields we've listed.

Please type in a network name for your computer

This is the name by which your computer is known on the network. You can use any name, but you can't use any spaces, blanks, or more than 15 characters in the name.

Enter your first name and last initial, without any spaces. For example, if your first name and last initial is Rich A., type RICHA for your computer's network name and press Enter.

7. Do you want to:

Share your printer? disk? directories?

This asks if you want to be able to share your devices or directories on the network. Other network computers can use the devices that you choose to share.

If you don't want to share these devices, or if you want to use TopView, enter N and go to step 8.

If you Enter Y, you will be starting the **Server** configuration of the PC LAN Program. Your computer should have a fixed

disk. The PC LAN Program should be installed on your fixed disk. If you enter **Y**, go to step 10.

8. Do you want to:

Add usernames, forward messages, and use the network request key?

“Add usernames” means that you want to be able to receive messages for more names, in addition to the name you give your computer.

“Forward messages” means that you want to be able to transfer messages sent to your computer on to another computer.

“Use the network request key” means that you want to be able to use Ctrl-Alt-Break (the network request keys) to go from your application to the PC LAN Program menus.

If you don't want to do these tasks, or if you plan to use TopView, enter **N** and go to step 9.

If you Enter **Y**, you will be starting the **Messenger** configuration of the PC LAN Program. If you enter **Y** go to step 10.

9. Do you want to:

Receive and save messages?

This asks if you want to be able to receive messages at your computer. You can receive messages on your screen or save messages in a file. (You won't be able to use the network request keys.)

If you don't want to receive and save messages, or if you plan to use TopView, enter **N**. You will be starting the **Redirector**

configuration of the PC LAN Program. Go to step 10.

If you Enter **Y**, you will be starting the **Receiver** configuration of the PC LAN Program. Continue with step 10.

10. Do you want to:

Change defaults for starting?

Lets you change some of the preset values that are used to start the PC LAN Program. Change the defaults if you want to do any of the following while you're on the network:

- Receive messages for more than one other name
- Use more than five devices at the same time
- Share more than five devices at the same time
- Have more than 1600 characters of space to store waiting messages in (approximately five small messages)
- Have more than 2048 characters of space to store information that's being sent to a printer that you share on the network.

Hint: Enter **N** if you don't want to change the defaults. Enter **Y** if you want to change any of the defaults. If you chose "N" for "Change defaults for starting the network?," go to step 11. If you chose "Y" for "Change defaults for starting the network?," you'll see the "Change Defaults for Starting the Network" menu next.

Note: Depending on your previous selections, you may not have all of the items shown in the following list on your menu.

Selecting values greater than the defaults may cause the PC LAN Program and DOS to use more memory than the minimum requirements stated above.

The following list gives you some hints about how to fill in the fields on the menu.

5 Number of devices to be used? (1 - 32)

This is the total number of network disks, directories, and printers that you think you're going to use at one time (5 is the default).

Hint: Type a number that's a little larger than the number you really think you need, in case you need to use more devices than you estimated. For example, if you think you're going to use seven devices, type 9 in the field.

1600 Size of buffer for messages
waiting? (256 - 60000 characters)

This is the size of the memory area reserved to receive your messages (1600 is the default). Messages that you receive (but don't log) are stored here until you view them. If you think you're going to receive a lot of messages, you may want to make the area bigger. You can specify the area in characters, such as 60000, or in K-bytes, such as 48K.

Note: A buffer of 1600 characters holds about five small messages.

1 Number of additional names that will
 be receiving messages? (0 - 12)

This is the number of names, in addition to the name you used for your computer, that you want to be able to receive messages for (1 is the default).

Hint: Type a number that's a little larger than the number you really think you need, in case you need to share more devices than you estimated. For example, if you think you're going to share seven devices, type 9 in the field.

2048 Size of buffer for printing?
 (512 - 16384 characters)

This is the size of the memory area that holds information being sent to a printer that you're sharing with the network (2048 is the default). The larger the area, the more efficiently your printer works. The more memory your computer has, the larger you should make the buffer. You can specify the area in characters, such as 16384, or in K-bytes, such as 16K.

11. Next, you'll see the "Starting the Network (continued)" menu. The menu lists how you've chosen to start the network and asks you if this is what you want to do.

The cursor is at the bottom of the menu.

12. Do *one* of the following:

- If you want to change what you've chosen, enter **N** in the field. You'll go back to the first start menu and can change your answers to the questions.
- If you want to be able to do the tasks listed, enter **Y**.

The PC LAN Program starts. You'll see a message telling you that the program is started. While the PC LAN Program starts, you hear your computer beeping.

Note: The PC LAN Program beeps when starting and also beeps for some tasks. The beeps means that the program is working and that you should wait. If you hear more than about 20 beeps (an error occurred), you should restart DOS and the PC LAN Program.

13. The "Main Menu—Task Selection" is displayed.

Note: If you receive a message from another computer after you've started the network and need instructions, see "Receiving Messages" on page 1-27.

Setting Up the PC LAN Program for Your Computer

Just as you have to "set up" your computer before it works, you need to "set up" the PC LAN Program so that the program knows how to operate on your computer.

For example, if you want to use a printer that's on the network, you have to tell the network which printer you want to use. Or if you want to share a directory on your computer with the network, you have to tell the network which directory you want to share.

Everyone on the network may want to set up his computer on the network differently. *You* have to decide how you want to set up your computer. You may want to go to Chapter 5, "Tasks You

Can Do With the PC LAN Program” for more information about network tasks you can do.

These instructions give you guidelines for setting up your computer. You may want to change or add to the tasks that you do.

If you’re going to share devices or directories with the network, follow the instructions in “Setting Up to Share Devices With the Network” on page 4-15. If you’re going to use devices or directories from other computers, follow the instructions in “Setting Up to Use Network Devices.”

Setting Up to Use Network Devices

These instructions give you guidelines about how to set up your computer on the network so that you can use devices and directories that other computers (Server’s) have shared with the network.

If you are going to use network devices, the person who operates the Server computer should give you information about the network devices and how you should use them.

The following steps assume that the Server is ready and has already shared the devices you want to use, and you are starting at the Main Menu.

1. Before you get started setting up your computer, look through the menus to get an idea of the tasks you can do. Try choosing each of the tasks on the Main Menu and looking at the menus for each of the tasks. (Don’t worry, you can’t “break” anything!) Press Ctrl-Home to return to the Main Menu.

When you’re ready, go on to the next step.

2. If you want to use a network disk or directory, choose “Disk or directory tasks” and press Enter.

You’ll see the “Disk or Directory Tasks” menu.

Choose the tasks you want to do and follow the menus to select the task and fill in the necessary fields.

IMPORTANT: If you’re using applications from another computer, you should have received a list from the person at the other computer. The list tells you what directories to use.

3. Repeat step 2 to use each network disk or directory that you need.

When you’ve finished setting up the network disks and directories that you want to use, press Ctrl-Home to go back to the Main Menu.

4. If you’re going to use a network printer, choose “Printer tasks” and press Enter.

You’ll see the “Printer Tasks” menu.

Choose the tasks you want to do and follow the menus to complete the task.

IMPORTANT: Use LPT1 if you want the network printer as your first printer. If you have a printer attached to your computer and you want to use it, pause using the network device. You’ll be able to use your printer. When you’re finished using your printer, continue using network devices. You’ll be able to use the network printer again. If you already have a printer that you’re using as your first printer (LPT1), and you do not want to “pause using network device,” use

the network printer as your second printer (LPT2).

5. Repeat step 4 to use each network printer that you need.

When you've finished using the printers that you want to use, press Ctrl-Home to go back to the Main Menu.

6. If you want to save (log) your messages in a file, choose "Message tasks" and press Enter.

You'll see the "Message Tasks" menu.

Choose the tasks you want to do and follow the menus to complete the task.

Hint: You should save your messages unless you're expecting an important message from someone.

You may want to save your messages on the network disk or directory that you're using. You can use your initials and an extension of LOG as the name of the file in which you want to save your messages. For example, if your initials are MRD, you could use MRD.LOG as the name of the file in which to save your messages.

If you want to use a diskette, make sure that the diskette that you want to save messages on does not have a write-protect tab. The diskette must also be in your specified drive ready to log messages.

Note: Do not save messages on your PC LAN Program diskette.

7. When you've finished telling the program where you want to log your messages, press Ctrl-Home to go back to the Main Menu.
8. You may also want to do the following tasks:

- Add names for which you can receive messages (Choose “Message tasks”)
- Change the mode of a printer (Choose “Printer tasks”)

You should use the menus to do any other tasks you want to do to set up your computer on the network.

9. When you’ve finished setting up your computer on the network and if you are not the Server, go to “Saving Your Network Setup” on page 4-18 to continue. If you are starting a Server computer, continue with the next section.

Setting Up to Share Devices With the Network

These instructions give you guidelines about how to set up your computer on the network so that you can share your devices and directories with other computers.

1. Start at the Main Menu.
2. If you want to share your disks or directories with the network, choose “Disk or directory tasks” and press Enter.

You’ll see the “Disk or Directory Tasks” menu.

Choose the tasks you want to do and follow the menus to complete the task.

IMPORTANT: If you’ve used the PC LAN Program Installation Aid to install your applications, you should have printed a list of instructions that tell you what directories to share with the network. The instructions also tell each of the other network users what

directories they need to use. Be sure that you've given each of the other users a copy of these instructions.

3. Repeat step 2 to share each disk or directory that you want to make available to the network.

When you've finished sharing your disks and directories, press Ctrl-Home to go back to the Main Menu.

4. If you're going to share a printer with the network, choose "Printer tasks" and press Enter.

You'll see the "Printer Tasks" menu.

Choose the tasks you want to do and follow the menus to complete the task.

5. Repeat step 4 to share each printer that you want to make available to the network.
6. You may not want to print a separator page on each printer that you've shared. The separator pages help you to identify the documents that are printed.

Choose "Start or stop printing a separator page" on the "Print Queue Tasks" menu and press Enter. Follow the menus to stop printing the separator page. The separator page is printed on the first page of each file sent to the network printer.

Hint: Use the filename PQ.SEP as the name of the file that contains your separator page. PQ.SEP is a separator page that's provided for you with the PC LAN Program. Also see "NET SEPARATOR Command" on page 7-58.

When you've finished setting up to share your printers and specifying separator pages for

each printer, press Ctrl-Home to go back to the Main Menu.

7. If you want to save (log) your messages in a file, choose “Message Tasks” and press Enter.

You’ll see the “Message Tasks” menu.

Choose the tasks you want to do and follow the menus to complete the task.

Hint: You should save your messages unless you’re expecting an important message from someone. You can use your initials and an extension of LOG as the name of the file in which you want to save your messages. For example, if your initials are MRD, you could use MRD.LOG as the name of the file in which to save your messages.

When you’ve finished logging your messages, press Ctrl-Home to go back to the Main Menu.

8. You may also want to do the following:
 - Add names for which you can receive messages (Choose “Message tasks”)
 - Change the mode of a printer (“Printer tasks”)

You should use the menus to do any other tasks you want to do to set up your computer on the network.

9. Do *one* of the following:
 - You may want to use devices or directories that other computers have shared with the network. If you do, go to “Setting Up to Use Network Devices” on page 4-12 to continue setting up your computer on the network.

- If you're finished setting up your computer on the network, go to "Saving Your Network Setup" on page 4-18 to continue.

Saving Your Network Setup

If you think that you're going to use the same PC LAN Program setup each day, you can save your setup. You won't have to go through all of the tasks to start and set up your computer on the network each day. Instead, each time you start your computer, the PC LAN Program is automatically started, and your computer is set up on the network again.

You only have to save your setup once. The saved setup is put on your disk so that you can use it again and again. If you save your setup, you won't see the "Starting the PC LAN Program" menus when you start the program because the program is automatically started for you.

When you save your network setup the first time, the PC LAN Program creates an AUTOEXEC.BAT file. If you already have an AUTOEXEC.BAT file, it is renamed to AUTOUSER.BAT before the new AUTOEXEC.BAT file is created. If you did not have an AUTOEXEC.BAT file, an AUTOUSER.BAT file is created with only the DATE and TIME commands. The new AUTOEXEC.BAT file contains a special *user area*, the commands to start the PC LAN Program, and an AUTOUSER command.

The new AUTOEXEC.BAT file is created as follows:

```
:*** Network batch file ***
    { user area }
:***
    •
    • { PC LAN commands }
    •
)
AUTOUSER
```

The user area is defined by two lines in the file as follows:

```
:*** Network batch file ***
    { user area }
:***
```

The user area is for commands that must execute before the PC LAN is started. For example, you need to install a different country keyboard routine before the PC LAN Program starts. You would move the KEYBxx command from your AUTOUSER.BAT file (original AUTOEXEC.BAT file) into the user area. Also, if you are a Server computer and you need to print foreign language characters in your separator page, put the DOS command GRAFTABL into the user area.

If you normally use an AUTOEXEC.BAT file, you may want to edit your AUTOUSER.BAT file and the AUTOEXEC.BAT file that the PC LAN Program created.

Only add commands to the AUTOEXEC.BAT file for those programs that must execute before the PC LAN Program starts. Add all other commands to your AUTOUSER.BAT file. If you need to add commands to the AUTOEXEC.BAT file, you must add them between the lines defining the user area of the AUTOEXEC.BAT file that the PC LAN Program created.

Note: The next time you save your PC LAN Program configuration, the area of the AUTOEXEC.BAT file outside of the user area is deleted. The new commands to start your

current PC LAN setup, and the AUTOUSER command, are then added.

You can change the AUTOUSER.BAT and AUTOEXEC.BAT files by editing them with the text editor you normally use (such as EDLIN). Your text editor should preserve or create DOS (ASCII) format files.

Follow these steps to save your setup:

1. Make sure that the DOS/PC LAN Program is in your current (default) drive.

Note: If you are using the DOS/PC LAN Program on diskette, remove the write-protect tab before saving the setup.

2. Choose "Save or cancel the network setup" on the "Main Menu" and press Enter.
3. Choose "Save your network setup" and press Enter.

You'll get a message when your setup is saved.

4. If you're ready to leave the menus and go to DOS, press Ctrl-Break or press Esc until you see the following message:

Are you sure you want to leave the menus? Y

5. Enter **Y**.

The DOS prompt is displayed.

If you need to change your setup, you can cancel the one you've saved. Then you can create a new setup and save it.

If you want to temporarily change your setup, you can make changes while you're using the network and not save the changes. The

changes will be in effect until the next time you restart DOS.

Notes:

1. When you use a "Saved network setup," be sure all the computers that you wish to use have started and have shared all the devices and directories that you wish to use. If the other computers are not started, your saved setup cannot be fully recreated.
2. "Fowarding messages" information is not saved when you save your network setup.

Starting Applications While Your Computer is on the Network

After you've started the PC LAN Program and set up the program, you're ready to start your applications. Just remember that your computer is still on the network.

Note: The following procedure assumes that the applications were installed, by the Server, using the IBM PC LAN Program Installation Aid.

1. You should be at the DOS prompt.

If you're in the Network menus, press Ctrl-Break and Enter to go to the DOS prompt.

If you're using network devices, make the network drive that contains your *private* directory your current (default) drive. Check the instructions you received from the Server, or check with the Server, to see which network drive has your private directory. For example, if your private directory is your

network drive K, your DOS prompt is K> to show that K is your current (default) drive.

If you're sharing your devices with the network, your root directory of drive C should be your current directory (C:\).

2. Enter the following command at the DOS prompt:

```
netpath
```

The NETPATH command is only needed at the beginning of each computer session on the network. It is only necessary to enter the NETPATH command again if the DOS PATH or the APPEND commands are used to change the current path.

After entering the NETPATH command, you can access the **Server's** applications from any DOS current drive. For more information, see NETPATH command in Chapter 10.

Notes:

- a. If the Server did not use the PC LAN Program Installation Aid NETPATH will not work.
 - b. You cannot create or modify files in the Server's applications drive. These are Read-Only files.
3. Enter the following command at the DOS prompt:

```
help
```

"HELP" gives you a list of the installed applications and the commands to start them.

Note: Refer to your application manual for instructions on how to use the application.

If you are using applications from the network, the person who installed the application gave you some information about how to start the applications that are available to you. If the information was not given to you, ask the person who installed the application or is responsible for the Server computer for the information. Use the information to start your applications.

If you installed the applications with the PC LAN Program Installation Aid and are sharing them, you printed some information about how to start the applications. Make sure that this information is available for the network users who plan to use the applications.

Using Applications While Your Computer is on the Network

If you are going to start applications under TopView, you should also read Chapter 11.

Use your applications the same way that you normally do. Your application runs “on top of” the PC LAN Program. The PC LAN Program is still working for you, even though you aren’t aware of it. The following tells you a little about sharing and using applications and data for applications.

Note: If you’re using a color display, some applications may change your display to black and white. Use the following DOS MODE command to change your display back to color:

Sharing and Using Applications

Many applications can be shared across the network. One computer has a copy of the application and shares the application with the network. The other network computers can access the application at the same time, if they want to. This way, each computer doesn't have to have a copy of the application in their computer.

Some applications cannot be shared across the network. Each computer must have its own copy of the application in its computer.

Unless otherwise specified by IBM, IBM Personal Computer program license agreements permit the use of a program on a single machine. The customer is responsible for ensuring that each user on the network is appropriately licensed to use any program shared over the network.

For non-IBM programs, you should consult your license agreement or the vendor of the program to determine what is required for you to share the program over the network.

Sharing and Using Data for Applications

Data files for many applications can also be shared across the network. One computer has the data files for an application in a subdirectory and shares the subdirectory with the network. The other computers can use the directory that contains the data files. Then they can access the data files, if they want to, or create new ones. This way, each computer can have the most

up-to-date copy of the data without keeping copies of everything.

Note: When you are using a shared data file and another user tries to access the same data file, the other user will get an error message (error opening file). Only one user at a time is allowed access to data files.

Printing Files from Applications

Files that you send to a network printer or to a printer that you've shared may not begin printing immediately. The files must have an end-of-spool indicator to be able to start printing. You can press Ctrl-Alt-*(numeric keypad) to send an end-of-spool indicator for a file after you send the file to be printed.

To determine if a Ctrl-Alt-*(numeric keypad) is needed, you should use the Print Queue display to see if your file is in the queue. See the NET PRINT command in Chapter 7 or "Checking or Changing the Print Queue" in Chapter 10.

For example, you may be using an application and send a file to a network printer, or to a printer that you've shared. While you're in the application, press Ctrl-Alt-*(numeric keypad) to send the end-of-spool indicator to the queue.

Wait until your application has sent the entire file to be printed. If the file appears in the print queue with a status of SPOOLING, you need to press the Ctrl-Alt-*(numeric keypad). If you press the Ctrl-Alt-*(numeric keypad) keys too soon, your print file can split into two print files.

Sharing and Using Private Directories

Private directories are separate directories that the person who's sharing applications with the network creates for each of the other network users who are using the applications. The other network users can use their private directories to store personal files in.

Interrupting Applications and Programs To Do Network Tasks

After you've started using your applications, you may need to go back to the PC LAN Program to do a network task. For example, you may need to use a network printer that you didn't use before. Or, you may need to pause sharing a directory with other people on the network so that you can get some important work finished.

The way that you interrupt your application to do a network task depends on whether or not you chose to use the network request keys when you started the network.

Interrupting Your Application With the Network Request Keys

If you are using the network request keys, follow these steps:

1. Press the network request keys (Ctrl-Alt-Break).
2. The "Main Menu—Task Selection" is displayed.

3. Use the menus to do your tasks.
4. Press Ctrl-Break and then Enter to get back to your application.

Note: You may not be able to use the network request keys to go to the PC LAN menus if your application is in a graphics mode. Also, some applications won't accept or allow network request keys in all applications.

Interrupting Your Application Without the Network Request Keys

If you are not using the network request keys, follow these steps:

1. Stop your application and go back to the DOS prompt.
2. Check to be sure the PC LAN Program is in your current drive and that you are at the DOS prompt.
3. Enter the following command:

```
NET
```

4. Press Enter.

The "Main Menu--Task Selection" is displayed.

5. Use the menus to do your tasks.
6. When you finish your tasks, press Esc repeatedly until the following prompt is displayed:

```
Are you sure you want to exit  
the menus? (Y/N) Y
```

7. Press Enter to return to the DOS prompt.
8. Restart your application.

Doing Other Network Tasks

After you have started the PC LAN Program, set the program up, and started using your applications, you'll want to do other tasks on the network. Or you may want to change a task that you've already done.

You should refer to Chapter 5, "Tasks You Can Do With the PC LAN Program" for descriptions of all of the PC LAN tasks you can do. The chapter also tells you why you may want to do the task and the choice you should make on the Main Menu to do the task. You may want to look through the menus as you read Chapter 5. Try choosing the choice on the Main Menu and looking at the menu for each of the tasks. (Don't worry, you can't "break" anything!)

Chapter 5. Tasks You Can Do With the PC LAN Program

Introduction	5-4
Starting the PC LAN Program	5-5
Changing the Defaults When You	
Start the PC LAN Program	5-6
Messages Tasks	5-7
Send Messages	5-7
View Received Messages With the	
Network Request Keys	5-8
View Received Messages Without	
the Network Request Keys	5-10
Start Saving Messages	5-11
Stop Saving Messages	5-12
Start Receiving Messages for	
Another Name	5-13
Stop Receiving Messages for	
Another Name	5-13
Forward Messages to Another	
Computer	5-14
Stop Forwarding Messages to	
Another Computer	5-15
Printer or Print Queue Tasks	5-16
Sharing Your Printer	5-16
Stop Sharing Your Printer	5-17
Use a Network Printer	5-18
Stop Using a Network Printer	5-18
Print a File	5-19
Change the Print Size (Mode) on a	
Network Printer	5-19
Printing a Separator Page	5-20
Stop Printing a Separator Page	5-22
Disk or Directory Tasks	5-23
Share Your Disk or Directory	5-23
Share (Permit) Your Disk or	
Directory Temporarily	5-24
Stop Sharing Your Disk or	
Directory	5-24
Using a Network Disk or Directory	5-25
Stop Using a Network Disk or	
Directory	5-26
Network Status Tasks	5-27
Check or Change Print Queue on	
Your Printer	5-27
Check Print Queue on Another	
Computer	5-28

Display Names That Can Receive Messages At Your Computer . . .	5-28
Display Devices You are Sharing	5-29
Display Network Devices You are Using	5-30
Pause and Continue Tasks	5-31
Pause Using Network Disks and Directories	5-31
Continue Using Network Disks and Directories	5-32
Pause Using Network Printers . .	5-32
Continue Using Network Printers	5-33
Pause Receiving Messages	5-33
Continue Receiving Messages . . .	5-34
Pause Sharing Your Devices	5-34
Continue Sharing Your Devices . .	5-35
Pause Printing Files (on a Printer that You've Shared)	5-36
Continue Printing Files (on a Printer that You've Paused) . . .	5-37
Save or Cancel the Network Setup Tasks	5-37
Save Your Network Setup	5-37
Cancel Your Current Network Setup	5-39
Application and PC LAN Program Tasks	5-40
Install New Applications to Share on The Network	5-40
Do a PC LAN Program Task From an Application	5-40
Return to Your Application from the PC LAN Program	5-41
Network Control Tasks	5-42
Close a File	5-42
Display the Error List	5-42
Display Users and Record Locks for a File	5-43

Introduction

This chapter gives you a short description of the network tasks you may want to do. You can use this chapter as a reference to network tasks.

For each task, you'll see a description of what the task is and why you may want to do the task. You'll also see any special instructions or information you need to do the task.

If you're using menus, you'll see a short list of the menu choices you should make to start the task.

If you're using commands, you'll see the command you should use and where to look up the command if you need more information to use it.

Starting the PC LAN Program

Starting the PC LAN Program means that you are loading a copy of the PC LAN Programs that you want to use into your computer's memory.

You should start the PC LAN Program right after you've started DOS. This way, your computer will be on the network as you do your daily work.

Note: If you've saved the way you started the network from the last time that you used the network, you don't have to start the PC LAN Program again. The program is automatically started for you.

Menus

- If this is the first time that you've started the network, see "Starting the PC LAN Program" on page 4-4 for instructions.
- If you're familiar with the Starting the Network menus, do the following:
 1. Make sure that you've started DOS from the PC LAN diskette or from your fixed disk. If you're using diskettes, your DOS/PC LAN diskette should be in your current drive.
 2. Enter the following command:

```
NET
```

Commands

- Make sure that you've started DOS from the PC LAN diskette or from your fixed disk. If you're using diskettes, your DOS/PC LAN diskette should be in your current drive.
- "NET START Command" on page 7-75.

Changing the Defaults When You Start the PC LAN Program

Changing defaults allows you to tailor the PC LAN Program to your needs.

You should change defaults if you want to:

- Use more than five network devices at one time.
- Change the size of the buffer used for waiting messages; the default size is 1600 characters. (Change only if you are not logging messages to a file.)
- Receive messages for more than one additional name on your computer.
- Share more than five of your devices at one time.
- Change the size of the buffers used for printing (the default size is 2048 characters).
- Change the number of network computers that will be using your devices (the default is 10).
- Use other than 112K-bytes to buffer read data.
- Use extended memory to buffer read data.

Changing the values of the defaults may change the PC LAN Program and DOS memory requirements.

Menus

- If this is the first time that you've started the network, see "Starting the PC LAN Program" on page 4-4 for instructions.
- On the Starting the Network menu, choose Y for "Change defaults for starting."

Commands

- "NET START Command" on page 7-75. Specify values for the *parameters* of the NET START command.

Messages Tasks

Send Messages

This task allows you to send a message to another network computer or to all (broadcast message) the computers on the network.

You can create the send message by:

- Typing up to 1600 characters on the Send Message screen. You can save this message to a file to send later by pressing F7.
- First, creating and saving the message to an ASCII file with a text editor. Then use F5 and F6 on the Send Message screen to retrieve the message.

Messages created by a text editor can not be more than 1600 characters long and should not contain imbedded control characters, including TAB. Each message in the file must be separated by a line containing four asterisks (****). (The asterisks must start in the first column).

- Transferring a received message from the View Message screen to the Send message menu.

If you insert characters in a message, some of the message may go past the right margin of your screen. To correct the margin, move the cursor to the first line of your message and press the F3 (adjust paragraph) key.

Note: The longest broadcast message you can send is 128 characters. A carriage return is counted as one character in the message.

Menus

- Main Menu - Message tasks
- Message Tasks menu - Send Messages.

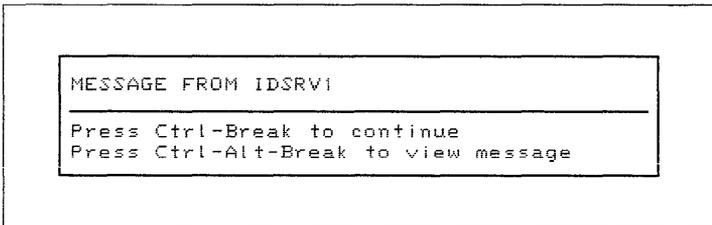
Type the name of the other network computer you want to send the message to, or type an asterisk (*) as the name you want to send the message to for a *broadcast message*.

Commands

- “NET SEND Command” on page 7-55.

View Received Messages With the Network Request Keys

If you are not saving messages and you chose to use the network request keys when you started the PC LAN Program, you'll get a message like this on your screen when you receive a message:



You can do one of the following:

- Press Ctrl-Break to erase the message on your screen and go back to your work. The message is put in a waiting area for you. You can use the menus to look at the message later.
- Press Ctrl-Alt-Break (the network request keys) to go to the menus and view the message.

You should view your waiting messages frequently so that you don't run out of room for messages. When you're finished looking at messages, you can press Esc to go back to your work.

Note: If you don't want to be interrupted when you receive a message, you should save your messages in a file.

You can use the menus to view the saved (logged) messages. You can also view the saved messages by using the DOS TYPE command to type the contents of your log file to your screen.

You can view your saved messages whenever you want to.

Menus

- Main Menu - Message tasks
- Message Tasks menu - View messages.

On the View Messages menu, you'll see a list of keys at the bottom of the screen. Some of the function keys available on this menu are not displayed. Press F1 to see the description of these keys. If you *are not* logging messages, press F3 to see messages that are waiting for you to view. If you *are* logging messages, press one of the following keys:

- F5 to view the first message (the oldest) message in your log file.
- F6 to view the next message that you've received in your log file. Press F6 again to continue seeing messages from the log file.
- Ctrl-F6 to view the next unseen message from the log file.

You can send a received message to another computer by transferring the message to the Send Menu (Ctrl-F4). On the Send Menu, you can edit and send the message to another computer.

If you want to store a message that you received on your screen in your log file, press F7.

You must have specified a log file before you can save messages in a log file. To specify a log file from the view screen, press F2 and enter the following commands:

```
log \name.log  
log /off
```

The *name.log* is the file name and extension of the log file you want to use. The first command specifies a log file and the second command allows you to still receive messages on your screen. After this command sequence you can save the messages by pressing the F7 key.

View Received Messages Without the Network Request Keys

If you chose *not* to share your devices or use the network request keys when you started the PC LAN Program, your messages are displayed on your screen when you receive them, even if you are in an application. You should refresh your screen to erase the message.

You must refresh your screen through your application. You may need to scroll the information on your display or change screens. If the application allows you to refresh your screen, you won't lose what was on your screen. If you're in DOS and you receive a message, press Enter.

Note: If you don't want to be interrupted when you receive a message or if the application that you are using cannot refresh the screen, you should save your messages in a file. If you chose

to save messages in a log file, your messages are saved in the log file.

You can view the logged messages by using the DOS TYPE command to type the contents of your log file to your screen.

Start Saving Messages

This task allows you to tell the PC LAN Program that you want to put your incoming messages in a file (to view later) or on a DOS device, such as a printer.

You may want to send your messages to a file or a printer so that you're not interrupted each time you receive a message. You can then look at the saved messages whenever you want to.

If you are not using the network request keys (Ctrl-Alt-Break), you should save your messages in a file so that your application won't be interrupted by messages you receive.

If you want to save messages in a log file, you must specify a log file to use. You may want to save messages to a file on your own machine or to a file on a network disk that you are using. If you are logging messages to a file on a diskette, be sure that the diskette *does not* have a write-protect tab on it, and make sure the diskette is in the drive specified. This diskette must always stay in that drive because you never know when a message will be sent to you.

Menus

- Main Menu - Message tasks
- Message Tasks menu - Start or stop saving messages - Start saving messages.

Specify a filename or DOS device as the device you want to log messages to (if the file doesn't exist, the file is created for you).

Do not save messages to a printer on another computer, or to your printer if it is shared with others on the network.

If you want the file to be available to save waiting messages in, but don't want to save your incoming messages in the file, go back to the Start or Stop Saving Messages menu and choose to stop saving messages.

Commands

- “NET LOG Command” on page 7-32 (to start logging messages and name a log file for them)
- NET LOG command again (to stop logging the messages).

Stop Saving Messages

This task allows you to tell the PC LAN Program that you no longer want to save your incoming messages, because you want to display them.

You may want to stop sending your messages to a file if you're expecting an important message and want to see it as soon as it arrives.

You may want to stop sending your messages to the printer if you need to use the printer for something else.

Menus

- Main Menu - Message tasks
- Message Tasks menu - Start or stop saving messages - Stop saving messages.

Commands

- “NET LOG Command” on page 7-32.

Start Receiving Messages for Another Name

This task allows you to add names to your computer for which you can receive messages. The additional names cannot send messages.

You may want to use this task if you need to get messages for people in addition to yourself, or if more than one person is using the same computer. For example, if you are covering for someone who is on vacation, you may want to receive his messages in addition to yours.

Menus

- Main Menu - Message tasks
- Message Tasks - Start or stop receiving messages for another name.

Commands

- “NET NAME Command” on page 7-39

Stop Receiving Messages for Another Name

This task allows you to stop receiving messages for other names.

Note: You can't stop receiving messages for the name you gave your computer.

You may want to use this task if you no longer need to get messages for others.

Menus

- Main Menu - Message tasks
- Message Tasks - Start or stop receiving messages for another name.

Commands

- “NET NAME Command” on page 7-39.

Forward Messages to Another Computer

This task allows you to send to another computer messages that you're receiving at your computer. You can forward messages sent to you or you can forward messages sent to another name on your computer. You can only forward messages once. The computer that receives the forwarded messages can't forward them again.

You may want to forward messages when you don't want to receive them anymore at your computer. Or if you are leaving your office for awhile, you may want to forward your messages while you are gone. The other computer will receive your forwarded messages even if you turn your computer off.

Menus

- Main Menu - Message tasks
- Message Tasks - Start or stop forwarding messages.

Commands

- “NET FORWARD Command” on page 7-28.

Stop Forwarding Messages to Another Computer

This task allows you to stop forwarding messages to another computer. You will start receiving the messages at your computer again.

You may want to stop message forwarding if the computer to which you forwarded the messages is leaving the network or if you need to see the messages again at your computer.

Menus

- Main Menu - Message tasks
- Message Tasks - Start or stop forwarding messages.

Commands

- “NET FORWARD Command” on page 7-28.

Printer or Print Queue Tasks

Sharing Your Printer

You can do this task only if you chose to share devices when you started the PC LAN Program.

This task allows you to share your printer with other network computers. You can share up to three printers.

You should share your printer if you have a printer that other network computers need to use. The PC LAN Program will queue files to be printed on your printers.

Menus

- Main Menu - Printer tasks
- Printer Tasks menu - Start or stop sharing your printer.

Commands

- “NET SHARE Command” on page 7-63.

Stop Sharing Your Printer

You can do this task only if you're sharing the printer with the network.

This task allows you to stop sharing your printer with other network computers. If you want to share the printer again, you have to start sharing the printer again.

You should stop sharing your printer before you switch off your computer. Or you may want to stop sharing your printer if you need to share another device and you're already sharing as many devices as you can.

You should also stop sharing your printer if you no longer want other computers to use it until the next time you start DOS and the PC LAN Program. If files are queued to be printed, the files still print. To stop the files from printing, you have to change the print queue.

Menus

- Check to be sure that no one is using your printer before you stop sharing it.
- Main Menu - Printer tasks
- Printer Tasks menu - Start or stop sharing your printer.

Commands

- Check to be sure that no one is using your printer before you stop sharing it.
- "NET SHARE Command" on page 7-63.

Use a Network Printer

This task allows you to use a network printer that another computer is sharing with the network.

You should use a network printer if you don't have the printer that you need attached to your computer. Your files will be printed on the network printer.

Menus

- Main Menu - Printer tasks
- Printer Tasks menu - Start or stop using a network printer.

Commands

- "NET USE Command" on page 7-93.

Stop Using a Network Printer

This task allows you to stop using a network printer.

You should stop using a network printer if you no longer need the printer, or if you need to use another device and you're already using as many devices as you can.

Menus

- Main Menu - Printer tasks
- Printer Tasks menu - Start or stop using a network printer.

Commands

- "NET USE Command" on page 7-93.

Print a File

Use this task to print a file on a printer that you're sharing with the network, or to print a file on a network printer that you're using.

Menus

- Main Menu - Printer and print queue tasks
- Printer and Print Queue Tasks menu - Print a file on a network printer.

or

- Main Menu - Print Queue tasks
- Print Queue Tasks menu - Print a File on a Network Printer.

Commands

- "NET PRINT Command" on page 7-50.

Change the Print Size (Mode) on a Network Printer

This task allows you to change the type size in which your files are printed. You can change the type size even if the printer is not attached to your computer. The print size is changed only for your files.

You should use this task if you are sending files to a printer and want to be sure that your files are printed in the correct type size.

Menus

- Main Menu - Printer and print queue tasks
- Printer and Print Queue Tasks menu - Change the print size on a network printer.

or

- Main Menu - Print tasks
- Print Tasks menu - Change the print size on a network printer.

Commands

- “MODE Command” on page 8-13.

Printing a Separator Page

You can only do this task if you are a Server sharing a printer with the network.

This task allows you to print the default separator page (file PQ.SEP) or your own separator page between the files printed on your printer. You can use a different separator page for each printer that you are sharing on the PC LAN.

You should use a separator page to help you identify the end of one file and the beginning of the next file. The page also helps you identify the owner of the file.

The PC LAN Program has a standard separator page (default separator page) that you can use. The standard separator page is in a file named PQ.SEP, and is shown with “Using Separator Pages on Shared Printers” on page 10-18. If you are using an IBM printer, use the PQ.SEP separator page file. If you are using a non-IBM-compatible printer, use the PQ.OEM separator page file.

You can also create your own separator pages.

Note: The standard separator page is for the IBM Personal Computer Color Printer. You may need to modify the standard separator page file for other printers. If you need instructions to create or modify a separator page, see “Using Separator Pages on Shared Printers” on page 10-18.

Menus

- Main Menu - Print queue tasks
- Print Queue Tasks menu - Start or stop printing a separator page.

Specify **PQ.SEP** as the separator page file for the default separator page, or specify your file as the separator page file.

Note: You must be at the \NETWORK directory when the default separator page **PQ.SEP** is specified.

Commands

- “NET SEPARATOR Command” on page 7-58.

Stop Printing a Separator Page

You can do this task only if you're sharing the printer with the network.

This task allows you to stop printing a separator page (the default separator page or your own) between files on the network printer.

You should use this task if you no longer need the separator page.

Menus

- Main Menu - Print queue tasks
- Print Queue Tasks menu - Start or stop printing a separator page.

Commands

- "NET SEPARATOR Command" on page 7-58.

Disk or Directory Tasks

Share Your Disk or Directory

This task allows you to share your disks or directories with other network computers. You can share a disk or directory only if you chose to share your devices when you started the PC LAN Program. You can share a fixed disk or a diskette drive.

You should share your disk or directory if you have files on your disk that other network computers need to use.

If you want to share a single file with the network, you must put the file in a directory by itself, then share the directory with the network. You can't share a file by itself; the file must be in a directory.

Follow these steps to share a single file with the network:

1. You should be at the DOS prompt.
2. Make a directory (use the DOS MKDIR Command).
3. Put the file you want to share in the directory that you just made.
4. Use the PC LAN Program to share the directory with the network.

Menus

- Main Menu - Disk or directory tasks
- Disk or directory tasks menu - Start or stop sharing your disk or directory.

Commands

- "NET SHARE Command" on page 7-63.

Share (Permit) Your Disk or Directory Temporarily

You can use this task to temporarily share your disk or directory with the network, *without starting the PC LAN Program in your computer*. When you start the PC LAN Program, you don't have to choose to share your devices when you start it. Computers that want to use your disk or directory must start the PC LAN Program in their computers.

You can *permit* one or all network computers to use your disk or directory. You won't be able to use your computer while your disk or directory is *permitted*.

You may want to use this task if you want to copy a file from someone else's disk or if you want to copy one of your files to their disk.

Menus

- You can't temporarily share your disk to be used with the menus. You must use commands.

Commands

- "PERMIT Command" on page 8-15.

Stop Sharing Your Disk or Directory

This task allows you to stop sharing your disk or directory with the network. If you want to share the disk or directory again, you have to *start sharing the disk or directory* again.

You should stop sharing your disk or directory before you switch off your computer. Or you may want to stop sharing your disk if you need to share another device and you're already sharing as many devices as you can.

You should also stop sharing your disk or directory if you no longer want other computers to use it until the next time you start DOS and the PC LAN Program. If other computers are using the disk (or directories on the disk), the computers lose access to it and receive error messages.

Menus

- Check to be sure that no one is using the disk or directory
- Main Menu - Disk or directory tasks
- Disk or directory tasks menu - Start or stop sharing your disk or directory.

Commands

- Check to be sure that no one is using the disk or directory
- “NET SHARE Command” on page 7-63.

Using a Network Disk or Directory

This task allows you to use a network disk or directory as though it is a fixed disk on your computer.

You should use a network disk or directory if you need to use applications or data files on another computer’s disk, or if you need to use a fixed disk and don’t have a fixed disk on your computer.

Menus

- Main Menu - Disk or directory tasks
- Disk or directory tasks menu - Start or stop using your disk or directory.

Commands

- “NET USE Command” on page 7-93.

Stop Using a Network Disk or Directory

This task allows you to stop using a network disk or directory.

You should stop using a network disk or directory if:

- You no longer need to use it.
- You need to use another disk or directory and don't have enough memory left in your computer to use another one, without deleting (stop using) one.

Menus

- Main Menu - Disk or directory tasks
- Disk or directory tasks menu - Start or stop using your disk or directory.

Commands

- "NET USE Command" on page 7-93.

Network Status Tasks

Check or Change Print Queue on Your Printer

You can do this task only if you're sharing your printer with the network.

This task allows you to change the way in which files are printed on your printer. You can change the print queue only if you are sharing the printer. If you're using a network printer, you can only check the print queue.

You should use this task whenever you need to change the order in which files will be printed or to delete files from the print queue.

Note: The size of the files shown in the print queue may be one character smaller than the size of the file sent to the queue. The size doesn't include the end-of-file character from the file.

Menus

- Main Menu - Print Queue tasks
- Print Queue Tasks menu - Check or change the print queue.

Commands

- "NET PRINT Command" on page 7-50 to display the print queue
- Use the menus to change the queue.

Note: You cannot change the queue with NET PRINT. You must use the menus to change the queue.

Check Print Queue on Another Computer

This task allows you to see where your files are in the print queue for a network printer. If you're sharing the printer, you'll see a list of all the files to be printed on your printer. If you're using a printer, you'll see only your files and their positions in the print queue.

Note: The size of the files shown in the print queue may be one character smaller than the size of the file sent to the queue. The size doesn't include the end-of-file character from the file.

Menus

- Main Menu - Printer and print queue tasks
- Printer and Print Queue Tasks menu - Check print queue on another printer.

or

- Main Menu - Print Queue tasks
- Print Queue Tasks menu - Check print queue on another computer.

Commands

- "NET PRINT Command" on page 7-50.

Display Names That Can Receive Messages At Your Computer

This task lets you display a list containing the name of your computer and any names for which you are receiving messages. If you are forwarding messages for any of the names on your computer, the name of the computer you are forwarding messages to is also displayed.

You may want to display names on your computer if you've forgotten the name you gave your computer, or if you've forgotten who you're receiving messages for.

Menus

- Main Menu - Network status tasks menu
- Network status tasks menu - Display names that can receive messages at your computer.

Commands

- "NET NAME Command" on page 7-39.

Display Devices You are Sharing

This task lets you display a list of the network names and DOS names for devices that you've shared with the network, and the names of the computers that are using each device.

You may want to display the devices you're sharing if you've forgotten the name you gave a device, or if you need to know who is using your devices.

Menus

- Main Menu - Network status tasks menu
- Network status tasks menu - Display devices you are sharing.

Commands

- "NET SHARE Command" on page 7-63.

Display Network Devices You are Using

This task lets you display a list of the network names and DOS names for devices that you're using from the network.

You may want to display the devices you're using if you've forgotten the name you gave a device that you're using, or if you've forgotten which computer the device belongs to.

Menus

- Main Menu - Network status tasks menu
- Network status tasks menu - Display devices you are using.

Commands

- "NET USE Command" on page 7-93.

Pause and Continue Tasks

This task allows you to temporarily change the way you're using the network without erasing your task. Pause allows you to temporarily stop something; continue allows you to start again, the same way as before you paused.

Pause Using Network Disks and Directories

This task allows you to temporarily stop using network disks and directories.

You may want to pause using network devices if the network device is taking the place of a device that you have and you want to use your own device again. For example, suppose you have two diskette drives, A and B, and you are using a network directory as your drive B, and you want to do a DISKCOPY. You could pause using network devices so that your drive B is available to you again. You can do the DISKCOPY, then continue using network devices.

Menus

- Main Menu - Pause and continue tasks
- Pause and Continue Tasks menu - Pause or continue using network disks and directories.

Commands

- "NET PAUSE Command" on page 7-43.

Continue Using Network Disks and Directories

This task allows you to continue using network disks and directories. The same network devices are available to you that you were using before you paused using.

Menus

- Main Menu - Pause and continue tasks
- Pause and Continue Tasks menu - Pause or continue using network disks and directories.

Commands

- “NET CONTINUE Command” on page 7-14.

Pause Using Network Printers

This task allows you to temporarily stop using network printers. If you are using the Server configuration and pause using network printers, printing files from the print queue for your printer also pauses.

You may want to pause using network printers if the network printer is taking the place of a local printer that you have, and you want to use your local printer again.

Menus

- Main Menu - Pause and continue tasks
- Pause and Continue Tasks menu - Pause or continue using network printers.

Commands

- “NET PAUSE Command” on page 7-43.

Continue Using Network Printers

This task allows you to continue using network printers. The same network printers are available to you that you were using before you paused using. If you are using the Server configuration, files in your print queue also continue printing.

Menus

- Main Menu - Pause and continue tasks
- Pause and Continue Tasks menu - Pause or continue using network printers.

Commands

- “NET CONTINUE Command” on page 7-14.

Pause Receiving Messages

This task allows you to temporarily stop receiving messages. You won't receive messages on your screen, in a log file, or on a printer. When you want to receive messages again, you can continue receiving messages.

Menus

- Main Menu - Pause and continue tasks
- Pause and Continue Tasks menu - Pause or continue receiving messages.

Commands

- “NET PAUSE Command” on page 7-43.

Continue Receiving Messages

This task allows you to continue receiving messages. The messages are sent to the same device that you were receiving them on when you paused receiving messages.

Menus

- Main Menu - Pause and continue tasks
- Pause and Continue Tasks menu - Pause or continue receiving messages.

Commands

- “NET CONTINUE Command” on page 7-14.

Pause Sharing Your Devices

This task allows you to temporarily stop sharing network disks, directories, and printers. If you pause sharing, receiving messages also pauses.

You no longer are sharing your disks and directories so other computers can no longer access your disks and directories. You no longer are sharing your printers so other computers can no longer send files to the print queue. However, the files that are in the print queue continue to be printed. If you try to send files to your printer, you should pause printing on the printer *before* you send files to the printer. If you don't pause printing and you send a file to the printer, errors may occur.

You may want to pause sharing network devices if you need to have the device back temporarily for your exclusive use. For example, suppose you are sharing a data directory and other computers are accessing it. You have some important updates to make to a file in the directory. You can pause sharing the directory so that you can make the updates, then continue sharing the

directory so that it's available to the network again.

Only pause sharing when it is very important to do so. Other computers using your shared devices will get errors while you have sharing paused.

Menus

- Check to be sure that no one is using your disk, directory, or printer *before* you pause it
- Main Menu - Pause and continue tasks
- Pause and Continue Tasks menu - Pause or continue sharing network devices.

Commands

- Check to be sure that no one is using your disk, directory, or printer *before* you pause it
- "NET PAUSE Command" on page 7-43.

Continue Sharing Your Devices

This task allows you to continue sharing your network disks, directories, and printers. The same devices that you were sharing before you paused sharing are shared with the network again.

Only the computer that paused sharing the devices can continue using them.

Menus

- Main Menu - Pause and continue tasks
- Pause and Continue Tasks menu - Pause or continue sharing network devices.

Commands

- "NET CONTINUE Command" on page 7-14.

Pause Printing Files (on a Printer that You've Shared)

This task allows you to temporarily stop printing files on a network printer that you've shared. The files that are in the queue for that printer stay in the queue. If you only pause printing files (you don't pause sharing), the other computers can still send files to the queue for the printer. You may want to pause printing because:

- You've shared several printers and you want a different printer to print while you service the first printer
- You want the printer back for your use only.

Note: If you want the printer back, you should pause using a network printer.

If you are sharing more than one printer and you pause sharing the printer that's currently printing, the next printer that you've shared becomes active. For example, suppose you've shared your LPT1 and your LPT2. Some of the files in your print queue are for LPT1 and some are for LPT2. Currently, the file being printed is for LPT1. If you pause printing on LPT1, the file being printed on LPT1 stops. LPT2 becomes the active printer, and the first file for LPT2 starts printing.

Note: If a file is printing when you pause printing, the file is cancelled and put into the queue, ready to print again from the beginning.

Menus

- Main Menu - Pause and continue tasks
- Pause and Continue Tasks menu - Pause or continue printing files.

Commands

- “NET PAUSE Command” on page 7-43.

Continue Printing Files (on a Printer that You've Paused)

This task allows you to restart printing for files on a network printer that you've paused. The files that are in the queue for that printer begin printing again.

Only the computer that paused printing can continue printing.

Menus

- Main Menu - Pause and continue tasks
- Pause and Continue Tasks menu - Pause or continue printing files.

Commands

- “NET CONTINUE Command” on page 7-14.

Save or Cancel the Network Setup Tasks

Save Your Network Setup

This task allows you to save the way you're using the network. The next time you start DOS and the network, you'll be using the network the same way you were using it the last time.

You should save your network setup if you're planning to use the network about the same way every day. You won't have to go through all of the tasks to set up your computer for the network. Of course, you can still make changes to the way you are using the network.

This task also allows you to change a setup that you've already saved. Your new setup replaces your existing saved setup. You should change your setup if you need to use the network differently the next time you start the PC LAN Program. The next time you start the PC LAN Program your new setup is used.

Note: If you want to change your starting configuration (Server, Messenger, Receiver, or Redirector), first cancel the network setup, then do a system reset (Ctrl-Alt-Del). Start the network the new way, then save the new network setup.

Menus

- If this is the first time that you've saved the network, see "Saving Your Network Setup" on page 4-18 for instructions. If you're familiar with saving the network, do the following:
- Main Menu - Save or cancel the network setup
- Save or cancel the network setup menu - Save the network setup.

Commands

- You must create an AUTOEXEC.BAT file and place the commands you used to start and set up your computer for the network in the file. See "Automatic Program Execution" in the *DOS Reference* for more information about creating and using AUTOEXEC.BAT files.

Notes:

1. You may want to use menus to save your network setup, then edit the AUTOEXEC.BAT file that is created for you.
2. The NET FORWARD Command is not saved.

Cancel Your Current Network Setup

This task lets you cancel (delete) the setup that you've saved. You should cancel your network setup if you want to change the way you start the PC LAN Program. For example, if you decide that you're not using the network request keys and decide that you want to use them now, you'll need to change the way you start the program.

Note: When you erase the AUTOEXEC.BAT file, you will also lose any commands in the user area. These commands are not automatically moved back to the AUTOUSER.BAT file before the AUTOEXEC.BAT file is erased. You must edit the AUTOUSER.BAT file and insert the files in order to save them.

Menus

- Check to be sure that you have an AUTOEXEC.BAT file *and* an AUTOUSER.BAT file in the root directory
- Main Menu - Save or cancel the network setup
- Save or cancel the network setup menu - Cancel the network setup.

Commands

- Make sure you are at the DOS prompt and that the PC LAN Program is in your current drive.

- Type the following:

```
del autoexec.bat
```

- Press Enter.
- Type the following:

```
rename autouser.bat autoexec.bat
```

(You may get a message telling you that you don't have an AUTOUSER.BAT file. Ignore the message.)

Your network setup is deleted.

Application and PC LAN Program Tasks

Install New Applications to Share on The Network

You can install new applications that you want to share on the network by using the PC LAN Program Installation Aid. See "The PC LAN Program Installation Aid" on page 2-23 for more information about using the PC LAN Program Installation Aid.

Do a PC LAN Program Task From an Application

You can only do a network task from an application if you chose to share devices or if you chose to use the network request keys

(Ctrl-Alt-Break) when you started the PC LAN Program.

You can use this task to do a network task while you're using an application.

You may want to do this task if you're using an application and have forgotten to use a network device that you need. For example, if you want to print a file on a network printer but have forgotten to use the printer, you can go to the network, use the printer, then return to your application.

Follow these steps:

1. Press Ctrl-Alt-Break.
2. If you want to do the task from the menus, choose the task and follow the menus.
3. If you want to do the task with a network command, press F2 to display the command line at the bottom of the menu. Enter the command.
4. To return to your application, press Ctrl-Break, then press Enter.

Return to Your Application from the PC LAN Program

You can only do a network task from an application if you chose to share devices or if you chose to use the network request keys when you started the PC LAN Program.

You can use this task if you're in the PC LAN Program menus and you want to get back to your application again.

To return to your application, press Ctrl-Break, then press Enter.

Network Control Tasks

Close a File

You can only do this task if you're sharing devices with the network.

This task allows you to close a file that is open. The file may be on a disk or a directory that you've shared.

You should close a file only when an application or program has opened a file and failed to close and terminate it. If you don't close the file, other applications can't open it. See Chapter 10, "Managing the Server Computer" for more information about when to close files.

Menus

- You can't close a file with menus. You have to use commands.

Commands

- "NET FILE Command" on page 7-24.

Display the Error List

You can only do this task if you're sharing devices with the network or if you have requested the network request keys (Ctrl-Alt-Break).

This task allows you to list the errors that occurred when other computers incorrectly used a network device on your computer.

You should do this task if you are sharing your devices and directories on the network and are responsible for correcting errors that occur while your devices and directories are shared. See Chapter 10, “Managing the Server Computer” for more information about when to display the error list.

Menus

- You can’t display the error list with menus. You have to use commands.

Commands

- “NET ERROR Command” on page 7-20.

Display Users and Record Locks for a File

You can do this task only if you’re sharing devices with the network. You can display users and locks for all of your files even if you haven’t shared the disk or directory that contains the files.

This task allows you to see a list of the computers that are using a file that’s on a disk or directory that you’ve shared. The list also shows you the number of record locks for the file.

You should do this task whenever you’ve shared a disk or directory and need to know if you can close a file. If you close a file that other computers are using, the other computers receive errors and can no longer use the file. See Chapter 10, “Managing the Server Computer” on page 10-1 for more information about when to display the error list.

Menus

- You can't display users and record locks with menus. You have to use commands.

Commands

- "NET FILE Command" on page 7-24.

Chapter 6. Getting Started with Commands

Introduction	6-3
Choosing a PC LAN Program	
Configuration	6-5
Server Configuration	6-6
Messenger Configuration	6-7
Receiver Configuration	6-9
Redirector Configuration	6-10
Starting the Network With Commands	6-11
Setting Up Your Computer for Use on the Network	6-13
The CONFIG.SYS File	6-16
Saving Your Network Setup	6-17
Starting Your Applications While Your Computer is on the Network	6-17
Using Your Applications While Your Computer is on the Network	6-18
Printing Files from Applications .	6-20
Interrupting Your Applications to Use the Network	6-21
Doing Network Tasks With Commands	6-22
Doing Network Commands with Batch Files	6-24

Introduction

The PC LAN Program Commands are similar to DOS commands. The commands let you use the PC LAN Program from the DOS prompt. You'll only have to use the menus for a few tasks, instead of for every task.

Use the *PC LAN Program Quick Reference Card* as a quick reference aid to the PC LAN commands.

This chapter tells you:

- How to choose the PC LAN Program configuration you want to use
- How to use the commands to start the PC LAN Program
- How to use the commands to set up the PC LAN Program for your computer
- How to use a AUTOEXEC.BAT file to save your PC LAN Program setup
- How to start your applications while your computer is on the network
- How to use your applications while your computer is on the network
- How to interrupt your applications to use the network
- How to use the commands to do network tasks
- How to do network commands with batch files.

Some of the tasks you may want to do require that you use the menus. These tasks are:

- Sending a message longer than 128 characters
- Viewing a waiting message (if you are using the network request keys)
- Viewing a logged message (you can also use the DOS TYPE command to view logged messages)
- Checking or changing the print queue
- Saving your network setup.

Before you start using the commands, you need to know a little about the configurations that you can use and the names you must use with the PC LAN Program.

Choosing a PC LAN Program Configuration

You choose the configuration that you want to use when you start the network. Each configuration can do a different amount of tasks on the network. (For example, the Server can do more tasks than the Messenger.)

Each configuration also needs a different amount of memory in your computer. (For example, the Server uses more memory than the Messenger.) So, the configuration that you choose depends on how much memory your computer has and what PC LAN Program tasks you want to do. You must be sure that you have enough memory to use the configuration (with DOS) and your applications and programs.

Note: If you are not sure how much memory your application needs, check the manual that came with the application for the amount.

Server Configuration

Tasks

The Server configuration allows you to do the following:

- Share your disks, directories, and printers
- Transfer messages to other computers
- Receive messages for other names
- Use the network request keys to interrupt your work and use PC LAN
- Save messages in a log file
- Receive messages from other computers
- Use network disks, directories, and printers
- Send messages to other computers.

Memory Requirements

PC LAN Server configuration requires 350K-bytes of resident memory. You must also start the Server from a fixed disk.

Notes:

1. DOS, associated software, and application programs have their own memory requirements. See the appropriate reference manuals.
2. The PC LAN Program will check for at least 18K-bytes of additional memory above its requirements.
3. NET commands issued at the DOS command line are treated as an application and require additional memory.
4. The parameters you choose to enter with the NET START command can change the memory that the Server requires. See the "NET START Command" on page 7-75 for more information. The command parameters

in your CONFIG.SYS file can also change the amount of memory that the Server requires. See Chapter 9, “CONFIG.SYS Commands Used with the PC LAN Program” for more information.

5. If you use the Server configuration, you should also read Chapter 10, “Managing the Server Computer” for more information about operating your computer as a Server.

Messenger Configuration

Tasks

The Messenger configuration allows you to do the following:

- Transfer messages to other computers
- Receive messages for other names
- Use the Network Request Keys to interrupt your work and use PC LAN
- Save messages in a log file
- Receive messages from other computers
- Use network disks, directories, and printers
- Send messages to other computers.

Memory Requirements

PC LAN Messenger configuration requires 160K-bytes of resident memory.

Notes:

1. DOS, associated software, and application programs have their own memory requirements. See the appropriate reference manuals.
2. The PC LAN Program will check for at least 18K-bytes of additional memory above its own requirements.
3. NET commands issued at the DOS command line are treated as an application and require additional memory.
4. The parameters you choose to enter with the NET START command can change the memory that the Messenger requires. See the "NET START Command" on page 7-75 for more information. The command parameters in your CONFIG.SYS file can also change the amount of memory that the Messenger requires. See Chapter 9, "CONFIG.SYS Commands Used with the PC LAN Program" for more information.

Receiver Configuration

Tasks

The Receiver configuration allows you to do the following:

- Save messages in a log file
- Receive messages from other computers
- Use network disks, directories, and printers
- Send messages to other computers.

Memory Requirements

PC LAN Receiver configuration requires 68K-bytes of resident memory.

Notes:

1. DOS, associated software, and application programs have their own memory requirements. See the appropriate reference manuals.
2. The PC LAN Program will check for at least 18K-bytes of additional memory above its own requirements.
3. NET commands issued at the DOS command line are treated as an application and require additional memory.

4. The parameters you choose to enter with the NET START command can change the memory that the Receiver requires. See the "NET START Command" on page 7-75 for more information. The command parameters in your CONFIG.SYS file can also change the amount of memory that the Receiver requires. See Chapter 9, "CONFIG.SYS Commands Used with the PC LAN Program" for more information.

Redirector Configuration

Tasks

The Redirector configuration allows you to do the following:

- Use network disks, directories, and printers
- Send messages to other computers.

Note: You must start the Redirector configuration of the PC LAN Program if you plan to use TopView after starting the PC LAN Program.

Memory Requirements

PC LAN Redirector configuration requires 50K-bytes of resident memory.

Notes:

1. DOS, associated software, and application programs have their own memory requirements. See the appropriate reference manuals.
2. The PC LAN Program will check for at least 18K-bytes of additional memory above its own requirements.

3. NET commands issued at the DOS command line are treated as an application and require additional memory.
4. The parameters you choose to enter with the NET START command can change the memory that the Redirector requires. See the “NET START Command” on page 7-75 for more information. The command parameters in your CONFIG.SYS file can also change the amount of memory that the Redirector requires. See Chapter 9, “CONFIG.SYS Commands Used with the PC LAN Program” for more information.

Starting the Network With Commands

You should decide if you want to use the Server, Messenger, Receiver, or Redirector configuration before you start the PC LAN Program. You can see “Choosing a PC LAN Program Configuration” on page 6-5 for more information about the configurations.

Use the NET START command to start the PC LAN Program. See “NET START Command” on page 7-75 for a description of the command.

Remember:

1. You should have already installed the PC LAN Program and any applications that you want to share with the network. If you have not installed the PC LAN Program, go to Chapter 2, “Installing Your Programs” for instructions.
2. Follow *one* of these steps:

- If you are using the PC LAN Program from a high capacity drive or a 3-1/2" diskette drive:
 - a. Insert your DOS/PC LAN diskette in drive A and start DOS.

The DOS prompt should be displayed.

- b. Enter the following command:

```
cd \network
```

You are in the NETWORK subdirectory of your diskette.

- c. Go on the step 3.

- If you are using the PC LAN Program from a 5-1/4" diskette drive:

- a. Insert your DOS/PC LAN diskette in drive A and start DOS.

The DOS prompt should be displayed.

- b. Go on to step 3.

- If you are using the PC LAN Program from a fixed disk,

- a. Start DOS from your fixed disk.

The DOS prompt should be displayed.

- b. Enter the following command:

```
cd \network
```

You are in the NETWORK subdirectory of your fixed disk.

- 3. If you are using an IBM *Portable Personal* Computer display, or any other composite

monitor, you need to change the mode of your display. Enter the following command:

```
MODE BW80
```

You're ready to start the Network with the NET START command.

4. Go to "NET START Command" on page 7-75 for instructions about using the NET START command.

Setting Up Your Computer for Use on the Network

After you start the PC LAN Program, you should "set up" the program so that your computer is operating the way you want it to on the network. For example, if you want to share a disk, directory, or printer with other network computers, you should use the NET SHARE command to share the device. Other computers that want to use your device can't use it until you share it.

You may need to do the following tasks to set up your computer for the network:

Server Configuration

- Share a disk, directory, or printer

See "NET SHARE Command" on page 7-63 for a description of the command.

- Use a disk, directory, or printer

See "NET USE Command" on page 7-93 for a description of the command.

- Log (or save) your messages in a file or on a printer

See “NET LOG Command” on page 7-32 for a description of the command.

- Start printing a separator page on a printer you share

See “NET SEPARATOR Command” on page 7-58 for a description of the command.

- Add names for which you can receive messages

See “NET NAME Command” on page 7-39 for a description of the command.

- Change the mode of a printer

See “MODE Command” on page 8-13 for a description of the command.

Note: MODE is a DOS command, so you don't type NET in front of the command when you enter it.

Messenger Configuration

- Use a disk, directory, or printer (NET USE)

See “NET USE Command” on page 7-93 for a description of the command.

- Log (or save) your messages in a file or on a printer (NET LOG)

See “NET LOG Command” on page 7-32 for a description of the command.

- Add names for which you can receive messages (NET NAME)

See “NET NAME Command” on page 7-39 for a description of the command.

- Change the mode of a printer (MODE)

See “MODE Command” on page 8-13 for a description of the command.

Note: MODE is a DOS command, so you don’t type NET in front of the command when you enter it.

Receiver Configuration

- Use a disk, directory, or printer (NET USE)

See “NET USE Command” on page 7-93 for a description of the command.

- Log (or save) your messages in a file or on a printer (NET LOG)

See “NET LOG Command” on page 7-32 for a description of the command.

- Change the mode of a printer (MODE)

See “MODE Command” on page 8-13 for a description of the command.

Note: MODE is a DOS command, so you don’t type NET in front of the command when you enter it.

Redirector Configuration

- Use a disk, directory, or printer (NET USE)

See “NET USE Command” on page 7-93 for a description of the command.

- Change the mode of a printer (MODE)

See “MODE Command” on page 8-13 for a description of the command.

Note: MODE is a DOS command, so you don't type NET in front of the command when you enter it.

The CONFIG.SYS File

If you installed the PC LAN Program, you also installed a CONFIG.SYS file. This file contains configuration information necessary to operate your computer.

You may want to create a CONFIG.SYS file or change the values in your existing CONFIG.SYS file if:

- You are using the Server configuration and expect a large number of other computers to use your fixed disk or directory. You may want to change the BUFFERS, FCBS, and FILES commands in the CONFIG.SYS file. If the NET START /CAC parameter is not equal to 0, specify BUFFERS = 20 in the CONFIG.SYS file. See "NET START Command" on page 7-75 for more information.
- You are using the Server, Messenger, Receiver, or Redirector configuration and need to use more than 14 DOS names for drives (such as A, B, C, ...). You may want to change the LASTDRIVE command in the CONFIG.SYS file.

Note: If you installed the PC LAN Program, the CONFIG.SYS file contains LASTDRIVE = N. Therefore, drives A through N are available for your use.

Changing the values in the CONFIG.SYS file allows you to use your computer's memory more efficiently.

You can change the CONFIG.SYS file by editing the file with the text editor you normally use (such as EDLIN). Some of the CONFIG.SYS commands you can use in a CONFIG.SYS file are shown in Chapter 9, "CONFIG.SYS Commands Used with the PC LAN Program." Also, if you want to make changes for DOS, you can use the CONFIG.SYS commands shown in "Configuring Your System" in the *DOS Reference*.

Saving Your Network Setup

You can enter the network commands that you used to start and set up your computer on the network in an AUTOEXEC.BAT file so that your computer is automatically put on the network each time you start DOS.

See "Saving Your Network Setup" on page 4-18 for more information about saving your setup.

Starting Your Applications While Your Computer is on the Network

After you've started the PC LAN Program and set up the program, you are ready to do your normal work. The PC LAN Program is still running in your computer. You can go back to the PC LAN Program if you need to do a task on the network.

You can use the PC LAN Program Installation Aid to install the PC LAN Program on your fixed disk and install your applications. See "Installing for a Fixed Disk" on page 2-21 for more information about using the aid.

Using Your Applications While Your Computer is on the Network

After you've started and set up the PC LAN Program on your computer, you're ready to start your applications. The network will continue to work while you are using the application or program. For example, if you are using a printer on another computer and you use your application's print function to print a file, the file is printed on the network printer.

Follow these steps.

1. You should have started DOS and the PC LAN Program and set up your computer for use on the network.

Note: This procedure assumes that the applications were installed, by the Server, using the IBM PC LAN Program Installation Aid.

2. You should be at the DOS prompt.

If you're in the Network menus, press Ctrl-Break and Enter to go to the DOS prompt.

3. If you're using network devices, make the network drive that contains your *private* directory your current (default) drive. Check the instructions you received from the Server, or check with the Server, to see which network drive has your private directory. For example, if your private directory is your network drive K, your DOS prompt is K> to show that K is your current (default) drive.

If you're sharing your devices to the network, your root directory of drive C should be your current directory (C:\).

4. Enter the following command at the DOS prompt:

```
netpath
```

Note: If the Server did not use the PC LAN Program Installation Aid, NETPATH will not work.

5. Enter the following command at the DOS prompt:

```
help
```

“HELP” gives you a list of the installed applications and the commands to start them.

Note: Refer to your application manual for more instructions on how to use the application.

If you are using applications from the network, the person who installed the application gave you some information about how to start the applications that are available to you. If the information was not given to you, ask the person who installed the application or is responsible for the Server computer for the information. Use the information to start your applications.

If you installed the applications with the PC LAN Program Installation Aid and are sharing them, you printed some information about how to start the applications. Make sure that this information is available for the network users who plan to use the applications.

6. After you've started your applications, see the following section and "Interrupting Applications and Programs To Do Network Tasks" on page 4-26 for instructions about using the PC LAN Program while your applications are running.

Note: If you're using a color display, some applications may change your display to black and white. Use the following DOS MODE command to change your display back to color:

```
MODE C080
```

Printing Files from Applications

Files that you send to a network printer or to a printer that you've shared may not begin printing immediately. The files must have an end-of-spool indicator to be able to start printing. You can press Ctrl-Alt-*(numeric keypad) to send an end-of-spool indicator for a file after you send the file to be printed.

To determine if a Ctrl-Alt-*(numeric keypad) is needed, you should use the Print Queue display to see if your file is in the queue. See the NET PRINT Command in Chapter 7 or "Checking or Changing the Print Queue" in Chapter 10.

For example, you may be using an application and send a file to a network printer, or to a printer that you've shared. Then, while you're in the application, press Ctrl-Alt-*(numeric keypad) to send the end-of-file indicator to the queue.

Wait until your application has sent the entire file to be printed. If the file appears in the queue with a status of SPOOLING, you need to press Ctrl-Alt-*(numeric keypad). If you press the Ctrl-Alt-*(numeric keypad) keys too soon, your print file can split into two print files.

Interrupting Your Applications to Use the Network

If you are using the Redirector or Receiver configuration, you cannot interrupt your applications to do a network task. You must enter commands to do tasks at the DOS prompt.

If you are using the Server or the Messenger configuration, you can interrupt your applications to do a PC LAN Program task. Follow these instructions:

1. Press the network request keys (Ctrl-Alt-Break).

The “Main Menu—Task Selection” is displayed.

Note: If you press the network request keys (Ctrl-Alt-Break) while a network command is running, the network request is delayed until after the command completes.

2. Press F2.

A command line is displayed at the bottom of your menu.

3. Type your network command. (Notice that “NET” is already on the command line, so you don’t need to type it.)
4. Press Enter.
5. Press Esc to get back to your application.

Note: You cannot enter DOS commands, including MODE and PERMIT, from the command line. If you want to enter a DOS command, you must go to the DOS prompt.

Doing Network Tasks With Commands

After you have started the PC LAN Program, set the program up, and started using your applications and programs, you may want to make changes to the way you are using the program, or you may want to do another task. You can enter PC LAN Program commands to do network tasks.

You should go to Chapter 5, “Tasks You Can Do With the PC LAN Program” for descriptions of each PC LAN task you can do. Chapter 5 also tells you why you may want to do the task and the command you should use to do the task.

For example, you may want to:

- Share a disk, directory, or printer (NET SHARE)
- Stop sharing a disk, directory, or printer (NET SHARE)
- Use a disk, directory, or printer (NET USE)
- Stop using a disk, directory, or printer (NET USE)
- Pause sharing a disk, directory, or printer (NET PAUSE)
- Pause using a disk, directory, or printer (NET PAUSE)
- Continue sharing a disk, directory, or printer (NET CONTINUE)
- Continue using a disk, directory, or printer (NET CONTINUE)

- Print a file on a network printer (NET PRINT)
- Check the print queue on a network printer (NET PRINT)
- Print a separator page on a printer you've shared (NET SEPARATOR)
- Stop printing a separator page on a printer you've shared (NET SEPARATOR)
- Send a message to one computer (NET SEND)
- Send a message to all computers (NET SEND)
- Log messages to a file or printer (NET LOG)
- Stop logging messages to a file or printer (NET LOG)
- Add names to your computer for which you can receive messages (NET NAME)
- Stop receiving messages for a name on your computer (NET NAME)
- Forward messages for a name on your computer (NET FORWARD)
- Stop forwarding messages for a name on your computer (NET FORWARD).

Doing Network Commands with Batch Files

Any network command can be placed in a DOS batch file (.BAT file) to ease repetitive use of the commands. You can create batch files for starting up the network or to do any series of operations you do frequently.

Example Batch File:

```
echo off
net start srv server
if errorlevel 1 goto nostart
echo Network started
    •
    •   (other commands)
    •
goto done
:nostart
echo *** NETWORK NOT STARTED ***
:done
```

All network commands set the DOS **ERRORLEVEL** value. This allows the batch file to determine if the network command was successful. The **ERRORLEVEL** value is set to zero if successful or greater than zero if an error occurred. A PC LAN command ends in error if a message starting with **NETxxx** is displayed.

For more information about Batch files and how to use **ERRORLEVEL**, see the *DOS Technical Reference*.

Chapter 7. PC LAN Program Command Reference

Introduction	7-3
Command Information Format ...	7-3
Command Format	7-4
PC LAN Command Parameters and Operands	7-6
NET Command	7-12
NET CONTINUE Command	7-14
NET ERROR Command	7-20
NET FILE Command	7-24
NET FORWARD Command	7-28
NET LOG Command	7-32
NET NAME Command	7-39
NET PAUSE Command	7-43
NET PRINT Command	7-50
NET SEND Command	7-55
NET SEPARATOR Command	7-58
NET SHARE Command	7-63
NET START Command	7-75
NET USE Command	7-93

Introduction

The PC LAN Program commands are like DOS commands. All of the PC LAN Program commands are *external* commands which means that the commands must be read from a diskette or fixed disk before they execute.

Use the *PC LAN Program Quick Reference Card* as a quick reference aid to the PC LAN commands.

Command Information Format

The following tells you the format of, and how to use, the command information in this chapter.

Purpose Tells you what the command does.

Use with Tells you the PC LAN configurations where the command is valid.

Format Tells you the way in which you must type the command.

Multiple format commands include a title line next to the format number. The format for these commands is shown below the title line.

Syntax The syntax includes any special symbols you must use with the command and the *parameters* and *operands* for the command. Parameters and operands are information that you can include with your commands to identify additional information for the command. Parameters start with a slash (/). Operands do not start with a slash.

Some parameters and operands are required and others are optional. Some have default values, which means that, if you do not include the parameter or operands in your command, the system provides a default value.

Remarks Tell you other information you need to know about the command.

Examples Show some ways that you can use the command.

Command Format

The formats for the PC LAN commands are shown with the same symbols and characters that you use for DOS commands.

Remember:

- **Uppercase (A,B,C, etc.)** indicates a keyword parameter or operand. You must type the word exactly as it is shown using uppercase and/or lowercase letters.
- *Italics (a,b,c, etc.)* indicate a replaced word parameter or operand. You must replace the word with the correct word. For example, you must replace the word *device* with the correct device name for your system, such as LPT2. You can type the correct word using uppercase and/or lowercase letters.

- **Brackets** [] indicate an optional parameter or operand or a group of optional parameters or operands. You can use the parameter or operand shown in brackets if you want to. Do not type the brackets.
- **Braces** {} indicate a group of parameters or operands. You must use one of the parameters or operands in the group. Do not type the braces.
- **Bars** | indicate a choice of parameters or operands. You must choose one of the parameters or operands separated by the bar. For example, you must choose YES or NO if the operands are shown as YES|NO. Do not type the bar.
- **Ellipses** ... indicate a repeatable parameter or operand. You can use the parameter or operand as many times as you want to use it. Do not type the ellipses.
- You must include all punctuation (except brackets, braces, ellipses and bars) such as periods, equal signs, slashes, and backslashes where shown.

PC LAN Command Parameters and Operands

You can use the following parameters and operands in the PC LAN commands:

Parameter or Operand	Definition
<i>d:</i>	Drive specifier, A - Z, of a computer. You must type the letter followed by a colon (:).
<i>filename</i>	<p>Name, 1 to 8 characters, of a file or of a device. When you type a filename, DOS checks for invalid characters. The following characters are <i>invalid</i> in filenames:</p> <p>. " / \ [] : < > + = ; , * ?</p> <p>ASCII characters less than 20H</p> <p>You can use any other characters in the filename.</p> <p>You can also use an <i>extension</i> with the filename.</p> <p>You can use the following names for devices:</p> <ul style="list-style-type: none">• CON for console (your display)• PRN or LPT1 for your first parallel printer

Parameter or Operand	Definition
	<ul style="list-style-type: none"> • LPT2 for your second parallel printer • LPT3 for your third parallel printer • AUX or COM1 for a device, such as a serial printer, attached to your first Asynchronous Communications Adapter port • COM2 for a device, such as a serial printer, attached to your second Asynchronous Communications Adapter port • Installable device driver names <p>These names are reserved device names meaning that the names are already defined in DOS to be the name by which DOS recognizes the device.</p>
.ext	<p>Extension or extra name for a filename or dirname. The extension consists of a period followed by 1 to 3 characters. The following characters are <i>invalid</i> in an extension:</p> <p>. " / \ [] : < > + = ; , * ?</p> <p>ASCII characters less than 20H</p> <p>You can use any other characters in the extension.</p>

Parameter or Operand	Definition
<i>shortname</i>	Name, 1 to 8 characters, for a network device or directory. You may want to use a shortname so that other users do not need to know a directory path and so that you can change the path without affecting network users. You can use the same characters in the shortname that you can use in a filename. You cannot use an underscore (_) as the leading character of a shortname.
<i>path</i>	Route to a DOS directory in the following format: [\\][<i>dirname</i>][\ <i>dirname</i> [. . .]] The first \ tells DOS to start the path at the root directory. If you do not use the first \, DOS starts the path at your current directory (the directory you are using when you enter the command). The <i>dirname</i> is the name of the next level of directory that you want to go to.
<i>dirname</i>	Name, 1 to 8 characters, for a DOS directory. You can also use an extension (a period and 1 to 3 characters) with the <i>dirname</i> . For example, you may have a <i>dirname.ext</i> of pay.apr for a payroll directory for the month of April. You can use the same characters in the directory that you can use in a <i>filename</i> .

Parameter or Operand	Definition
<i>password</i>	<p>Security name, 1 to 8 characters, for a device or directory.</p> <p>You can use the same characters in the <i>password</i> that you can use in a <i>filename</i>. You cannot use an extension with a <i>password</i>.</p>
<i>message</i>	<p>Information you want to send to another computer name or user name on the PC LAN. Some control characters, such as a tab, are not always processed as expected, so you should not use these characters in a <i>message</i>.</p> <p>You can use any printable characters and spaces in the <i>message</i>.</p>
<i>printdevice</i>	<p>DOS reserved device name for a printer. You can use the following names for the <i>printdevice</i>:</p> <ul style="list-style-type: none"> • PRN or LPT1 for your first parallel printer • LPT2 and LPT3 for your second and third parallel printers • AUX or COM1 for your first serial printer (attached to a communications adaptor) • COM2 for your second serial printer (attached to a communications adaptor) • Installable printer device drivers

Parameter or Operand	Definition
<i>printname</i>	<p>DOS name for a network printer.</p> <p>You can use the following <i>printnames</i>:</p> <ul style="list-style-type: none"> • PRN or LPT1 • LPT2 • LPT3
<i>configuration or program</i>	<p>Name of a <i>network configuration</i> or <i>program</i>. The <i>configuration</i> or <i>program</i> can be the following:</p> <ul style="list-style-type: none"> • RDR or REDIRECTOR for the Redirector Program • RCV or RECEIVER for the Receiver Program • MSG or MESSENGER for the Messenger Program • SRV or SERVER for the Server Program
<i>addname or username</i>	<p>Network name, 1 to 15 characters, for an additional user who can receive messages on a computer.</p> <p>You can use the same characters in the <i>username</i> that you can use in a <i>filename</i>. You cannot use an extension with a <i>username</i>.</p>

Parameter or Operand	Definition
<i>computername</i> or <i>\\computername</i>	<p>Name, 1 to 15 characters, of a computer on the network. You must use the <code>\\</code> characters if you are using the <i>computername</i> with a path.</p> <p>You can use the same characters in the <i>computername</i> that you can use in a filename. You cannot use an extension with a <i>computername</i>.</p>

NET Command

Purpose

Use the NET command to start the PC LAN Program menus.

Use with

Server, Messenger, Receiver, Redirector

Format

Starting the menus

NET

Remarks

If you enter the NET command before you start the network, you see the first network screen.

If you have started the network and enter the NET command, you see the “Main Menu—Task Selection.”

Example

Displaying network menus

In this example, you want to use the network menus to do a network task.

Note: You need to be in the \NETWORK directory, if you're using the PC LAN Program on a high capacity diskette, 3-1/2" diskette, or fixed disk.

NET Command

Enter the following command:

```
net
```

You see the first network screen or the task selection screen.

NET CONTINUE Command

Purpose

Use the NET CONTINUE command to restart the PC LAN Server, Messenger, Receiver, Disk Redirection, or Print Redirection after you have temporarily stopped the function using NET PAUSE. NET CONTINUE restores the function to the same status as before the function was temporarily stopped.

Use with

Server, Messenger, Receiver, Redirector

Format 1

Continuing a function

NET CONT[INUE] *function* [*function*] ...

Format 2

Continuing printing (Server only)

NET CONT[INUE] PRINT [= *printdevice*]

Syntax

function PC LAN function you want to
 continue:

DRDR

Continues the Disk Redirection so that you can use network disks and directories again.

NET CONTINUE Command

PRDR

Continues the Print Redirection so that you can use network printers and continue spooling files to all printers again.

RCV or RECEIVER

Continues the Receiver so that you can receive messages again.

MSG or MESSENGER

Continues the Messenger so that you can receive messages for yourself and other names again.

SRV or SERVER

Continues the Server so that you can share your disks, directories, and printers again.

PRINT or PRT Continues spooling files to all printers.

=*printdevice* DOS name for the printer you want to continue (only the specified printer is continued).

Remarks

If you are using the Server, printing on all of your printers is automatically restarted if you restart the Print Redirection (PRDR).

You cannot continue MSG if sharing (SRV) is paused. If the Server is paused, you have to enter the NET CONT SRV command to continue receiving messages. If you enter the NET CONT

NET CONTINUE

Command

MSG command while the SRV is paused, you will get the following error message:

```
NET821: Sharing temporarily paused
```

If you are using the Server, receiving messages is automatically restarted when you restart the Server.

You cannot continue PRINT if the Print Redirection (PRDR) is paused. If the Print Redirection is paused, you have to enter the NET CONT PRDR command to continue printing on all of your printers. If you enter the NET CONT PRINT command while the PRDR is paused, you get the following error:

```
NET822: Print or Disk redirection is paused
```

NET CONTINUE PRINT restarts printing on all of your printers. Printing begins with the first file in the print queue. If you paused printing while a file was being printed, NET CONTINUE PRINT reprints the file starting at the beginning of the file. This file may not be the first file printed.

Examples

Continuing the Disk Redirection

In this example, you used a network disk as your drive A. You then wanted to use your real drive A, so you paused the Disk Redirection so that your requests to use drive A are no longer redirected to a network disk. Now, you want to use the network disk as your drive A again. Enter the following command:

```
net cont drdr
```

NET CONTINUE Command

You can use network disks again.

Continuing the Print Redirection

In this example, you used a network printer as your LPT1. You then wanted to use your real printer LPT1, so you paused the Print Redirection so that your requests to use LPT1 are no longer redirected to the network printer. Now, you want to use the network printer as your printer LPT1 again. Enter the following command:

```
net cont prdr
```

You can use network printers again.

Continuing the Messenger

In this example, you have temporarily stopped the Messenger so that you cannot receive messages. You want to start receiving messages again. Enter the following command:

```
net cont msg
```

or

```
net continue messenger
```

You can receive messages again.

NET CONTINUE Command

Continuing the Server

In this example, you have temporarily stopped the Server so that other computers cannot use the disk and printer you have shared or send you messages for other computers. You want to let other computers use your disk and printer again and receive messages for other computers again.

Enter the following command:

```
net cont srv
```

or

```
net continue server
```

Other users can use your devices again and you can receive messages for other computers again.

Continuing more than one function

In this example, you have paused the Print Redirection and the Disk Redirection so that you cannot use network disks and printers. You want to use network disks and printers again. Enter the following command:

```
net cont drdr prdr
```

You can use network devices again.

NET CONTINUE

Command

Continuing printing

In this example, you temporarily stopped printing network files on your printer. Now, you want to start printing network files on your printer again. Enter the following command:

```
net continue print
```

Your printers start printing network files again.

Continuing printing on a specified printer

In this example, you were sharing two printers, LPT1 and LPT2. You want to print on LPT1 again, but not LPT2. Enter the following command:

```
net cont prt=lpt1
```

Only your printer LPT1 will print files.

Other computers can use your printer again. Your printer continues printing beginning with the first file in the print queue.

NET ERROR Command

Purpose

Use NET ERROR to display a list of network errors that have occurred on your computer.

Use with

Server, Messenger

Format

NET ERROR [/D]

Syntax

/D Deletes the error list (displays and then deletes the list)

Remarks

You should use NET ERROR to check the status of your computer on the network. If you are using the Server or Messenger configuration, you should use NET ERROR to check errors that may have occurred on your computer. NET ERROR does not report errors that occur on other network computers.

The error list size is limited. If the size is exceeded, the “oldest” error is deleted and the new error is added to the top of the error list. You should enter NET ERROR /D when you display the error list so that you don’t lose errors. Only errors considered unusual and unexpected are put into the list. All errors include the time of the error and a message; some

NET ERROR

Command

errors include specific information about the error.

The possible error list entries are the following:

- UNABLE TO ACCESS *d:\path\filename.ext*

This error indicates that either the Messenger or Server could not access the specified file because:

- The file was on a diskette and the diskette was not in the correct drive or the drive door was open.
- The file was on a write-protected diskette.
- The file has been deleted or renamed.
- The file has been relocated because of a DOS JOIN, SUBST or ASSIGN command or because of a NET USE command.
- The file was in use by another computer when the Messenger or Server tried to access it.

- NETWORK ERROR

This error indicates that an unexpected NET BIOS error has occurred. The PC LAN Program was unable to complete a request that was sent to it.

The actual network error is displayed as the internal (hexadecimal) representation of the NET BIOS Control Block (NCB). See the *PC Network Technical Reference* for more information about the error.

If your computer is connected to an IBM Token-Ring Network, also see “Determining What to Do After an Error” on page 14-4 to determine the error cause and possible recovery actions.

NET ERROR

Command

- PRINT FILE ERROR

This error indicates that the Server could not access the print queue file containing the text to print. The print queue ID number and the submitter of the file are displayed. The Server could not access the specified file because:

- The file was on a diskette and the diskette was not in the correct drive or the drive door was open.
- The file has been deleted or renamed.
- The file has been relocated because of a DOS JOIN, SUBST or ASSIGN command or because of a NET USE command.

- SERVER ERROR

This error indicates that the Messenger or the Server received an invalid request from the network. This request couldn't be processed and was ignored.

If the text "FFSMB" is displayed, the error may have been caused by someone on the network trying to use a Messenger as a Server. If "FFSMB" is not displayed, the request that caused the error probably was made by a network application program and was sent to this computer by mistake.

The actual network error is displayed as the internal (hexadecimal) representation of the SERVER MESSAGE BLOCK (SMB).

NET ERROR Command

- *message*

The error is an error message that is explained by the text of the message. See Appendix A, “Messages” for more information.

NET FILE Command

Purpose

Use NET FILE to display the current users and current record locks for a file and to close a file that is opened by other computers or that has locked records.

Use with

Server

Format 1

Check the status of all open files

NET FILE

Format 2

Check the status of a specific file

NET FILE [*d:*][*path*]*filename*[.ext]

Format 3

Closing a file on your computer

NET FILE [*d:*][*path*]*filename*[.ext] /C

NET FILE Command

Syntax

<i>d:</i>	Drive specifier for the drive that contains the file (A:, B:, C:, etc.)
<i>path</i>	Route to a DOS directory (if the file is in a directory) in the format [\\] <i>[dirname]</i> [\\ <i>dirname</i> ...][\\]
<i>filename</i>	Name of the file that you want to check or close
<i>.ext</i>	Extension for the filename
<i>/C</i>	Close the file

Remarks

Only the Server computer can enter NET FILE. You should use NET FILE to recover from errors caused by files being left open or by files being locked. The locked files cannot be accessed by other computers. You can use NET FILE to close the files and release the locks so that the other computers can access the file. If you enter NET FILE with only a *filename*, status information about the file is displayed. If you enter NET FILE without a *filename*, information about all open files is displayed. The information lists the user or users for each file and the number of locks each user has on the file.

You can use NET FILE as many times as necessary after you start DOS and the PC LAN Program.

If you enter NET FILE with */C*, the specified file is closed.

NET FILE

Command

IMPORTANT: You should not close a file unless you are sure that the file is not being used. If you close a file while another computer is using the file, the other computer loses use of the file and receives an error.

Examples

Checking the status of all open files

In this example, you want to see the status of all open files on your machine. Enter the following command:

```
net file
```

A list of all open files, with the users and record locks for each file, is displayed.

Checking the status of a file

In this example, you want to see if a file named **april.dat** in subdirectory **payroll** of your fixed disk **C** is closed. Enter the following command:

```
net file c:\payroll\april.dat
```

If **APRIL.DAT** is open, a table showing the users of **APRIL.DAT** and the open record locks is displayed.

NET FILE Command

Closing a file on your computer

In this example, you want to close a file named **april.dat** in subdirectory **payroll** of your fixed disk **C**. Enter the following command:

```
net file c:\payroll\april.dat /C
```

A warning prompt is displayed, if you answer yes, the file is closed.

IMPORTANT: In this example, if the file is being used by another computer, the other computer loses the use of the file and receives an error.

NET FORWARD

Command

Purpose

Use the NET FORWARD command to forward messages sent to a *computername* or additional name on your computer to a computer name or additional name on another network computer.

Use with

Server, Messenger

Format 1

Forwarding to another computer

```
NET FOR[WARD] {computername1|username1}  
{computername2|username2}
```

Format 2

Stop forwarding

```
NET FOR[WARD] {computername1|username1}  
/D
```

Syntax

computername1 Name of your computer (if you want to forward your own messages)

username1 Name of an additional user on your computer (if you want to forward messages for another name on your computer)

NET FORWARD

Command

- computername2* Name of the computer to which you want to forward messages
- username2* Name of the user to whom you want to forward messages
- /D* Delete or stop forwarding messages for *computername1* or *username1*

Remarks

You can only forward messages to another Server computer or Messenger computer because the person at the other computer must be able to add the name. If they didn't change the number of additional names they can have on their computer when they started the network, they only have room for one additional name. Messages can only be forwarded once for a computer name or user name. For example, if you are receiving forwarded messages for computer name ANN, you can't forward messages for ANN to another computer.

You can use NET FORWARD /D to stop forwarding for a name only if you entered NET FORWARD to forward the messages. For example, if you are receiving forwarded messages for computer name ANN because another computer entered NET FORWARD to forward the messages to you, you cannot use NET FORWARD /D to stop the forwarding. However, you can enter NET NAME /D to remove the forwarded computer name or user name from your computer.

NET FORWARD

Command

If the computer you have forwarded your messages to can no longer accept messages for your name (for example, if the other computer has issued NET NAME /D or terminated network activity), you will automatically start receiving messages for your forwarded name.

Example

Forwarding messages

In this example, computer name RICK wants to forward his messages to SCOTT. RICK enters the following command:

```
net forward rick scott
```

Messages to RICK are forwarded to SCOTT's computer.

Note: SCOTT will receive RICK's messages even if RICK switches off his computer.

Stop forwarding messages

In this example, RICK forwarded his messages to another computer. RICK no longer wants to forward his messages. RICK enters the following command:

```
net forward rick /d
```

RICK receives his own messages again.

Stop receiving forwarded messages

In this example, SCOTT is receiving RICK's messages because RICK forwarded his messages to SCOTT. SCOTT doesn't want to receive RICK's messages any more. Scott enters the following:

NET FORWARD Command

```
net name rick /d
```

```
;
```

SCOTT no longer receives **RICK**'s messages.
RICK receives his own messages again.

NET LOG

Command

Purpose

You can use the NET LOG Command to start or stop placing messages that you receive into a specified device or file. You can also use NET LOG to display the status of logging.

Use with

Server, Messenger, Receiver

Format 1

Logging to a file

```
NET LOG [{d:}\\computername]  
[path]filename[.ext]
```

Format 2

Logging to a device

```
NET LOG {printdevice|CON}
```

Format 3

Turning on or off previous logging

```
NET LOG {/ON|/OFF}
```

NET LOG Command

Format 4

Displaying the status of logging

NET LOG

Syntax

<i>d:</i>	Drive specifier for the drive that contains the log file (A:, B:, C:, etc.)
<i>\\computername</i>	Name of the network computer that has the file or device to which you want to log messages.
<i>path</i>	Route to a directory (if the log file is in a directory) in the format [\\] <i>[dirname]</i> [<i>[dirname[. . .]</i>]]
<i>filename</i>	Name of the file to which you are logging messages
<i>.ext</i>	Extension for the <i>filename</i>
<i>printdevice</i>	Name of the printer to which you are logging messages (PRN, LPT1, LPT2, LPT3, COM1, COM2, AUX or installable device drivers)
CON	Console or display
/ON	Start logging (default)
/OFF	Stop logging

NET LOG

Command

Remarks

You can use NET LOG to indicate that messages sent to any additional name or computer name on your computer should be directed to a specified file or device. The file or device can be attached to your computer or can be a network file or device.

If you are using a Server or Messenger configuration, messages are logged to memory (a window appears on your screen when a message is received, to inform you that a message is waiting to be viewed), unless you specify another place to log them. If you are using a Receiver configuration, messages are logged to your console, unless you specify another place to log them.

Do not save messages to a printer on another computer, or to your printer if it is shared with others on the network. Due to activity on the Server computer there is the possibility that when the message is printed, it will print in more than one piece (each piece can have a separate separator page). It is also possible that the reception of a message, when logging to a network printer, can cause data, being sent by your application to the printer, to split in a similar manner. This occurs because data sent to the printer arrives from two different sources at the same time. The network program automatically separates the data when this happens but it results in the splitting up of printer output.

If you start logging messages to a file that is on a diskette, the diskette must be inserted in the drive that you specified in the NET LOG Command. The diskette must stay in the drive as long as logging is ON. If the diskette is not in

NET LOG Command

the correct drive and the person receiving the message is using the Receiver configuration, the sender gets an error message. If the diskette is not in the correct drive and the person receiving the message is using the Server or Messenger configuration, the sender doesn't get an error message. The message is stored in memory as a "waiting" message, and an error message is logged to the error file (see the "NET ERROR Command" on page 7-20).

If you enter NET LOG and specify an existing file in which to log messages, messages are logged at the end of the file. If you specify a new file in which to log messages, the file is created and messages are logged starting at the beginning of the file.

NET LOG /OFF stops logging. Messages are displayed on the console again. NET LOG /ON starts logging to the file or device that you last specified with NET LOG.

If you enter NET LOG without any parameters, the status of logging for your computer is displayed. The status includes the name of the file or device to which you are logging messages and if logging is ON or OFF.

You can view your logged messages by:

- Using the PC LAN Program Menus and choosing to "View Messages," if you are using the Server or Messenger configuration.
- Displaying the contents of your log file. You can use an editor such as DOS EDLIN, or you can use the DOS TYPE command to display the file.

NET LOG

Command

To delete messages from the log file:

- If you are using the Server or Messenger configuration, you must use the PC LAN Program Menus and choose to “View Messages.” Then, use the delete message key (Ctrl-PgUp).
- If you are using the Receiver configuration, you must use an editor such as DOS EDLIN.

Examples

Log messages in a new file

In this example, you want to store your messages in a new DOS file on your computer. The file is called MSG.LOG. You want the file to be in your root directory. Enter the following command:

```
net log \msg.log
```

The DOS file MSG.LOG is created. All messages for you or any other usernames on your computer are stored starting at the beginning of the file. You no longer see messages on your screen.

Log messages in an existing file

In this example, you want to store your messages in an existing DOS file on your computer. The file is called MSG.LOG. The file is in the root directory on your computer. Enter the following command:

```
net log \msg.log
```

All messages for you or any other usernames on your computer are stored at the end of the file

NET LOG Command

MSG.LOG. You no longer receive messages on your screen.

Stop logging messages

In this example, you want to stop storing messages in your DOS file called MSG.LOG. Enter the following command:

```
net log /off
```

Messages for you or any other user names on your computer are no longer stored in the file. You now see messages on your screen.

Start logging messages again

In this example, you want to start logging messages again. You entered NET LOG previously and specified the file MSG.LOG as the file in which to log your messages. Enter the following command:

```
net log /on
```

Messages are logged at the end of the file MSG.LOG again.

Displaying messages on the printer

In this example, you want to print your messages on your second printer. Enter the following command:

```
net log lpt2
```

Messages are printed on your printer LPT2.

NET LOG

Command

Log messages in a file on a network computer

In this example, you want to store your messages in a DOS file named MSG.LOG in subdirectory named DIR2 on a network computer named RICK. Enter the following command:

```
net log \\rick\dir2\msg.log
```

Note: The previous example assumes computer *Rick* has previously shared his root directory with the command:

```
net share \
```

If you have used the network directory \\RICK\DIR2 for a drive letter such as B, then you can enter the following command:

```
net log b:\msg.log
```

Your messages are stored in the file MSG.LOG on *Rick's* computer.

NET NAME Command

Purpose

Use the NET NAME command to specify additional names for which you want to receive messages. You can also use NET NAME to display the computer name, additional names, and forwarded names on your computer.

Use with

Server, Messenger, Receiver, Redirector

Format 1

Adding a name for messages (Server or Messenger only)

NET NAME *addname*

Format 2

Deleting an additional name for messages
(Server or Messenger only)

NET NAME *addname* /D

Format 3

Displaying your computer's name, additional names, and forwarded names

NET NAME

NET NAME

Command

Syntax

<i>addname</i>	Name for an additional user who can receive messages on your computer
/D	Delete the specified additional name

Remarks

The names you add with NET NAME can receive messages on your computer but cannot send messages. Only the computer name that you specified when you used NET START to start the PC LAN Program can send messages from your computer.

You must specify the number of names for which you want to receive messages when you start the PC LAN Program. You can use the /USN parameter of the NET START command to specify that you want to receive messages for a total of up to 12 additional names and forwarded names. If you do not use the /USN parameter, you can receive messages for only one additional name.

The /D parameter allows you to delete an additional name from your computer. You no longer receive messages for that name. Also, if you are receiving forwarded messages for a name, you can use /D to delete the forwarded name from your computer. You cannot delete your computer name from your computer using /D.

If you enter NET NAME without any parameters, a list of your computer's name and additional names for which you are receiving messages (including forwarded names) is displayed.

NET NAME Command

Examples

Adding a name for messages to your computer

In this example, you want to add the name **PATTY** to your computer. Enter the following command:

```
net name patty
```

You now can receive messages for **PATTY** on your computer. Any messages you send are sent only from the computer name you entered when you started the network.

Deleting a user name

In this example, you want to delete the additional name **PATTY** that you added to your computer. Enter the following command:

```
net name patty /d
```

You can no longer receive messages for **PATTY** on your computer.

Displaying your computer name and additional names

In this example, you want to list the names that can receive messages on your computer. Enter the following command:

```
net name
```

A list of the names for which you are receiving messages is displayed.

NET NAME

Command

Check if a name is active on the network

In this example, you want to see if RICKE is on the network. Enter the following command:

```
net name ricke
```

If you get a “Name already exists on the network” message, the name is in use (active). If you do not get the message, the following command removes the name if it was successfully added on your computer:

```
net name ricke /d
```

This example can be used to see if someone (RICKE in this example) is on the network before attempting to send them a long message.

NET PAUSE

Command

Purpose

Use the NET PAUSE command to temporarily stop the PC LAN Server, Messenger, Receiver, Disk Redirection, or Print Redirection functions. The functions remain in your computer's memory.

Use with

Server, Messenger, Receiver, Redirector

Format 1

Pausing a function

NET PAUSE *function* [*function*] [. . .]

Format 2

Pausing printing (Server only)

NET PAUSE PRINT[=*printdevice*]

Syntax

function PC LAN function you want to pause (DRDR, PRDR, RCV or RECEIVER, MSG or MESSENGER, SRV or SERVER)

PRINT or PRT Pause printing

printdevice DOS name for the printer that you want to pause (LPT1, LPT2, ...)

NET PAUSE

Command

Remarks

You may want to use NET PAUSE to temporarily regain private use of your devices or files. For example:

- If you are using a network device as your drive A, you can't use your real drive A. But, if you pause the Disk Redirection, the network device or directory is no longer your drive A and you can use your real drive A.
- If you are using a network printer as your LPT1, you can't use your real LPT1. But, if you pause the Print Redirection, the network printer is no longer your LPT1 and you can use your real printer as your LPT1.
- If you are receiving messages, you may want to stop receiving them temporarily. If you pause the Messenger or Receiver (depending on which function you started), you no longer receive messages.
- If you are sharing a device or directory with other network computers, you no longer have the only access to the device or directory. But, if you pause the Server, other computers can no longer use the device or directory and you regain private use of the device or directory.

NET PAUSE does not delete the network names you have specified with NET SHARE or NET USE, and it does not delete the user names you have specified with NET START or NET NAME. The names are still in your computer's memory.

NET PAUSE

Command

You can use the NET CONTINUE command to start the function again. The original network names and user names you used with the functions are still in your computer's memory.

If you are using the Server function and pause the Server, your Messenger function is automatically paused also.

If you are using the Server function and pause the Print Redirection, spooled printing on all your printers is automatically paused also.

You can only pause the Server if no one is using a disk or directory that you've shared. You'll receive an error message if you try to pause the Server while your computer has shared network files that are being used.

If you are sharing your printer and then pause the Server, other users can no longer use your printer. The Server no longer accepts files that are sent to your print queue; however, files that are already in the print queue are printed.

If you want to pause printing the files in the print queue, you must use the PRINT parameter. Entering NET PAUSE PRINT causes the printing to be cancelled; however, the file that is being printed remains in the print queue. The file will be printed when you restart printing with the NET CONTINUE command. Other files in the print queue also remain in the queue. You must enter NET CONTINUE PRINT to continue printing the files in the queue.

NET PAUSE

Command

Examples

Pausing the Disk Redirection

In this example, you are using a disk on a network computer as your drive B because your application uses drive B to store data. Now, you want to use your real drive B so that you can copy files to another diskette. Enter the following command:

```
net pause drdr
```

Pausing the Print Redirection

In this example, you are using a printer on a network computer as your LPT2. Now, you want to use your real printer LPT2. Enter the following command:

```
net pause prdr
```

Pausing the Receiver

In this example you started the Receiver configuration, and have decided to temporarily stop receiving messages. Enter the following command:

```
net pause rcv
```

or

```
net pause receiver
```

You no longer will receive messages, but you can still send messages. Enter NET CONTINUE RCV if you want to start receiving messages again.

NET PAUSE Command

Pausing the Messenger

In this example you started the Messenger or Server configuration, and have decided to temporarily stop receiving messages. Enter the following command:

```
net pause msg
```

or

```
net pause messenger
```

You can no longer receive messages, but you still can send messages. Use NET CONTINUE MSG when you're ready to start receiving messages again.

Pausing the Server

In this example, you are sharing your fixed disk D with other network computers. You want to backup your disk but want to be sure that no one uses any files from the disk while you back it up. You must temporarily quit sharing so that you can back up the disk. Enter the following command:

```
net pause srv
```

or

```
net pause server
```

Other users can no longer use your devices, but you can still use your devices. Use NET CONTINUE SRV to let other users share your devices again.

NET PAUSE Command

Pausing more than one function

In this example, you want to temporarily stop using network disks and printers. Enter the following command:

```
net pause drdr prdr
```

You can no longer use network devices, but you can still use your devices. Use **NET CONTINUE DRDR PRDR** to use network disks and printers again.

Pausing printing on all printers

In this example, you need to check the paper and ribbons in the printers you are sharing with the network.

You want to allow other computers to keep sending files to your printers, but you want to temporarily stop printing files so that you can service the printers. Enter the following command:

```
net pause print
```

The files in the print queue are not printed. The files, including the file that was being printed when you entered **NET PAUSE PRINT**, remain in the queue. Other computers can still send files to the print queue.

NET PAUSE Command

When you've serviced the printers, you can use NET CONTINUE to continue the printers. The file that was being printed is reprinted from the beginning. Files from the print queue will be printed.

Note: When pausing printing, a file currently being printed will be cancelled and put back in the queue. This file will be restored when printing is continued.

Pausing printing on a specified printer

In this example, the printer you are sharing, LPT1, needs to be fixed. You want to allow other computers to keep sending files to your printer, but you want to temporarily stop printing files on the printer so that it can be fixed. Enter the following command:

```
net pause print=lpt1
```

The files in the queue are not printed. The files, including the file that was being printed when you entered NET PAUSE PRINT, remain in the queue. Other computers can still send files to the print queue.

After you fix the printer, you can use NET CONTINUE to continue the printer. The file that was being printed is reprinted from the beginning. Files from the print queue will be printed.

NET PRINT Command

Purpose

Use the NET PRINT command instead of the DOS Print command. The NET PRINT command allows you to send a file to a printer that you are sharing with other network users or to a network printer that you are using. You can also use the NET PRINT command to display the status of your print queue or of a network print queue.

Use with

Server, Messenger, Receiver, Redirector

Format 1

Printing on a remote or local printer

```
NET PRINT [d:|\\computername1]  
[path]filename[.ext] printdevice
```

Format 2

Displaying print status of a remote print queue

```
NET PRINT \\computername2
```

Format 3

Displaying print status of the local print queue (server only)

```
NET PRINT
```

NET PRINT Command

Syntax

<i>d:</i>	Drive specifier for the drive that contains the file you want to print (A:, B:, C:, etc.)
<i>\\computername1</i>	Name of the network computer that has the file you want to print
<i>path</i>	Route to a directory (if the file is in a directory) in the format [\\] <i>[dirname]</i> [<i>dirname</i> [. . .]\\]
<i>filename</i>	Name of the file you want to print
<i>.ext</i>	Extension for the <i>filename</i>
<i>\\computername2</i>	Name of the computer to which the remote printer is attached
	You can enter NET USE to find out which computer the printer is attached to
<i>printdevice</i>	DOS name for the printer you want to use (LPT1, LPT2, LPT3, AUX, COM1, COM2, or installable device drivers)

Note: Only LPT1, LPT2, or LPT3 can be specified if the printer is not attached to your machine.

NET PRINT

Command

Remarks

You should use NET PRINT to send a file to a PC LAN printer to be printed even if the printer is attached to your computer.

You can use the command shown in format 1 to print a file even if the printer is not a network printer. You must specify a print device on this command.

If the printer is not attached to your computer, you can use the command shown in Format 2 to display the print queue. A list of all the files that you have submitted to the printer and the status of the files are displayed. You cannot change the status of the files in the queue. Only the computer to which the printer is attached can change the status of the queue.

You can also use NET PRINT to display status information about PC LAN printers. If the printer is attached to your computer, you can enter NET PRINT (Format 3) to display a list of the print queue, the files in the queue, and the status of the files. You can use the PC LAN menus to change the print queue.

Note: For Servers only, if the file to be printed is not on your computer, and the device you are printing to is not LPT1, LPT2, or LPT3 (for example, COM1) the file will not be spooled (queued) but will be sent directly to COM1. To avoid this, it is suggested that if you share COM1, that you also use it yourself as well.

NET PRINT Command

The NET PRINT command does not support the DOS global characters (* and ?) in the filename. To submit multiple files, you must use the DOS FOR command to repeat the NET PRINT for each file. For example, to print all .ASM files from the DOS command line, enter the following:

```
for %i in (*.asm) do net print %i lpt1
```

To make a batch file (NETPRINT.BAT) to do multiple NET PRINT commands, enter the following:

```
copy con netprint.bat  
for %%i in (%1) do net print %%i %2  
<F6> <enter>
```

To print all .ASM files, enter the following:

```
netprint *.asm lpt1
```

Examples

Sending a file to a printer

In this example, you are using a printer attached to another computer on the PC LAN. The other computer is known as SAM. The printer is known as LPT1. You want to send your file named SAMLTR.TXT in a subdirectory named LETTERS to the printer. Enter the following command:

```
net print \letters\samltr.txt lpt1
```

NET PRINT

Command

Your file is sent to the print queue to be printed on LPT1.

Note: You should have entered the correct NET USE command to use the printer before you send the file to the printer. If a NET USE is not done, the file will be printed locally.

Displaying status of a PC LAN printer

In this example, you want to display the status of all the files that you've sent to be printed on the printer(s) attached to computer name SAM.

Enter the following command:

```
net print \\sam
```

A list of all the files that you have sent to SAM along with the current status of each file is displayed.

Displaying status of your PC LAN printer

In this example, you are sharing your printer named LPT1 with other PC LAN computers. You want to display the status of all the files that have been sent to be printed on your printer.

Enter the following command:

```
net print
```

A list of the files that have been sent to your printer and the status of the files are displayed. If you want to change the print queue, you must use the PC LAN Program menus.

NET SEND

Command

Purpose

Use the NET SEND command to send messages to other computernames or usernames on the network.

Use with

Server, Messenger, Receiver, Redirector

Format

Sending a message

NET SEND {*computername*|*addname*|*} *message*

Syntax

<i>computername</i>	Name of computer that you want to send a message to
<i>addname</i>	Name of an additional user on a computer that you want to send a message to
*	Message is sent to all names
<i>message</i>	Message you want to send

NET SEND

Command

Remarks

You can send a message of up to approximately 100 characters. The actual maximum message size varies depending on the length of the computer name or username. If you want to send a longer message, you must use the menus. The computer name or the additional name is the computer or user that you want to send a message to. After you send a message to a computer name or an additional name, you'll see a confirmation message telling you if the message was sent and received.

You can use * instead of a computer name or additional name if you want to send a message to all of the computers on the network (a *broadcast* message). You do not receive a confirmation message if you send a broadcast message.

If you want to send a message and use the message editor, you can use the PC LAN Program menus and go to the "Send Messages" screen.

Examples

Sending a message to one computer name or additional name

In this example, you want to send a message to another computer named RICK. Enter the following command:

```
net send rick my printer is ready to use
```

The message is sent to RICK. A confirmation message is displayed on your computer.

NET SEND Command

Sending a message to all computer names

In this example, you want to send a message to all the names on the network. Enter the following command:

```
net send * my printer is ready to use
```

The message is sent to all the computer names on the PC LAN. You do not receive a confirmation message.

NET SEPARATOR

Command

Purpose

You can use NET SEPARATOR to control whether or not a separator page is printed at the beginning of your print file.

You can use NET SEPARATOR only if your computer is a Server computer. You can use NET SEPARATOR as many times as necessary after you start DOS and the PC LAN Program.

Use with

Server

Format 1

Printing a separator page that you created

NET SEP[ARATOR] *printdevice*
[d:][*path*]*filename[.ext]*

Format 2

Printing the default separator page

NET SEP[ARATOR] *printdevice*

Format 3

Stop printing previously specified separator page

NET SEP[ARATOR] *printdevice* /D

NET SEPARATOR Command

Format 4

Separator Page Status

NET SEP[ARATOR]

Syntax

printdevice DOS name for the printer attached to your computer that you want to use (LPT1, LPT2, LPT3, AUX, COM1, COM2, or installable device drivers).

The device must be shared before you can print a separator page on it.

d: Drive specifier for the drive that contains the separator page file (A:, B:, C:, etc.)

path Route to a directory (if the file is in a directory) in the format
[\\][*dirname*][\ *dirname*[. . .][\]]

filename Name of the separator page file (the file must be on the Server computer; if not, an error occurs)

.ext Extension for the *filename*

/D Stop printing the separator page

NET SEPARATOR

Command

Remarks

If you do not want to print separator pages, you must use the NET SEPARATOR /D command. If you want to print your own separator page, you must enter the NET SEPARATOR command and specify the *filename* that contains the separator page you want to print.

Each printer shared can have its own separator page.

The default separator page is in a file named PQ.SEP and is provided with your PC LAN Program. If you are using an IBM printer, use the PQ.SEP separator page file. If you are using a non-IBM compatible printer, use the PQ.OEM separator page file.

Note: The standard separator page is for the IBM Personal Computer Color Printer. You may need to modify the standard separator page file for other printers. The separator page is an ASCII file. It is limited to 512 bytes.

You can also create your own separator pages. If you need instructions about creating or modifying a separator page, see "Using Separator Pages on Shared Printers" on page 10-18.

If you need to print foreign language characters in your separator page, you should issue the DOS command GRAFTABL before starting PC LAN.

NET SEPARATOR

Command

Examples

Printing the default separator page

In this example, you are sharing your LPT2 (a letter-quality printer). You want to print the default separator page at the beginning of your files that are printed on the printer. Enter the following command:

```
net separator lpt2
```

The default separator page is printed between each file printed on LPT2.

Printing a separator page that you create

In this example, you are sharing a letter-quality printer named LPT1. You want to print a separator page that you create at the beginning of the files that are printed on your printer.

You create a separator page named **BANNER.PG** in your directory named **PRINTERS**. Enter the following command:

```
net separator lpt1 c:\printers\banner.pg
```

Your separator page is printed at the beginning of your files. See "Using Separator Pages on Shared Printers" on page 10-18 for information on how to create your own separator page.

NET SEPARATOR

Command

Stop printing a separator page

In this example, you are using a letter-quality printer named COM1. You want to stop printing a separator page at the beginning of your files that are printed on the printer. Enter the following command:

```
net separator com1 /d
```

A separator page will not print at the beginning of your files.

NET SHARE

Command

Purpose

Use the NET SHARE command to let other computers use your devices or directories or to stop letting other computers use your devices or directories. You can also use NET SHARE to display a list of the devices you are sharing and the computers that are using the devices.

See Chapter 10, “Managing the Server Computer” for more information about managing shared devices.

Use with

Server

Format 1

Sharing a disk

```
NET SHARE shortname = d:[\]  
[password|*][[/R|/W|/RW|/WC|/RWC]
```

Format 2

Stop sharing a disk

```
NET SHARE shortname /D
```

NET SHARE Command

Format 3

Sharing a directory with a shortname

```
NET SHARE shortname = [d:]path  
[password*] [/R|/W|/RW|/WC|/RWC]
```

Format 4

Stop sharing a directory with a shortname

```
NET SHARE shortname /D
```

Format 5

Sharing a directory without a shortname

```
NET SHARE path [password*]  
[/R|/W|/RW|/WC|/RWC]
```

Format 6

Stop sharing a directory without a shortname

```
NET SHARE path  
[/R|/W|/RW|/WC|/RWC] /D
```

Format 7

Sharing a printer without a shortname

```
NET SHARE printdevice [password*]
```

NET SHARE Command

Format 8

Sharing a printer with a shortname

NET SHARE *shortname* = *printdevice* [*password*]*]

Format 9

Stop sharing a printer

NET SHARE *printdevice* /D

Format 10

Stop sharing a printer with a shortname

NET SHARE *shortname* /D

Format 11

Displaying sharing status

NET SHARE

IMPORTANT: If you share devices with the format shown in Format 5 (Sharing a directory without a *shortname*) or Format 7 (Sharing a printer without a *shortname*), people who are using the menus will not be able to use your devices. The menus do not support using network devices that do not have shortnames.

Syntax

d: Drive specifier for the drive you want to share or the drive that contains the directory you want to share (A:, B:, C:, etc.)

NET SHARE

Command

Note: If you want to share your entire disk, type *d:* to share your disk at the root directory

path Route to the directory you want to share in the format [*\dirname*] [*\dirname*...]

password Security name for the disk or directory

***** Prompt for a password

/R Read-only access

/RW Read/Write access

/W Write-only access

/WC Write/Create/Delete access

/RWC Read/Write/Create/Delete access
(Default parameter if an access parameter is not specified)

/D Stop sharing the disk, directory, or printer

NET SHARE Command

shortname Short name for the disk, directory, or printer

printdevice DOS name for the printer attached to your computer that you want to use (LPT1, PRN, LPT2, LPT3, AUX, COM1, COM2, or installable device drivers)

Remarks

If you enter NET SHARE without any parameters, a list of the devices and directories on your computer that you are sharing with other computers is displayed. The computer name of the PC LAN computers using the devices and directories is also displayed.

You must use NET SHARE to share a device (such as a printer or a fixed disk) or a directory on your computer with other PC LAN computers.

If you specify only the root directory of the drive (such as C:\), other computers can use all the files on that drive. If the path includes string substitutions (specified in the DOS SUBST Command) or combined names (specified in the DOS JOIN Command), these names must be specified in the NET USE command.

You can specify a *shortname* for a directory path. The *shortname* is a replacement for the real path. If you use a *shortname*, other PC LAN computers only need to know the *shortname* to be able to access the path and cannot specify the real path to use the device or directory.

Note: Because you cannot use drive specifiers (such as B, C, ...) in path names, you must use a *shortname* for a drive if you want to share a drive.

NET SHARE

Command

You can use a password to allow only users who know the password to use the devices or directories. You can specify different passwords with different access rights on the same path. Note that if you use the menus, the password will not be displayed as you type it in. You can use * as the password if you are entering NET SHARE in a batch file and do not want to type the password in the file. When the batch file executes, you will be prompted for the password.

Note: If you use * as the password from the command line, you will be prompted for the password. The password will not be displayed.

If you share the same path with different access rights, then the access right is required to delete the share. For example:

```
net share \dos readpw /r
net share \dos writepw /rwc
```

To delete:

```
net share \dos /r /d
net share \dos /rwc /d
```

If you share a printer named PRN, LPT1, LPT2, or LPT3, the PC LAN Program automatically does a system share and system use of the printer for you. For example, if you enter NET SHARE LPT1 or NET SHARE LQPRT=LPT1, the share command automatically generates two commands as follows:

```
net share _lpt1=lpt1
net use lpt1: \\servername\ _lpt1
```

NET SHARE Command

The share and use entries can be displayed on the status lists.

Note: If you share a printer, you cannot USE a remote printer with the same name. For example, if you share LPT1, you cannot use a remote printer as LPT1.

If you delete a shared printer (NET SHARE LPT1 /D or NET SHARE LQTRT /D), the share delete command automatically deletes the system share and system use of the printer for you.

You are not allowed to delete the system share (NET SHARE _LPT1 /D). If you attempt to do so, you will get the following error message:

```
Net079: Cannot delete; System share
```

You are allowed to delete the system use (NET USE LPT1: /D), but the PC LAN Program will soon reconnect it. If reconnection succeeds, you will get the following message:

```
System printer(s) have been  
deleted and reconnected
```

If reconnection fails, you will get the following message:

```
Net080: Unable to reconnect; All shared printers  
should be deleted
```

Therefore, if the system use of a printer has an error status, you are able to recover your system use of the printer, by using this reconnect operation.

NET SHARE

Command

If you share a printer with a DOS device name of AUX, COM1, or COM2 or a printer with an installable device driver name, you must enter a NET USE Command and use the printer as your PRN, LPT1, LPT2, or LPT3. If you don't enter NET USE for the printer, information you print is sent directly to the printer and isn't queued. Your data is intermixed with other files that are queued for the printer causing errors. Only printers specified with the DOS device names of PRN, LPT1, LPT2, or LPT3 can be used by your computer if your computer is on the network.

If you use /D, sharing is deleted for the specified path or shortname. Other users can no longer use the device or directory. When sharing is deleted (/D) on a printer, the printer is not immediately available, all the files in the queue destined to this printer must be printed first.

Notes:

1. You must include yourself in the number of redirectors your Server will support. See the /RDR parameter in the NET START command. Increase the the value of /RDR by 1 if you are going to share printers.
2. You should share all your printers immediately after you start the network to be sure that the NET USE done by NET SHARE can succeed.
3. If you use this form of the MODE command,

```
[d:][path]mode LPT#[:] = COMn
```

and if you want to share LPT# and have print redirected to COMn, you must issue the mode command before you start the network. Also, if you are using the MODE command to

NET SHARE Command

initialize the Asynchronous Communications Adapter for a serial printer being shared on the network, do not specify the P option.

4. If you are sharing a high-speed printer, such as the IBM 3812 Pageprinter, you may want to change the /PCx parameter on the NET START command. Changing this parameter can give better response time to an application running on a Server computer. See "NET START Command" on page 7-75.

Examples

Sharing a disk

In this example, you want to share the root directory of your fixed disk C (C:\) with other network users. You want your disk to be known as **DISKC** on the network. Enter the following command:

```
net share diskc=c:\ secret /RWC
```

The disk is available to other network computers as **DISKC**. The disk has a password of **secret**. Other users can read, write, and create files on the disk.

Sharing a directory

In this example, the directory you want to share is named **checks** and is in a subdirectory of the **payroll** directory on your drive C. You want the directory to be known as **pay** on the network. Enter the following command:

```
net share pay=c:\payroll\checks secret /R
```

The directory is known as **pay** on the network and has a password of **secret**. Other computers

NET SHARE

Command

can read the file but cannot write to the file to change it.

Sharing your printer

In this example, you want to share your high-speed printer named **LPT1** with other network users. You want the printer to be known as **hsprt** on the network. Enter the following command:

```
net share hsprt=lpt1 secret
```

The printer is available to other network computers as **HSPRT** and has a password of **secret**.

Note: You could have used **prn** instead of **lpt1**.

Sharing a printer attached to a communications line

In this example, Sam wants to share his letter-quality printer with other network users. The printer is attached to the first Asynchronous Communications Device Adapter port (**COM1**) of his computer. Sam enters the following command:

```
net share lqprt=com1 secret
```

Note: You could have used **aux** instead of **com1**.

Then, Sam enters the following command so that he can use the printer as his **LPT3**:

```
net use lpt3 \\sam\lqprt secret
```

The printer is available to other network computers as **LQPRT** and has a password of

NET SHARE Command

secret. You should use NET USE so that you can use the printer on your computer. For example, if TOM is the computername for your computer, and you want to use SAM's LQPRT as your LPT2, enter the following command:

```
net use lpt2 \\tom\lqprt secret
```

You can also share a serial printer as a parallel device by using the DOS MODE command. You can redirect any parallel printer (LPT1, LPT2, or LPT3) to any serial printer (COM1 or COM2) and then share the serial printer as a parallel printer.

Example

```
MODE COM1:9600,0,8,1  
MODE LPT3:=COM1  
NET START SRV . . .  
NET SHARE FASTPRT=LPT3:
```

This is the recommended method of sharing a high-speed serial printer. PC LAN can print faster to a parallel printer than it can to a serial printer. By redirecting LPT3 to COM1, the serial printer attached to COM1 prints faster.

Stop sharing

In these examples, you want to stop sharing the disk, directory, and printer that you shared in the preceding examples. Enter the following commands:

```
net share diskc /d  
net share pay /d  
net share lqprt /d
```

NET SHARE Command

You want to also quit using the printer over the network for yourself. Enter the following command:

```
net use lpt3 /d
```

Other network users can no longer use your disk, directory, or printer.

NET START Command

Purpose

The NET START Command starts the Server, Messenger, Receiver, and Redirector configuration. NET START is the first command that you enter to begin using PC LAN.

Note on Usage

You can use NET START only once after you start DOS. If you try to enter the command more than once after you have started DOS, you see an error message. See "Choosing a PC LAN Program Configuration" on page 6-5 for more information about the configurations and memory requirements.

Format

Starting PC LAN Configurations

NET START *configuration computername*
[/parameters] [. . .]

Syntax

configuration PC LAN configuration you want to start. You can use the following to specify the configuration:

RDR or REDIRECTOR
RCV or RECEIVER
MSG or MESSENGER
SRV or SERVER

NET START Command

See the “Choosing a PC LAN Program Configuration” on page 6-5 to help decide which configuration to start:

If you are going to use TopView you must start the Redirector configuration.

computername Name of your computer

parameters Additional command information.

The parameter defaults have been chosen to provide good performance for most users. Other values should only be selected for configuration needs or after reviewing the information in Chapter 12.

If you started the **REDIRECTOR**, the **RECEIVER**, the **MESSENGER**, or the **SERVER**, you may want to specify the following parameters:

/SRV:n Defines the maximum number, from 1 to 31, of different computers that you can use (with NET USE) at one time. If you do not enter /SRV, the default for *n* is 2 (3 on a Server configuration).

If you select a value for /SRV that is greater than the default, you may affect the /SES parameter. Refer to the /SES parameter for more information.

/ASG:n Defines the maximum number, from 1 to 32, of different network devices and directories that you can use (with NET USE) at one time. If you do not enter /ASG, the default for *n* is 5.

NET START Command

/SES:*n* Defines the maximum number, up to 254, of NETBIOS sessions allowed on your computer. The required value for /SES is determined by the configuration and the value of other parameters as follows:

- /SRV + 1 for a Redirector.
- /SRV + 2 for a Receiver
- /USN + /SRV + 2 for a Messenger.
- /RDR + /USN + /SRV + 2 for a Server.

If you do not enter /SES, the default for *n* is:

- 9 for a Redirector or a Receiver configuration.
- The greater of 9 or /USN + /SRV + 2 for a Messenger.
- The greater of 9 or /RDR + /USN + /SRV + 2 for a Server.

If you do not change /RDR, /USN, and /SRV, the Server will use 16 sessions.

/CMD:*n* Defines the maximum number, up to 254, of NETBIOS commands that you can enter on your computer. The required value for /CMD is determined by the configuration and the value of other parameters as follows:

- 2 for a Redirector.
- 4 for a Receiver
- /USN + 4 for a Messenger.
- /REQ + /USN + 5 for a Server.

If you do not enter /CMD, the default for *n* is:

- 8 for a Redirector or a Receiver

NET START

Command

- The greater of 8 or $/USN + 4$ for a Messenger.
- The greater of 8 or $/REQ + /USN + 5$ for a Server.

If you do not change $/REQ$ or $/USN$, the Server will require 12 commands.

If you run an application that uses the network directly, you should increase the $/SES$ and $/CMD$ beyond the minimum value. The amount to add to $/SES$ and $/CMD$ minimum values should be described in your application manuals.

The values of $/SES$ and $/CMD$ must not be greater than the limits of the LAN Adapter.

The IBM LAN adapters are enabled using software device drivers or microcode that provide the NETBIOS Application Programming Interface (API). The configuration of the adapters can be done either by specifying external parameters or using an API function. Configuration options set the number of commands, sessions, and link stations that can be used by an adapter.

If there is no external method for adapter configuration and the NETBIOS API indicates the adapter is configured at NET START time with 6 sessions and 12 commands, then the PC LAN Program 1.2 will configure the adapter with the $/SES$ and $/CMD$ values.

If an external method exists to configure the LAN adapter, the PC LAN Program 1.2 will verify that the NET START $/SES$ and $/CMD$ parameters are not larger than those the NETBIOS API indicates the adapter will accept. If the $/SES$ or $/CMD$ values are larger, START processing fails with error message NET 074.

NET START Command

/NBC:*n* Defines the number, from 1 to 64, of network buffers. The default number of buffers is 4 for a Redirector, Receiver, or Messenger (2 for a Server or for computers with 128K-bytes or less memory). This parameter should be set to the value of the number of files that will be concurrently accessed over the network.

/NBS:*n* Defines the maximum size in bytes, from 512 to 32K-bytes, of the network buffer. The default size of the buffer is 4K-bytes.

Note: The maximum settings for the /NBC and /NBS parameters is determined by the following formula:

$$\text{/NBC} * \text{/NBS} \leq 32\text{K}$$

/PBx:*n* Defines the maximum size in bytes, from 80 to 16K-bytes, of the print buffer that is used for print files that you send to a network printer you are using.

NET START

Command

The x identifies the printer for which you are defining a buffer. You can use the following values for x :

- 1 LPT1 or PRN
- 2 LPT2
- 3 LPT3

The buffer size value n you use should be less than or equal to the value you use for the /RQB parameter of the Server you are going to use (or yourself if you are the Server and share PRN, LPT1, LPT2, LPT3). If the value is greater than the value for /RQB, then PB x - RQB bytes are not used.

The default for n is 1024 bytes (512 bytes for computers with 128K or less memory) for $x=1$ and 128 bytes for $x=2$ or $x=3$.

The buffer requires the memory in your computer that you specify as n .

If you are using three printers, you will not be able to specify 16K-bytes for each of the printers. The maximum value for each printer depends on the system configuration, the number of printers used, and the start parameters /ASG, /SRV, /NBC, /NBS and may be less for any given set of conditions.

You should use LPT1 when redirecting, unless the parameters are changed to allow LPT2 or LPT3 to perform equally.

If you started the **MESSENGER** or the **SERVER** configuration, you may want to specify the following parameters:

NET START Command

/MBI:*n* Defines the size in bytes, from 512 to approximately 60K-bytes, of the message buffer that is used to receive your messages. If you do not enter /MBI, the default for *n* is 1750 bytes.

The buffer requires the memory in your computer that you specify as *n*. Each message sent to you takes some memory overhead beyond the number of characters in the message. The overhead varies based on the size of the message. When choosing a /MBI:*n* value, make sure that you plan for this overhead.

Messages use the space reserved by /MBI as follows:

- For each message, an 85-character entry (5 control, 80 text) is created.
- For each 128 characters of text a 132 character entry (5 control, 128 text) is created.
- If the message is not a multiple of 128 characters long, the last entry will have less text.

For example:

- An 80-character message takes:
 $(5 + 80) + (5 + 80) = 170$ bytes
- A 1000-character message takes:
 $(5 + 80) + 7(5 + 128) + (5 + 104) = 1125$ bytes

Note: You can conserve memory by logging messages to a file. See the “Netlog” command. If you do this, specify /MBI to be a minimum value of 512.

NET START

Command

/TSI:*fb* Defines the time slice intervals in units for foreground (*f*) and background (*b*) tasks. The *f* and *b* are replaced by a value from 0 to 9. If you do not enter /TSI, the default is 54 (5 foreground intervals, 4 background intervals).

Use the following table to select a /TSI value:

/TSI Timer Value Ticks

0	1
1	2
2	3
3	5
4	7
5	11
6	15
7	21
8	28
9	36

Where each timer tick is 1/18.2 second long.

This parameter can be used to adjust the relative response time of remote requests versus the response time of local requests made on the Server computer.

You may want to use the following values:

- 00** No time slicing (optimum value for dedicated file or print server)
- 22** Even response for all requests
- 26** Good response for Server requests
- 62** Good response to the Server user

NET START Command

/USN:n Defines the maximum number of additional names and forwarded names (total), from 0 to 12, that you can have on your computer at one time. If you do not enter **/USN**, the default is one additional name or one forwarded name (in addition to your computer name). Each name that you use requires approximately 600 bytes of memory in your computer.

If you intend to start the **SERVER** configuration, you may want to specify the following parameters:

/CAC:n Defines the number of K-bytes to be used for buffering disk data. This parameter is valid only for the Server configuration. The default value is 112.

This parameter can be between 128 and 15232 if **/EXM** is specified, or between 16 and 360 if **/EXM** is **not** specified. If memory needs to be conserved, a value of 0 causes no buffering of disk data to occur. Performance will be affected if buffering is not used.

In general, a larger value will yield greater performance.

Notes:

1. If the **IBMCACHE.SYS** program is being used, specify **/CAC:0**.
2. If the **/CAC** parameter is non-zero, no other disk buffering (caching) product can be used. Unpredictable results will occur.

NET START

Command

/EXM Defines whether the **/CAC** buffers should be in Extended Memory or in standard PC memory. Extended Memory is hardware storage that is physically located above 1 megabyte. If this parameter is present, Extended Memory is used for the cache buffers. If this parameter is not present, standard PC memory is used. This parameter is **not** present as a default. There are no options on this parameter.

If the Server is being started on a Personal Computer model that has Extended Memory, then Extended Memory can be used for **/CAC** buffers.

There must be enough Extended Memory to hold the entire amount requested for **/CAC**.

Note: When Extended Memory is used by the PC LAN Program, no other usage can be made of Extended Memory (for example, VDISK). Therefore, **/CAC** should be set to the amount of Extended Memory installed.

/REQ:n Defines the number of concurrent workstation requests, from 1 to 6, that can be handled by a Server. If you do not specify **/REQ**, the default is 6.

The value of **/REQ** times **/RQB** (**/REQ * /RQB**) cannot be larger than 48K-bytes. The value for **/REQ** does not need to be greater than **/RDR**.

NET START Command

/RQB:*n* Defines the size in bytes, from 512 bytes to 32K-bytes, that the Server can use to accept network requests. The larger the size, the faster the network will run. If you do not specify /RQB, the default is 8K-bytes.

The value of /REQ times /RQB (/REQ * /RQB) cannot be larger than 48K-bytes.

/SHB:*n* Defines the size in bytes, from 512 bytes to 60K-bytes, of the buffer used by file sharing and block locking to keep account of all computers that have files opened and have portions of opened files locked. If you do not specify /SHB, the default is 2K-bytes. The memory required is the value of *n*.

/SHL:*n* Defines the maximum number (from 20 to 1000) of active locked ranges in files that you have shared with the network. If you do not specify /SHL, the default is 20. Each lock uses 14 bytes. You should be sure that: $(/SHB + (/SHL * 14) + \text{size of share command}) \leq 64\text{K-bytes}$

/PRB:*n* Defines the size in bytes, from 512 bytes to 16K-bytes, of the print buffer used to hold data being spooled to the printer. If you do not specify /PRB, the default is 2048 bytes. The memory required is twice the value of *n*.

The larger the value for /PRB, the less often background printing on the Server will pause to access the spooled print data.

/PCx:*n* Defines the maximum number of characters (1 to /PRB) to send from the print buffer (/PRB) to a printer in a single operation.

NET START

Command

The *x* identifies the printer for which you are defining the count. You can use the following values for *x*:

- 1 LPT1 or PRN
- 2 LPT2
- 3 LPT3

The value *n* identifies the number of characters to send to the printer in a single operation. If you do not specify a value for `/PCx`, the value of the `/PRB` parameter is used as the default.

You can use the `/PCx` parameter to control the relative response time given to the foreground application and the printer. For slow and moderate speed printers, the default `/PCx` value should be sufficient. For very high-speed printers (such as the IBM 3812 Pageprinter) the `/PCx` value can be modified to give better response time for foreground applications. For the IBM 3812 Pageprinter, a value in the range 100 to 200 should give a good balance between foreground activity and printing. The larger the `/PCx` value, the faster the printer will print. The smaller the `/PCx` value, the better your foreground response will be. Adjustments in increments of 50 should be sufficient.

`/PRP:n` Defines the priority for printing the contents of the background print buffer. You can use the following priorities for *n*:

- 1 low priority
- 2 medium priority
- 3 high priority (default)

NET START Command

Low priority gives the Server user's program more time. High priority gives printing more time.

Note: The combination of /PRB:512 and /PRP:3 are the optimum values for the IBM Color Printer and the IBM Graphics Printer. Different values may work better for other printers.

/SHR:*n* Defines the maximum number of devices (from 1 to 999) that you can share with NET SHARE at a time. If you do not specify /SHR, the default is 5.

The memory required is approximately the value of *n* multiplied by (310 + /SES) bytes.

/RDR:*n* Defines the maximum number (from 1 to 251) of concurrent network stations that can use the Server. The maximum allowable value of /RDR decreases as the /USN and /SRV parameters are increased, since the /USN and /SRV parameters use sessions. If you do not specify /RDR, the default is 10. The number of network stations is limited by the LAN adapter being used.

Remarks

The *computername* is your user name on the network and is the name used by other network computers to identify your computer. The *computername* also is used by the Messenger as the name from which messages are sent and as the name that can receive messages.

You must choose the configuration that you want to use when you enter NET START. The

NET START

Command

configuration requires memory in your computer. You should make sure your computer has enough memory to use the configuration you choose and still leave your computer with enough memory so that you can use your applications or programs.

Examples

Starting the Redirector

In this example, you want to use disks, printers, and/or directories that are on other network computers. You don't want to receive messages, but you do want to send messages. You want to use your first name as the *computername* (we use the name BARRY). Enter the following command:

```
net start rdr barry
```

The Redirector starts and your *computername* is BARRY. You can use up to 5 different devices and directories on 2 different network computers by entering NET USE. Any messages you send using NET SEND or the message editor are sent from BARRY.

Starting the Redirector with parameters

In this example, you have the same computer and want to do the same tasks as in the preceding example. But, you're going to be printing large files on the network printer that you use as your LPT1. Enter the following command:

```
net start rdr barry /pb1:4K
```

The Redirector starts and your *computername* is BARRY. You can use up to five different devices and directories on two different network computers by entering NET USE. Any messages

NET START Command

you send using NET SEND are sent from BARRY. Your computer will use a 4K-byte buffer to send your files to LPT1.

Starting the Receiver

In this example, you want to use disks, printers, and/or directories that are on other network computers. You want to also be able to receive and send messages and store messages in a file. You want to use your first name as the *computername* (we use the name BARRY). Enter the following command:

```
net start rcv barry
```

The Receiver is started and your *computername* is BARRY. You can use up to five different devices and directories on two different network computers by entering NET USE. Any messages you send using NET SEND are sent from BARRY. You can receive messages sent to BARRY.

Starting the Receiver with parameters

In this example, you have the same computer and want to do the same tasks as in the preceding example. But, you're going to be printing large files on the network printer that you use as your LPT1. You want to also use 8 devices from 6 different computers. Enter the following command:

```
net start rcv barry /pb1:4K /asg:8 /srv:6
```

The Receiver starts and your *computername* is BARRY. You can use up to eight different devices and directories on six different network computers by entering NET USE. Any messages you send using NET SEND are sent from

NET START

Command

BARRY. Your computer will use an 4K buffer to send your files to LPT1.

Starting the Messenger

In this example, you want to use disks, printers, and/or directories that are on other network computers. You want to also be able to receive and send messages for yourself and other usernames. You want to use your first name as the *computername* (we use the name BARRY). Enter the following command:

```
net start msg barry
```

The Messenger is started and your *computername* is BARRY. You can use up to five different devices and directories on two different network computers by entering NET USE. Any messages you send using NET SEND are sent from BARRY. You can receive messages sent to BARRY. You can also receive messages for one other user name on your computer by entering NET NAME.

Starting the Messenger with parameters

In this example, you have the same computer and want to do the same tasks as in the preceding example. But, you're going to be printing large files on the network printer that you use as your LPT1. You want to use eight devices from six different computers. You need to receive messages for five additional names. Enter the following command:

```
net start msg barry /pb1:8K /asg:8 /srv:6  
/usn:5
```

The Messenger starts and your *computername* is BARRY. You can use up to eight different

NET START Command

devices and directories on six different network computers by entering NET USE. Any messages you send using NET SEND are sent from BARRY. Your computer will use an 8K-byte buffer to send your files to LPT1. You can add five additional names to your computer for messages.

Starting the Server

In this example, you have a computer with 512K-bytes. Your computer has a fixed disk that you want to share with other network computers. You also have a printer that you want to share with other network computers. You want to be able to receive and send messages. You want to use your first name as the *computername* (we use the name BARRY). Enter the following command:

```
net start srv barry
```

The Server is started and your *computername* is BARRY. You can use up to five different devices and directories on two different network computers by entering NET USE. Any messages you send using NET SEND are sent from BARRY. You can receive messages sent to BARRY. You can also receive messages for one other user name on your computer by entering NET NAME. You can share up to five of your devices with network computers.

Starting the Server with parameters

In this example, you have the same computer and want to do the same tasks as in the preceding example. But, you're going to be printing large files on the network printer that you use as your LPT1. You want to use eight devices from six different computers. You need to receive

NET START

Command

messages for five additional names. You expect to use network directories for all of your work and want to have your requests processed quickly. You have a high-speed printer that will be used to print a lot of the files from other computers. You have most of the data files that other computers will be using, so you'll probably have a lot of files open and in use all the time. Enter the following command:

```
net start srv barry pbl:8K /asg:8 /srv:6  
/usn:5 /prb:8K /shr:30 /shb:16K /shl:500  
/cac:128
```

The Server starts and your *computername* is BARRY. You can use up to eight different devices and directories on six different network computers by entering NET USE. Any messages you send using NET SEND are sent from BARRY. Your computer will use an 8K-byte buffer to send your files to LPT1. You can add five additional names to your computer for messages. Your computer has six 8K-byte buffers in which to process your network requests. Your computer has an 8K-byte buffer in which to hold files that are waiting to be printed. You can share 30 devices and directories with the network. You can have up to 500 active locked ranges in files that are in the disks and directories that you share. Your computer has 128K-bytes of standard PC memory with which to buffer read data.

NET USE

Command

Purpose

Use the NET USE command to specify a device or directory on a network computer that you want to use or to stop using the devices or directories. You can also use NET USE to display a list of the network devices that you're using.

Use with

Server, Messenger, Receiver, Redirector

Format 1

Using a disk or directory as a local drive

```
NET USE d: \\computername\{path|shortname}  
[password]*
```

Format 2

Stop using a disk or directory as a local drive

```
NET USE d: /D
```

Format 3

Using a disk or directory

```
NET USE \\computername\{path|shortname}  
[password]*
```

Note: If you want to use a root directory as a local drive, enter the following:

NET USE

Command

```
NET USE [d:] \\computername
[password*]
```

Format 4

Stop using a disk or directory

```
NET USE \\computername\
{path|shortname} /D
```

Format 5

Using a printer

```
NET USE printname \\computername
\{shortname|printdevice}[ password*]
```

Format 6

Stop using a printer

```
NET USE printname /D
```

Format 7

Displaying the devices and directories you are using

```
NET USE
```

Syntax

d: Drive specifier which the network disk or directory will be known by on your computer. (A:, B:, C:, etc.)

Note: If you are using the CONFIG.SYS file that came on your PC LAN Program diskette, you can only use drive specifiers A through N. If you want to use the drive

NET USE Command

specifiers O through Z, you can change the LASTDRIVE command in your CONFIG.SYS file to define the range of letters that you want to use for *d*:

\\computername Name of the network computer that has the disk, directory, or printer that you want to use.

path Route to the directory you want to use in the format
[\\]*dirname*[*dirname*[. . .]

shortname Short name for the disk, directory, or printer

password Security name for the disk or directory

***** (asterisk) Prompt for a password

/D Stop using the disk, directory, or printer

printname DOS name for a network printer (PRN or LPT1, LPT2, or LPT3).

printdevice Device name by which DOS knows the printer you are using (PRN, LPT1, LPT2, LPT3, AUX, COM1, COM2, or an installable device driver name)

Remarks

If you enter NET USE without any parameters, a list of the network devices you are using and their device names on your computer is displayed.

If the device or directory was shared with a *shortname* for the path, you must specify the *shortname* instead of the path.

NET USE

Command

If the device or directory has a password, you must also specify the password. If you are using the menus, the password will not be displayed as you are typing it. You can specify * for the password if you are entering NET USE in a batch file and do not want to type the password in the file. You will be prompted for the password when the batch file executes. If you use * as the password from the command line, you will be prompted for the password. The password will not be displayed.

If you specify a device name *d*: such as A, B, C, etc. for the device or directory, the device or directory is known as that name on your computer. You should use a device name for a device that you don't have, such as E so that you do not lose the use of your own devices.

Note: If you are using an application that only recognizes drive A and drive B, you must use drive A and drive B to run these applications. Many applications developed for DOS 1.1 only recognize drive A and drive B.

If you are using an application that references a DOS device name (such as B or PRN) and you want to use a network device or directory for that application, you should give the network device or directory the name that is required by the application.

If you do not specify a device name *d*: such as A, B, C, etc. for the device or directory, the device is known as the path or *shortname* on your computer.

You can use /D to stop using a network device or directory.

If you share a printer named PRN, LPT1, LPT2, or LPT3, the PC LAN Program automatically

NET USE Command

does a system share and system use of the printer for you. For example, if you enter NET SHARE LPT1 or NET SHARE LQPRT=LPT1, the share command automatically generates two commands as follows:

```
net share _lpt1=lpt1
net use lpt1: \\servername\ _lpt1
```

The share and use entries can be displayed on the status lists.

Note: If you share a printer, you cannot USE a remote printer with the same name. For example, if you share LPT1, you cannot use a remote printer as LPT1.

If you delete a shared printer (NET SHARE LPT1 /D or NET SHARE LQTRT /D), the share delete command automatically deletes the system share and system use of the printer for you.

You are not allowed to delete the system share (NET SHARE_LPT1 /D). If you attempt to do so, you will get the following error message:

```
Net079: Cannot delete; System share
```

You are allowed to delete the system use (NET USE LPT1: /D), but the PC LAN Program will soon reconnect it. If reconnection succeeds, you will get the following message:

```
System printer(s) have been
deleted and reconnected
```

If reconnection fails, you will get the following message:

NET USE

Command

Net080: Unable to reconnect; All shared printers should be deleted

Therefore, if the system use of a printer has an error status, you are able to recover your system use of the printer, by using this reconnect operation.

Examples

Using a network disk as a local drive

You want to use a network disk named DISKC that is on a computer named SHEILA. The disk has a password of SECRET. You want to use the disk as your drive B (You only have one real drive on your computer). Enter the following command:

```
net use b: \\sheila\diskc secret
```

You can now use the network DISKC as your drive B. Each time you enter a command for drive B, you use the network disk.

Using a network disk

You want to use a network disk named DISKC that is on a computer named SHEILA. The disk has a password of SECRET. Enter the following command:

```
net use \\sheila\diskc secret
```

You can now use the network disk DISKC as the path \\SHEILA\DISKC. Each time you enter a command for the path \\SHEILA\DISKC, you use the network disk.

NET USE Command

Using a network directory as a local drive

You want to use a network directory with the name PAYROLL as your drive E. The directory is on a computer named SHEILA and has a password of secret. Enter the following command:

```
net use e: \\sheila\payroll secret
```

You can now use the network directory SHEILA as your drive E. Each time you enter a command for E, you use the network directory.

Using a network directory

You want to use a network directory with the name PAYROLL. The directory is on a computer named SHEILA and has a password of SECRET. Enter the following command:

```
net use \\sheila\payroll secret
```

You can now use the network directory \\SHEILA\PAYROLL as the path \\SHEILA\PAYROLL. Each time you enter a command for \\SHEILA\PAYROLL, you use the network directory.

For example, you could enter the following DOS TYPE command to see the contents of the file RECORDS:

```
type \\sheila\payroll\records
```

NET USE

Command

Stop using a network disk

You want to stop using the network disk
\\SHEILA\DISKC as your drive B. Enter the
following command:

```
net use b: /d
```

The network disk is no longer your drive B.

Stop using a network directory

You want to stop using the network directory
\\SHEILA\PAYROLL as your drive B. Enter the
following command:

```
net use b: /d
```

The network directory \\SHEILA\PAYROLL is
no longer your drive B.

Chapter 8. DOS Commands for the PC LAN Program

Introduction	8-3
APPEND Command	8-5
FASTOPEN Command	8-10
MODE Command	8-13
PERMIT Command	8-15

Introduction

You can use the APPEND, FASTOPEN, MODE, and PERMIT commands to:

- Specify alternative directories to be used when searching for files with extensions other than .BAT, .COM, and .EXE.
- Rapidly access recently opened files
- Change the mode of a network printer
- Temporarily permit another computer to use your disk, directory, or file

You may want to use APPEND to access a data file (file with an extension other than .BAT, .COM, or .EXE) located in another directory. Using the APPEND command removes the need for having the entire application and data files in the same directory. APPEND allows you to separate your programs from your data, while you call your applications from any subdirectory.

Note: If you are using DOS Version 3.30 you should use the DOS APPEND command instead of the PC LAN Program APPEND command. To do this, make sure that your DOS directory is before your PC LAN Program directory in your PATH statement.

If you are using DOS Version 3.30, you may want to use FASTOPEN to save time when accessing recently opened files.

You may want to use MODE if you are using a network printer and want to change the mode of operation of the printer.

You may want to use PERMIT if you want to temporarily share your disks, directories, or files with another network computer even though you

have not started the Server configuration on your computer. While the other computer is using your device or directory, your computer is busy and you cannot use it. For example, you may want to use PERMIT to give another computer a chance to copy a file on your computer.

Computers that use a disk or directory that you have shared with PERMIT can use the disk or directory in two ways:

1. By entering NET USE to use the disk or directory as long as necessary, and then entering NET USE with /D to delete the use of the disk or directory. You cannot use your computer until the other computer has entered NET USE with /D.
2. By entering one DOS command and specifying the drive specifier, short name, and/or path (as required) for your disk or directory. After the DOS command executes, the other user can no longer use the device or directory. You can use your computer again.

APPEND

Command

Purpose

The APPEND command is used with the DOS PATH command to locate files outside of the current directory. The APPEND command's subdirectories are searched for the data file; these data files may have any valid DOS extension, other than EXE, COM, or BAT.

Format

Specifying directories to be searched

```
APPEND [d:]path[:,d:]path...
```

Deleting the usage of the append command

```
APPEND ;
```

Displaying the list of appended directories

```
APPEND
```

Syntax

d: the drive specifier

path the directory path

APPEND

Command

Remarks

Each time you enter an APPEND command, it takes the place of the preceding APPEND command. The appended directories can be “local” directories on your computer, or they may be “remote” directories on a Server computer, or a combination of both.

Some applications read a file that was found in an appended directory and then write the file back out to disk. When the application writes the file to the disk, it writes the file in the current directory leaving the original copy unchanged.

The APPEND command requires approximately 2.5K-bytes of memory.

The APPEND command is included in your system if you use the PC LAN Program Installation Aid.

You can append as many directories as you can specify in a total of 128 characters.

If you are using the DOS ASSIGN command, the APPEND command must be entered before the ASSIGN command.

The search sequence for a specified file is:

1. Search the specified directory, or the current directory if the directory is not specified.
2. Search the directories indicated by the current APPEND command.

Note: The DOS COPY command does not use the path specified in the APPEND command. If the file is not found in the

APPEND Command

default directory, the DOS COPY command returns a **file not found** message.

Examples

Using the APPEND command for local files

The APPEND command allows you to have applications stored only once on your fixed disk and use those applications without going to the directory that contains the application.

In this example, you write letters that normally fall into several categories. You would like each letter category to be stored in its own directory depending upon the letter's content. You don't want to have all of your editors, word processors and spelling aid programs to be duplicated in each of these directories. You don't want to go through the trouble of copying each letter into the directory containing the application, editing the letter then copying it back to the directory that it is to be stored in.

Install your editing, word processing, and spelling aid applications in one directory (for example, called C:\TEXT). Define a directory for each of your letter categories. Always work in the directory that contains the letters. Before you invoke any word processing, editor, or spelling aid application, use the following commands once:

```
path c:\text  
append c:\text
```

Now you can use an application that was installed in C:\TEXT as if it were in your current directory. In fact, because you specified the device id (C: in this case), you can also do editing on your diskette drives or on drive D.

APPEND

Command

Using the APPEND command for remote files

In this example, we are using the same letters problem stated in the previous example, only now you want to have all of your programs stored once on the Server's machine. You would again use the PATH and APPEND commands to access the Server's applications. The only difference is that you first have to connect to the Server's directory that contains the applications.

Install your editing, word processing, and spelling aid applications in one directory located on the Server's machine. In this example, Server1 is the name of the machine, and the directory is called C:\APPS\TEXT. The Server would then share the C:\APPS\TEXT directory by using the following command:

```
net share apps=c:\apps /r
```

You as a remote user would use the Server's shared directory by using following command:

```
net use n: \\server1\apps
```

Define a directory for each of your letter categories. Always work in the directory that contains your letters. Before you invoke any word processing, editor, or spelling aid application, use the following commands once:

```
path n:\text  
append n:\text
```

APPEND Command

You can now use an application that was installed in the Server's C:\APPS\TEXT directory as if it were in your current directory. In fact, because you specified the device id (N: in this case), you can also do editing on any of your diskette or fixed disk drives.

FASTOPEN

Command

Purpose

DOS locates files by searching each directory in the path to the file each time the file is accessed. On fixed disks with complex directory structures, this can take a large amount of time. FASTOPEN stores in memory the location of directories and recently opened files. When accessing a file, FASTOPEN searches the memory list first; if the file is in the list, it is found very quickly.

Format

`[d:][path]FASTOPEN d:[= nnn] . . .`

Remarks

Specify the parameters:

`[d:][path]` before FASTOPEN to specify the drive and the path that contain the FASTOPEN command file.

d: to specify the drive to process. Any fixed disk drives may be used. Drives defined by JOIN, SUBST, or ASSIGN may not be used. Network drives may not be used.

nnn to specify the number of directories or file entries to remember for the drive specified as *d*. If the value is not provided, the default is 34. (The minimum is 10 and the maximum is 999.) The sum of all *nnn* cannot be greater than 999. If *nnn* files are accessed on a drive. The least recently accessed file is removed from the list

FASTOPEN Command

and replaced by the most recently accessed file. The value *nnn* should be bigger than the system's deepest level of subdirectory. For example:

```
c:\dir1\dir2\dir3...\dir10
```

shows that DIR10 is the deepest level subdirectory and the value for *nnn* should be greater than 10.

The *d:[=nnn]* parameter may be repeated for each disk on your computer.

FASTOPEN can be used only once. All drives must be defined the first time FASTOPEN is used. Normally FASTOPEN is placed in the AUTOEXEC.BAT file.

```
AUTOEXEC.BAT
fastopen c:=100
.
.
.
copy c:\dir1\dir2\dir3\myfile1
copy c:\dir1\dir2\dir3\myfile2
```

On the first copy, the directories DIR1, DIR2, and DIR3 are located and remembered; MYFILE1 is also remembered. On the second copy, directories DIR1, DIR2, and DIR3 are found in the FASTOPEN list and do not need to be found on the disk; MYFILE2 is now remembered.

Note: The number *nnn* is not related to the number of files specified in "FILES=" command.

The optimal number of files specified for FASTOPEN varies depending on your usual operations. If you specify the

FASTOPEN

Command

minimum number of 10, you may not fully and efficiently utilize the FASTOPEN command. If you specify the maximum value of 999, you may have overhead to search through the information stored in memory to find the desired file. To store information on each of the *nnn* directories or files, 35 bytes of system memory are required

MODE Command

Purpose

You can use the MODE Command to set the horizontal character spacing and vertical line spacing of a network printer. See the *DOS Reference* for a complete description of the MODE command.

Format

Changing the mode of operation of a network printer

MODE LPTy:[n][,[m]]

Syntax

- y* printer number (1, 2, or 3 only)
- n* characters printed in a horizontal line (80 or 132)
- m* lines printed in a vertical inch (6 or 8)

Remarks

You can only use MODE to set the mode of operation for parallel printers LPT1, LPT2, and LPT3. If you do not use the *n* or *m* parameters or if you use incorrect values for *n* or *m*, the existing value for the parameter is used. The default for *n* is 80 characters per horizontal line. The default for *m* is 6 lines per vertical inch.

MODE Command

If you are using MODE to change the mode of operation on a printer you are using on the network, you must first enter NET START and start the appropriate PC LAN programs. Next, you must enter NET USE and give the printer a *printname* of LPT1, LPT2, or LPT3 on your computer. Then, you can use MODE to change the mode of operation of the printer. Modes set before NET USE do not take effect after NET USE.

Example

Changing the mode of a network printer

In this example, you're using a network printer as your LPT1. You want to print a file on the printer in condensed type (small type). Enter the following command:

```
mode lpt1:132,8
```

Note: If you use this form of the MODE command,

```
[d:][path]mode LPT#[:] = COMn
```

and if you want to share LPT# and have print redirected to COMn, you must issue the mode command before you start the network. Also, if you are using the MODE command to initialize the Asynchronous Communications Adapter for a serial printer that is being shared on the network, do not specify the P option.

PERMIT Command

Purpose

The PERMIT command allows a computer on the network to act as a temporary, dedicated file Server to a single network user. Printers and other peripherals may not be shared using the PERMIT command, only disks and directories. A network user accesses the permitted disk or directory with the NET USE command. When use of the permitted disk or directory is stopped by the network user, the PERMIT command terminates and returns to DOS.

The PC LAN Program does not have to be started for the user to invoke PERMIT. The PERMIT command will work whether or not the network has been started.

Format 1

**Permitting a disk or directory with a
shortname**

```
PERMIT shortname = [d:][\][path]  
[ /R | /W | /RW | /WC | /RWC ]  
{ computername1 | * } computername2
```

Format 2

**Permitting a disk or directory without a
shortname**

```
PERMIT \[path][ /R | /W | /RW | /WC | /RWC ]  
{ computername1 | * } computername2
```

PERMIT Command

Syntax

shortname Is an equivalent name (alias) for the disk or directory to be shared. This must be known by the user who wants to access the specified disk or directory, as it is part of the network path specified in the NET USE command.

d: Drive specifier A:, B:, C:, etc.

path Is a valid DOS path to the directory to be shared in the form:
[\\][*dirname*][*dirname*[. . .]]

/R Read-only access

/W Write access

/RW Read-Write access

/WC Write-Create-Delete access

/RWC Read-Write-Create-Delete access

/RWC is the default if you do not specify an access

computername1 Name of the computer on the network that you want to share your disk, directory, or file with.

***** Any computer can use your directory, disk, or file. Only one computer can use it at a time.

computername2 Name of your computer on the network. If you've started the network, this name must not be the same name you gave your computer.

PERMIT Command

Remarks

If you do not specify *d:*, the default drive is used.

Once the PERMIT command is invoked on a computer to allow disk or directory sharing, the computer is dedicated to PERMIT and cannot be used for other foreground tasks until either:

1. A network user has accessed and relinquished use of the disk or directory.

or

2. CTRL-BREAK has been pressed to terminate the PERMIT command. This may be done at any time, even though a user has begun to use your shared disk or directory.

If you've used NET START to specify a computer name for your computer, you must specify a different computer name with PERMIT. The computer name specified with the PERMIT command will be active only as long as the command is running. Once PERMIT terminates, that computer name no longer exists on the network.

Other computers that want to use your disk or directory should do *one* of the following:

- To use the disk or directory for as long as necessary, the other computer can enter the correct NET USE command. You cannot use your computer until the other computer enters NET USE with /D to stop the use of your disk or directory.
- To use the disk or directory for one DOS command only, the other computer can enter the DOS command at the DOS prompt, using

PERMIT Command

one of the following formats to specify the disk or directory to be used in the command:

`\\computername\shortname`

(if you used a short name for the disk, directory, or file)

`\\computername\[path\]filename[.ext]`

(if you specified a path to the directory or file)

After the DOS command executes, the other computer can no longer use the device or directory. You can use your computer again.

Note: Not all of the DOS commands work with a disk you're using through PERMIT. When using PERMIT under TopView, do not connect (NET USE) to this PERMIT from the same machine.

Examples

In the following examples, computer DIXON is using the PC LAN Program and has started the Redirector configuration. The computer name MIKE is used by the PERMIT command on a computer that is currently not using the PC LAN Program.

1. In this example, computer MIKE wants to share his entire disk C with computer DIXON. The following can be entered on computer MIKE:

```
permit \ DIXON MIKE
```

On computer DIXON, enter the following to use the shared disk as drive E:

PERMIT Command

```
net use e: \\MIKE
```

Computer DIXON now has read, write, and create access to the entire fixed disk C on computer MIKE.

2. In this example, computer MIKE wants to share his subdirectory PUBLIC as read-only access with computer DIXON. The following can be entered on computer MIKE:

```
permit pub=c:\PUBLIC DIXON MIKE /r
```

On computer DIXON, enter the following to use the shared disk as drive E:

```
net use e: \\MIKE\pub
```

Computer DIXON now has read-only access to subdirectory PUBLIC and all its subdirectories on computer MIKE.

3. In this example, computer MIKE wants to share his current directory with computer DIXON. The following can be entered on computer MIKE:

```
permit current=c: DIXON MIKE
```

On computer DIXON, enter the following to use the shared disk as drive E:

```
net use e: \\MIKE\current
```

Computer DIXON now has access to the current directory on computer MIKE and all its subdirectories.

4. In this example, computer MIKE wants to share his directory RESPONSE with any

PERMIT

Command

network user. The following can be entered on computer MIKE:

```
permit \RESPONSE * MIKE
```

To use the shared directory, any network user may enter the following:

```
net use e: \\MIKE\RESPONSE
```

In all of the above examples, use of the shared disk or directory by the remote station is stopped (deleted) by entering:

```
net use e: /d
```

At this point, the PERMIT command will complete and return to the DOS prompt on computer MIKE.

All of the above examples would be valid even if the PC LAN Program were started on computer MIKE, as long as the name MIKE had not been previously used anywhere on the network.

Chapter 9. CONFIG.SYS

Commands Used with the PC LAN Program

Introduction	9-3
BUFFERS Command	9-6
FCBS (File Control Blocks) Command .	9-8
FILES Command	9-11
LASTDRIVE Command	9-13

Introduction

A CONFIG.SYS file is a DOS file that contains special commands that help tailor the way you want to use your computer's memory with DOS. If you don't have a CONFIG.SYS file, that means that you're using the default values that DOS automatically sets up for you.

When you start DOS, it searches the directory of the drive or directory from which it was started for the CONFIG.SYS file. If DOS finds CONFIG.SYS, it reads the file and executes the commands within the file. When you installed the PC LAN Program, you installed a CONFIG.SYS file. The CONFIG.SYS file that you installed with the PC LAN Program tailors your computer's memory so that you can share and use devices and directories more efficiently on the network.

If you installed the PC LAN Program using the PC LAN Program Installation Aid and you already had a CONFIG.SYS file, a CONFIG.NIA file was created which contains the required DOS commands needed for efficient network operation. These commands should be added to your CONFIG.SYS file.

If you don't have a CONFIG.SYS file, you may want to create one. If you do have a CONFIG.SYS file, you may want to edit your CONFIG.SYS file to further tailor DOS for your computer. You may want to change the values in the commands that the file already contains, add commands for the PC LAN Program, or add commands that are not specifically for the PC LAN Program. All of the CONFIG.SYS commands are shown in the *DOS Reference*. Only the CONFIG.SYS commands that are for the PC LAN Program are shown in this chapter.

Notes:

1. If a CONFIG.SYS command is not included in the CONFIG.SYS file, the default value for the command is used.
2. If the same CONFIG.SYS command appears more than once in the CONFIG.SYS file, only the last occurrence is used by DOS.

Edit CONFIG.SYS Using EDLIN

1. At the DOS prompt, type the drive letter of the drive you use to start the system.

Note: If you are using a diskette-based system, enter the drive that contains the DOS diskette.

2. Type:

```
edlin config.sys/b
```

3. Type:

```
1L
```

EDLIN will list the entries already in your CONFIG.SYS file.

4. To change the entries:
 - Type the number of the line you want to change and press enter.
 - Type the information and press enter.

5. To add entries:

- Type:

i l

press enter.

- Type the information and press enter.
- Add the next entry or press Ctrl-Break.

6. To delete an entry:

- Type the number of the line you wish to delete followed by **d** and press enter.

7. When you have completed all your changes type:

E

The CONFIG.SYS file has been changed, but the values for the commands are not in effect until you start DOS again.

BUFFERS

Command

Purpose

Use the BUFFERS command to indicate to DOS the number of disk buffers to allocate in memory when you start DOS.

Format

BUFFERS = *xx*

Parameters

xx Number of buffers from 1 to 99
See the *DOS Reference* for the default if it is not specified in CONFIG.SYS.

Remarks

Disk buffering usually improves overall performance. On a Server computer, you should set the number of buffers to 20 regardless of whether or not you make use of the disk cache (/CAC). See Chapter 12, "IBM PC LAN Performance Considerations" for more information.

BUFFERS

Command

If you installed the PC LAN Program on a fixed disk, your CONFIG.SYS file contains
BUFFERS = 20.

Note: The **BUFFERS = xx** command has no effect on network performance when used on nonserver computers.

FCBS (File Control Blocks) Command

Purpose

Use the FCBS command to specify the number of file control blocks (FCBs) that can be open concurrently.

Format

FCBS = *m,n*

Parameters

- m* Total number of files that can be open at one time. The default value is 4 (16 when the PC LAN Program is started); the range is 1 to 255.
- n* Number of files opened by FCBS that cannot be closed automatically by DOS if a program tries to have more than *m* files open at one time. The first *n* open files are protected from being closed. The default value is 0 (8 when the PC LAN Program is started); the range is 0 to 255.

Remarks

The FCBS command is only valid when file sharing is loaded. Some application programs use file control blocks to create, open, delete, read, and write to files. DOS keeps track of the least recently used file control block (FCB). If the program tries to open more than *m* files, the action DOS takes depends on whether file sharing is loaded. The following sections

FCBS (File Control Blocks) Command

describe the action DOS will take if a program tries to open more than m files.

With Sharing: On a Server configuration (file sharing), when a program tries to open more than m files, DOS closes the least recently used FCB and opens the new file. Note that the first n files are not included in the list of files that DOS tracks for the least recently used FCB. The first n files are protected from being closed this way. If a program tries to read or write to a file that has been closed because it is the least recently used FCB, DOS issues the message "FCB not available."

On the network, most remote computers open files with FCBs. If the file is on a Server computer, the file also is opened at the Server using file handles. The remote computer may receive messages from the PC LAN Program such as:

NET 367: No more files

or

NET 384: FCB unavailable.

Or, the remote computer may receive messages from the application such as:

Error opening file

or

Directory is full.

The messages mean that the Server is out of file handles or that the remote computer is out of FCBs.

Without File Sharing: If sharing is not started, the number of files that can be open at the same time is not limited.

FCBS (File Control Blocks) Command

Notes:

1. The value of m must be greater than or equal to the value for n .
2. If a program receives critical errors because DOS closed FCB files, you should increase the value of m to prevent the errors from occurring.
3. If a program uses two or more different FCBS to refer to the same file, DOS only counts this as one FCB used.
4. If you set m equal to n , files cannot be closed by DOS if a program tries to open more than m files. If a program tries to open more than m files, DOS will not open the new file. You should not set m equal to n .

Example

Setting the FCBS

In this example, you want to set the total number of FCB files that can be open at one time to 128 and the number being protected to 64. You would include the following command in your CONFIG.SYS file:

```
fcbs=128,64
```

FILES

Command

Purpose

Use the FILES Command to indicate to DOS the maximum number of files and handles on your shared disks or directories that can be open at one time. When you start DOS, the value *xxx* of the FILES = *xxx* command tells DOS how much memory to allocate to maintain required information about the opened files. See the *DOS Technical Reference* for a complete description of FILES.

Format

FILES = *xxx*

Parameters

xxx Number of files and handles that can be opened, from 8 to 255 (default is 8)

Remarks

The FILES command indicates the maximum number of all open concurrent file handle calls. If you exceed the value of *xxx*, you receive an error. On a Server computer, you may want to increase the value for FILES to increase the number of files that can be opened at one time on the Server computer.

The value specified for FILES = must be large enough to provide for the programs run on the Server as well as for the programs on the network using the Server.

FILES

Command

If you are using the DOS 3.3 FASTOPEN command, the value you specify for FILES= should also be used for FASTOPEN. See "FASTOPEN Command" on page 8-10.

On the network, most remote computers open files with FCBs. If the file is on a Server computer, the file also is opened at the Server using file handles. The remote computer may receive messages from the PC LAN Program such as:

NET 367: No more files
or
NET 384: FCB unavailable.

Or, the remote computer may receive messages from the application such as:

Error opening file
or
Directory is full.

The messages mean that the Server is out of file handles or that the remote computer is out of FCBs.

If you installed the PC LAN Program on a fixed disk using the NIA, your CONFIG.SYS file contains FILES=100. If you installed the PC LAN Program on diskette, your CONFIG.SYS file contains the default, FILES=8.

LASTDRIVE

Command

Purpose

Use the LASTDRIVE command to indicate to DOS the maximum number of virtual and real drives that you can use at one time. When you start DOS, LASTDRIVE tells DOS how much memory to allocate in order to maintain the required information about the drives.

Format

LASTDRIVE = *x*

Parameters

x Last virtual drive, from A to Z (default is E or five drives)

Remarks

You can use drive specifiers (*d:*) to refer to drives that you have on your computer and to refer to drives that you do not have on your computer but are using on the network. For example, you may refer to a network drive or directory as your E drive even though you don't have a real E on your computer. The network drive is called a *virtual* drive. DOS recognizes the characters A through Z as drive specifiers.

If you installed the PC LAN Program on a fixed disk or diskette, your CONFIG.SYS file contains the LASTDRIVE = N command.

LASTDRIVE

Command

If LASTDRIVE is specified in the CONFIG.SYS file to be less than the physically attached number of drives, the PC LAN Program uses the highest drive ID of physically attached drives as the highest drive ID allowed for the NET USE command.

Chapter 10. Managing the Server Computer

Introduction	10-3
Computers on the Network	10-4
Guidelines for Sharing	10-5
Sharing Disks and Directories ...	10-5
Sharing Printers	10-14
Pausing and Continuing Sharing	10-33
Backing Up and Restoring the Disk	10-34
Stopping the Network	10-35
Critical Errors on the Server Computer	10-35
Using the NET ERROR Command	10-38
Using the NET FILE Command	10-38
Additional Ways to Manage Security	10-39
Organizing the Server's Fixed Disk .	10-40
The Root Directory	10-43
The NETWORK Subdirectory ..	10-43
The APPS Subdirectory	10-44
The USER Subdirectories	10-46
The BATCH Subdirectory for the Server	10-48
The NETPATH Command	10-49
Subdirectories You May Want To Add	10-50
Installing Applications with the Installation Aid	10-51
Sharing Application and User Subdirectories	10-52
Installing Other Applications ..	10-56

Introduction

This chapter tells you more about managing the Server computer and organizing the Server's fixed disk.

You should have already read the following chapters:

- Chapter 1, "Introduction"
- Chapter 2, "Installing Your Programs"
- Chapter 5, "Tasks You Can Do With the PC LAN Program"
- Chapter 6, "Getting Started With Commands"
- Chapter 7, "PC LAN Program Command Reference"
- Chapter 8, "DOS Commands for the PC LAN Program"
- Chapter 9, "CONFIG.SYS Commands Used With the PC LAN Program"

Computers on the Network

Local area networks give you the capability to share devices and information among a group of computers. You may share physical devices, such as a printer or a fixed disk, or information, such as a directory on a fixed disk that contains data.

A computer that shares devices or data with other computers on the network is called a Server. The Server owns the shared devices and data. A network may have several Servers.

The computers that use the shared devices and data are called remote computers. Remote computers use the shared devices and data as if the devices are theirs.

The Server computer can be a computer that you use regularly to do your work and also use as a Server. Or, the Server computer can be a dedicated Server, meaning that it is used only as a Server computer. No one uses it as a computer for their daily work.

In a network, a Server computer is usually the center of activity, because its devices and data are being used by many remote computers. In addition, someone may be using the Server as a personal computer for his work.

The speed of operations across the network is influenced by the speed with which the Server can process requests and the availability of memory and disk space on the Server. The computers you choose to use as Servers should provide as much memory, fixed disk space, and processing speed as possible.

Guidelines for Sharing

If you operate the Server computer, you need to understand and manage some or all of the following:

- Sharing disks and directories
- Sharing printers
- Pausing and continuing sharing
- Backing up and restoring the disk
- Stopping the network
- Handling critical errors on the Server
- Using the NET ERROR command
- Using the NET FILE command
- Providing security for shared devices.

Sharing Disks and Directories

You can share data from the Server by sharing directories from the Server's disk or by sharing the entire disk. Remote computers then can use the shared data and can use space on the Server's fixed disk to store their data in.

When to Share Disks and Directories

You should start the Server computer and share the disks and directories that remote users need for their work *before* the remote users start their computers. If the shared devices are not available when the remote users start their computers, the users receive errors.

Sharing With or Without a Network Name

You can share disks and directories by specifying the path to the disk or directory or by specifying a network name and the path to the disk or directory. If you share by specifying a path, remote users must know the complete path to use the disk or directory. If you share by specifying a network name and a path, remote users only need to know the network name. Specifying a network name and the path gives you more flexibility because you can change the path without affecting the remote users. Using a network name also allows you to specify different passwords and access rights to the data. Therefore, you can use a different network name for each remote computer and have more flexible security controls. Additionally, methods are available that will inhibit the display of the password on the screen. See "Security for Shared Disks and Directories" on page 10-9.

Example:

Suppose a Server named TOM has a directory named \PAYROLL\PAY84 on disk C. TOM could share it by entering the following command:

```
net share \payroll\pay84
```

Remote computers then use PAY84 as their drive E by entering the following command:

```
net use e: \\tom\payroll\pay84
```

Or, TOM could share PAY84 with a network name by entering the following command:

```
net share pay=c:\payroll\pay84
```

Remote users then use PAY84 as their drive E by entering the following command:

```
net use e: \\tom\pay
```

Now, suppose TOM no longer wants to share PAY84. Instead, he wants to share a new subdirectory for the 1985 payroll, C:\PAYROLL\PAY85.

TOM can share PAY85 by entering the following command:

```
net share \payroll\pay85
```

Remote computers have to know the new path, \PAYROLL\PAY85, to use the directory.

```
net use e: \\tom\payroll\pay85
```

But, TOM could share PAY85 as the network name PAY.

```
net share pay=c:\payroll\pay85
```

Even though TOM shared a different subdirectory, the remote computers don't have to know the new path. Because the network name is still PAY, they enter the same command that they previously entered to use the new directory.

```
net use e: \\tom\pay
```

Sharing Directories

Normally, you should share directories on your fixed disk so that you can control the parts of your disk that are shared. The contents of the directory, including the contents of any subdirectories in the directory, are available to the network.

Sharing an Entire Disk

You can share your entire disk with the remote computers by sharing the root directory of your disk. For example, if you wanted to share your drive C with the network, you could share the C:\ directory. Everything on drive C is available to the remote computers including any subdirectories that are on drive C. However, this is not advisable, as a remote user may inadvertently erase data files and render the server unusable by others.

Sharing a File

You may want to share a single file with a remote computer. However, the network only allows you to share disks and directories. So, to share a single file, you need to make a directory and put the file in the directory.

Sharing Diskette Drives

If possible, do not share diskette drives across the network. Sharing diskette drives can cause problems because:

- Diskettes may be write-protected
- Diskette drive doors can be left open.

These problems can result in data being lost.

To prevent this problem, you should not share diskette drives. If you must share diskette drives, be sure that the drive and diskette are ready for use by the remote computers. Also, do not share diskette drives when you can expect multiple users to use the shared drive at the same time.

Example: Suppose two remote computers, A and B are on the network. Both computers are using

a diskette drive from a Server computer. The diskette drive contains a write-protected diskette.

- Remote computer A writes data to the diskette drive. DOS on the Server stores the data in a buffer and returns a successful write to remote computer A.
- Remote computer B writes data to the same diskette. DOS on the Server needs a buffer to store the data in. So DOS tries to write the data that's in the buffer (from remote computer A) to the diskette and empty the buffer for use by remote computer B. DOS gets a Write Protected critical error when it tries to write the data because the diskette in the drive is write-protected. DOS returns the critical error to the computer that's trying to write data when the error occurs, remote computer B (not remote computer A).
- Remote computer B responds "Abort" to the error.
- The buffer is deleted.
- The data in the buffer is lost. However remote computer A does not know that the data is lost because it never received the error message.

Security for Shared Disks and Directories

To ensure security for each of the directories on the Server, you can assign a password to each subdirectory when you share it. Only users who know the password can use the subdirectory.

You can specify a password for a disk or directory that you share. You should give the password only to the people that you want to let use the disk or directory. For example, if you want to share a user subdirectory named LINDAG with the remote computer user named Linda Gray, you may want to give the

subdirectory a password, such as PRIVATE. You can use the menus or the commands to share the subdirectory with a password. If you are using the menus, the password will not be displayed as you type it. If you are using commands, you could enter the following, for example:

```
net share lindag=c:\lindag private
```

If you put network commands in an AUTOEXEC.BAT file, you can use an asterisk (*) instead of the password. When the batch file runs, you'll be prompted to enter a password to go with the command. The password will not be displayed as you type it. You should use an asterisk instead of the password so that others can't look at your AUTOEXEC.BAT file and see the password.

For example, if you put the previous command in an AUTOEXEC.BAT file, you should replace PRIVATE with an asterisk, like this:

```
net share lindag=c:\lindag *
```

When you switch on your computer and your AUTOEXEC.BAT file executes, you would see the following:

```
net share lindag=c:\lindag *  
Enter a password:
```

You should enter PRIVATE at the prompt; for security reasons, PRIVATE will not be displayed.

If you are using menus and choose to save your network setup, your passwords are automatically replaced with an asterisk. You'll be prompted for the password.

Access Rights for Shared Disks and Directories

The PC LAN Program allows you to share a disk or a directory on your disk with an *access right* so that you can control how remote network computers use your disk or directory. The access right you assign allows you to specify what the remote computers can do to the information you have stored on the disk.

Access Rights for Remote Computers

Read-Only Access: Read-only (R) access means that the remote users can only view the information contained in these files. They can't make changes to the information. You should use Read-only access to share directories that you don't want changed.

Note: Remote users can copy files from a Read-only subdirectory to a Read/Write/Create subdirectory. Then, they can make changes to their copy in their own subdirectory.

Read/Write/Create Access: Read/Write/Create (RWC) access means that remote users have the same access rights that you normally have. Remote users can view the files, make changes to the files, create files, and delete files. You should use Read/Write/Create access to share directories that you want remote computers to be able to change.

Write-Only Access: Write-only access means that remote users can only modify the information in the files, but they can't view the information that's already in the files. Use Write-only (W) access with applications specifically designed for use on a network.

Write/Create Access: Write-Create access means that remote users can change the information in the file, delete files, and create

new files, but they can't view the contents of existing files. Use Write-Create (WC) access with applications specifically designed for use on a network.

Read/Write Access: Read/Write access means that remote computers can view and make changes to existing files, but they can't create new files or delete existing files. Use Read/Write (RW) access with applications specifically designed for use on a network.

Sharing the Same Disk or Directory With Different Access Rights

You may want to share the same subdirectory with more than one remote user, but want to give different access rights to different remote users.

To share the same subdirectory with different access rights, you have to share the subdirectory more than once. Each time you share the subdirectory, you give the subdirectory a different network name, password, and access right. You then tell each remote computer the network name that you want it to use for the subdirectory. Sharing the same directory more than once gives you more flexibility to control the way the files in your subdirectories are used by different remote computers.

Example: Suppose you have a subdirectory named LETTERS that you want to share with two remote computers named LEWK and LINDAG. LETTERS contains form letters. LEWK needs to copy the form letters to his disk so that he can send them to his customers. LINDAG needs to add some new form letters to the subdirectory and delete some of the old form letters.

For LEWK, you could share the subdirectory as FORMS and give it Read-only access.

```
net share forms=c:\letters /r
```

LEWK can use FORMS and will be able to copy the letters to his private subdirectory.

For LINDAG, you could share the subdirectory as LETTERS and give it Read/Write/Create access.

```
net share letters=c:\letters /rwc
```

LINDAG can use LETTERS and will be able to add new letters, delete old letters, and edit existing letters.

Access Rights for the Server

Even if you are sharing the Server's disks and directories, you can also use the Server to do work while the remote computers are using it.

The access rights that you specify when you share a disk or directory do not affect you at the Server computer. You have Read/Write/Create access to the files in the shared disks and directories. You can use the shared disk or directory as you normally would.

However, because you have Read/Write/Create access to all of the disks and directories, remote users cannot access files while you are using them. To change the access that you have to the files in the directory, you must use the DOS Attribute command.

Changing the Access Rights with the DOS Attribute Command

To change the access rights that the Server has to files, you can use the DOS Attribute (ATTRIB) command. The ATTRIBUTE command allows you to change the access right to Read only or to Read/Write/Create. For example, if you wanted to change the Server's access rights to each file in the BATCH subdirectory to read-only access, you would enter the following DOS commands:

```
cd c:\batch
```

(This makes BATCH your current directory.)

```
attrib +R *.*
```

(This changes the access rights to all of the files in the BATCH subdirectory to read-only.) After you enter the ATTRIB command, the Server's access rights are changed.

Note: The PC LAN Program Installation Aid changes the access rights of the APPS subdirectory to Read-only for you.

Sharing Printers

The PC LAN Program also allows you to share the Server's printers. The remote computers can send files to be printed on the shared printers. The Server can share up to three printers at one time.

The Server can share any parallel printer (LPT1 or PRN, LPT2, or LPT3), any serial printer (AUX or COM1, COM2), or an installable device driver. Files that are sent to be printed on a Server's printer are put in a print queue for the Server. The Server can check or change the print queue, but remote computers can only check the print queue.

Sharing With or Without a Network Name

You can use a DOS name to share a printer or you can share a printer by specifying the DOS name and a network name. Sharing with a DOS name and network name gives you flexibility because you can change the printer that you share without telling everyone the new DOS name.

Example: Suppose you have been sharing your LPT1 as PRINT1.

```
net share print1=lpt1:
```

Now, you have a new printer as your LPT2 that's faster than LPT1. You want to share LPT2 instead of LPT1. All you have to do is share LPT2 as network name PRINT1 instead of sharing LPT1.

```
net share print1=lpt2:
```

Even though you've switched printers, the remote computers still only need to know the name PRINT1. They don't have to change the devices that they use.

Allowing the Server to Use a Shared Printer

If you share a parallel printer (LPT1 or PRN, LPT2, or LPT3), the PC LAN Program automatically enters a NET USE command for you so that you can use the printer. Files that you send to the printer (LPT1 or PRN, LPT2, or LPT3) are automatically put in the print queue.

But, if you share a serial printer (AUX, COM1, or COM2) or an installable device driver, the PC LAN Program does not automatically use the printer. Your print files are not automatically sent to the print queue. You must enter a NET USE command and use the serial printer through the network as if it were a parallel printer.

If you don't use a serial printer that you've shared as a parallel printer, your files will be intermixed with files sent to the printer by remote computers. The Server will receive printer errors.

Example: Suppose TOM has a parallel printer named LPT1 and a serial printer named COM1.

TOM shares COM1 as the network name
LTRPRT:

```
net share ltrprt=com1:
```

TOM also wants to use the printer for his work. To do this, TOM has to use COM1 as if it is a parallel printer on his computer named LPT2.

```
net use lpt2: \\tom\ltrprt
```

You can also share a serial printer as a parallel device by using the DOS MODE command. You can redirect any parallel printer (LPT1, LPT2, or LPT3) to any serial printer (COM1 or COM2) and then share the serial printer as a parallel printer.

Example

```
MODE COM1:9600,0,8,1  
MODE LPT3:=COM1  
NET START SRV . . .  
NET SHARE FASTPRT=LPT3:
```

This is the recommended method of sharing a high-speed serial printer. PC LAN can print faster to a parallel printer than it can to a serial printer. By redirecting LPT3 to COM1, the serial printer attached to COM1 prints faster.

Stop Sharing a Network Printer

When you stop sharing a printer, the printer is no longer available for use on the network. However, files that are already in the print queue continue to be printed until the print queue is empty.

If you want to send files to the printer, you should also pause printing on the printer. Then, you can use the NET PRINT command, the

menus, or the DOS COPY command to send your files to the printer.

Security for Printers

You can specify a password for a printer that you share and tell the password only to people who need to use the printer. For example, if you want to share your LPT1 as PRINT1 on the network, you could give it a password such as SECRET. You can use the menus or the commands to share the printer with a password. If you are using the menus, the password will not be displayed as you type it. If you are using commands, you would enter the following, for example:

```
net share print1=lpt1: secret
```

If you put network commands in an AUTOEXEC.BAT file, you can use an asterisk (*) instead of the password. When the batch file runs, you'll be prompted to enter a password to go with the command. You should use an asterisk instead of the password so that others can't look at your AUTOEXEC.BAT file and see the password.

For example, if you put the previous command in an AUTOEXEC.BAT file, you should replace SECRET with an asterisk, like this:

```
net share print1=lpt1: *
```

When you switch on your computer and your AUTOEXEC.BAT file executes, you would see the following:

```
net share print1=lpt1 *  
Enter a password:
```

You should enter SECRET at the prompt; for security reasons, SECRET will not be displayed.

If you are using menus and choose to save your network setup, your passwords are automatically replaced with an asterisk. You'll be prompted for the password.

Using Separator Pages on Shared Printers

You can use a separator page with a shared printer so that you can easily identify files that are printed on the printer. The default for using a separator page is OFF. If you want to use a separator page, you must specify ON for the separator page through the menus or with the NET SEPARATOR command.

We've provided two separator pages named PQ.SEP and PQ.OEM. Use PQ.SEP as your separator page if you're using an IBM Color Printer and you want all of the printer controls reset between each file that's printed. Use PQ.OEM if you have another printer and you don't want any printer controls reset. You may want to edit PQ.OEM and add the printer controls for your printer to the page.

If you need to print foreign language characters in your separator page, you should issue the DOS GRAFTABL command before starting PC LAN.

Creating Separator Pages

You can create your own separator page only if you are sharing your devices with the network.

You'll need to use an editor, such as Personal Editor, to create and edit your separator page file. If you don't have an editor, you can use EDLIN or the DOS COPY CON command to create and edit the file.

You should know what information you want printed on the separator page before you create it. For example, you may want to have the following information on the page:

- The network name of the computer that sent the print file to your printer
- The date that the file was printed
- The time that the file was printed
- Other information such as the name of your company, a logo, or your name.

The following instructions tell you how to create the separator page file:

1. You should be at the DOS prompt.

Note: If you want your separator page to be in the same directory as PQ.SEP, you should be at the DOS prompt for the C:\NETWORK subdirectory.

2. Start your editor.
3. Create your separator page file on your fixed disk. Name the file any name except PQ.SEP or PQ.OEM. For example, you could name the file PRINT.SEP.
4. On the first line of the file at the first character position, type a character that you want to use as the escape character.

Hint: Use the @ character.

5. Type the characters to define the text and formatting for the separator page. See “Designing the Format for Your Separator Page” below for information about characters you can use to define the format of the separator page.

Note: You can type all of the characters on one line, or you can type them on different lines. Spaces are only allowed within a literal.

The separator page file has a limit of 512 bytes.

Save the file, and use the PC LAN Program menus or commands to start using the separator page file.

Designing the Format for Your Separator Page

To design a separator page, you create a file and then use special characters to define the text and format for the page.

The Escape Character: The first character you type in the separator page file is the *escape character*. The escape character lets the PC LAN Program know how to process the file. You should use a character that you don't plan to use anywhere else in the file. You can use any character as the escape character *except* a blank.

Note: In the following, @ is used as the escape character.

Next, you define the text and the formatting for the page. The following tells you the characters you can use to define and format the page.

- @Lstring** Prints a string of characters, where *string* is the string of characters you want printed.
- @F“filespec”** Prints the contents of another file (*filespec*) as a part of the separator page. It must be a fully qualified pathname, such as d:\path\...\filename.
- @D** Prints the current date.
- @T** Prints the current time.

- @N** Prints the network name. Use it, for example, to print the network name of the computer that sent the file to your printer.
- @I** Prints the print queue ID number for the file.
- @Hnn** Is used to do printer-specific controls. The *nn* is a hex printer control character. You can define the number of characters that you want to print on a line by specifying a hex value (*nn*). For example, you may want to print narrow characters so that you can fit more on a line. Use **@H0F** to print narrow characters, and **@H12** to print normal-width character.
- @O** Is used to end a line. You must specify where you want lines to end when the separator page is printed.
- @n** Is used to skip *n* lines; where, *n* is the number of lines you want to skip, from 1 to 9. You must specify where you want to skip blank lines when the separator page is printed.
- @B** Is used to specify block characters. Block characters are the larger characters that we printed “IBM PC LAN” with our on PQ.SEP separator page. Block characters can be narrow (single-width) or wide (double-width). For example, the following are single-width block characters:

```

** ** ** ** ** ** ** ** ** 
**** *** ** ** 
** ** **** ** **** ** ** 
** ** ** **** ** **** **** 
***** ** ** ** ** ** ** 
** ** ** ** ** ** ** ** ** 
** ** ** ** ** ** ** ** 

```

These are double-width block characters:

```

*****      *****      ****
****      **** ****      ****      *****
****      ***** ****      *****      ****
**** ***** **** *****      ****
***** **** ***** ****      ****
*****      **** ***** ****      ****
*****      ***** *****

```

If you don't specify any kind of character, the text is printed in normal-sized characters. If you specify block characters but don't specify a width, the characters are printed in single-width.

The maximum length of any string that can be printed in single-width block mode is 16. The maximum length for double-width block mode is 8.

@S Is used to specify single-width block characters. Specify **@S** *after* you've specified the **@B** for block characters.

Single-width block characters are printed until you turn off block characters or specify double-width block characters.

@M Is used to specify double-width block characters. Specify **@M** *after* you've specified the **@B** for block characters.

Double-width block characters are printed until you turn off block characters or specify single-width block characters.

@U Is used to turn off block characters. If you want to stop printing block characters, you must turn them off.

@E Is used to eject the page. When you want to go to a new page or when you end the separator page, you must eject the page from the printer.

The PQ.OEM separator page file is provided for printers that are not compatible with IBM Printers. If the standard (default) separator page file PQ.SEP is not compatible with your printer, use the PQ.OEM separator page file or create one for your printer.

You may also want to delete the PQ.SEP file and rename the PQ.OEM file (or your own separator page file) to PQ.SEP to print as the default separator page.

Here's the PQ.SEP file we used to define the text and format for the page:

```
@
@H1B@H32
@H1B@H39
@H1B@H43@H42
@H1B@H46
@H1B@H48
@H1B@H54
@H1B@H57@H00
@H1B@H49@H01
@H1B@H55@H00
@H1B@H6E@H00
@H1B@H2D@H00
@H1B@H37
@H1B@H43@H00@H0B
@H0F00
@H1B@H3000
@B0M@LIBM00
@B0M@LPC LAN00
@B0M@LPROGRAM00
@U@H12@L(C) Copyright IBM Corporation 1984,
198700
@B@H0F00
```

@4@S@0
@N@0
@4@M@0
@I@0
@4@H12
@U@0
@4@D@L @T@0
@E
@H1B@H32

In this separator page,

@ is the escape character

@H1B@H32 is for 6 lines per inch

@H1B@H39 is for cancel ignore end of paper

@H1B@H43@H42 is for 66 lines per page

@H1B@H46 is for emphasized off

@H1B@H48 is for double strike off

@H1B@H54 is for subscript/superscript off

@H1B@H57@H00 is for double width off

@H1B@H49@H01 is for data quality

@H1B@H55@H 00 is for bi-directional printing

@H1B@H6E@H00 is to set aspect ratio to 5:6

@H1B@H2D@H00 is to cancel underline

@H1B@H37 is to select character set 1

@H1B@H43@H00@H0B is to set 11 inches per page

@HØF@Ø sets a line length of 132 characters

@H1B@H3Ø@Ø is the printer setup string for the IBM color printer

@Ø means to return to the left margin of the next line

@B starts block characters

@M defines double-width block characters

@LIBM specifies that the string “IBM” should be printed

@Ø means to return to the left margin of the next line

@1 means to return to the left margin and skip one line

@LPC LAN specifies that the string “PC LAN” should be printed

@Ø means to return to the left margin of the next line

@LPROGRAM specifies that the string “PROGRAM” should be printed

@Ø means to return to the left margin of the next line

@U@H12 turns off block characters and specifies that normal-size characters should be used for printing

@L (C) Copyright IBM Corporation 1984, 1987 specifies that the string “(C) Copyright IBM Corporation 1984, 1987” should be printed

@Ø means to return to the left margin of the next line

@B@HØF starts block characters and defines a line length of 132 characters (narrow characters)

@Ø means to return to the left margin of the next line

@4 means to return to the left margin and skip four lines

@S means to print with single-width block characters

@Ø means to return to the left margin of the next line

@N specifies that the network name of the computer that sent the file should be printed

@Ø means to return to the left margin of the next line

@4 means to return to the left margin and skip four lines

@M means to print with double-width block characters

@Ø means to return to the left margin of the next line

@I means to print the print queue ID number

@Ø means to return to the left margin of the next line

@4 means to return to the left margin and skip four lines

@H12 specifies that normal-size characters should be used for printing (80 characters per line)

@U turns off block characters

@Ø means to return to the left margin of the next line

@4 means to return to the left margin and skip four lines

@D means to print the date from DOS

@L means to print a string of blanks

@T means to print the time from DOS

@Ø means to return to the left margin of the next line

@E means to eject the page

@H1B@H32 is the printer setup string for the IBM color printer, that returns the printer back to the standard setting.

Note: The separator page provided attempts to reset as many printer control functions as possible. If the applications you use in your network do not change the printer settings, you do not need to reset as many printer functions.

Managing Shared Printers

Checking or Changing the Print Queue

Files submitted to the Server's printer to be printed are temporarily placed on the Server's fixed disk in the directory that contains the network programs. These files are printed in first-in, first-out order.

The print queue can have up to 99 files. The Server is responsible for controlling the print queue.

The print queue shows the status of each file in the queue. You'll see the following:

- **CANCELLED** means the file has been cancelled and won't be printed. You can't change the status of a cancelled file; if you want to print it, the file has to be sent to the printer again.
- **HELD** means the file will not be printed until it is released.
- **PAUSED** means that the printer that the file is destined to print on is currently paused. All files for this printer display **PAUSED** until the printing is **CONTINUED**.
- **PRINT FILE ERROR** means the file to be printed could not be found (probably due to its being deleted).
- **PRINTER ERROR** means an error has occurred on the printer when attempting to print a file. To correct the error, you should first check the printer for a problem. Then, choose **RELEASE** or **PRINT NOW** to correct the status of this file.
- **PRINTING** means the file is being printed. You can change the status of a printing file.
- **SPOOLING** means the file is being sent to the queue. You can't change the status of a spooling file. When it's finished spooling, you can change the status.
- **WAITING** means the file is waiting to be printed. You can change the status of a waiting file.

The **Check or Change the Print Queue** menu allows you to see the files that are waiting to be printed on your printers and make changes to the queue. You can:

- **HOLD** files in the queue so that they remain in the queue and are not printed.

Note: Holding a file that is printing, stops the file from printing. The file is requeued. When you release the file, the file is printed from the beginning.

- **RELEASE** files in the queue that are being held or have a printer error so that the file can be printed.
- **CANCEL** a file in the queue so that the file is removed from the queue and isn't printed.

Note: You can cancel a file that is printing or a file that is waiting to be printed.

- Choose **PRINT NOW** for a file in the queue that you want to print immediately. The file that is currently printing stops printing and the specified file starts printing.

Note: If you choose **PRINT NOW** and the file is already being printed, the file is printed again.

- Choose **PRINT NEXT** for a file in the queue that you want to print after the file that is currently printing.

The user on the Server computer must determine from requests by the remote computers how to control the print queue. For example, if a user on a remote computer has a file that needs to be printed quickly, the user on the Server computer has to change the print queue so that the file is printed next or now.

Correcting Errors on the Print Queue

If you receive a message that an error has occurred on your print queue, you can correct the error by deleting the print spool file, then replacing it with the backup copy of the file.

Go to the DOS prompt. Change your current directory to the directory that contains the PC

LAN Program. Enter the following command to delete the print queue files from the directory that contains the PC LAN Program on your fixed disk:

```
del pq*.spl
```

Now, copy the file named PQ.SPL from the PC LAN Program diskette that you received with this manual to the c:\NETWORK directory on your fixed disk.

Changing the Paper and the Ribbon

You are also responsible for maintaining the paper and the ribbon on the Server's shared printers. If several remote computers are using your printers, you should check the paper and the ribbon frequently. If you need to change the paper or the ribbon, you should pause printing *before* you take the printer offline to change the paper or the ribbon. When the printer is ready to be used again, you should continue printing and put the printer online again.

Correcting Errors on Shared Printers

The PC LAN Program allows Servers to share many different printers and can't always determine if a printer error has occurred or if the printer is just offline. So, if a printer error occurs, the file that's being printed is shown in the queue with a status of PRINTER ERROR. The PC LAN Program will still try to print the file. If the printer is offline and is put back online, the "PRINTER ERROR" status on the print queue is cleared.

If you see PRINTER ERROR as the status for a file that's being printed on a printer that's not offline, you should try to determine the cause of the printer error. For example, the printer can be out of paper, or the printer can have a printer hardware error. If you think that the printer can't be used anymore but you have other

printers shared, you can PAUSE the broken printer. Once the printer is paused, files begin printing on the other printers that are shared.

If you put the printer back online and files are still in the queue for the printer with a status of PRINTER ERROR, you can RELEASE the file or choose PRINT NOW for the file to correct the error.

Pausing and Continuing Sharing

Pausing allows you to *temporarily* stop sharing the Server's disks, directories, and printers with the remote computers. When you pause sharing, you put the device on hold. You can *continue* the sharing later (take it off of hold).

The Server may want to do the following:

- Pause sharing all its disks, directories, and printers (NET PAUSE SRV command)
- Pause printing on all printers or on a specified printer (NET PAUSE PRINT [= *printdevice*] command)

Pause Sharing

The Server can pause allowing remote computers to use its shared disks, directories, and printers with the NET PAUSE SRV command. If the Server is sharing a printer, no more files are accepted from the remote computers and no more files are placed in the print queue. However, files that are already in the queue are printed. If the Server is sharing a disk or directory, the remote computers won't be able to use the disks or directories. The Server can pause sharing *only* if no one is actively using the Server's shared resources.

Pause Printing

The Server can pause allowing files to be printed on all of its printers or on a specified printer with the NET PAUSE PRINT command. If a file is being printed and the Server pauses printing, printing stops. You may want to pause printing so that you can fix a printer that's not working correctly, change a ribbon on the printer, or change the paper. If you specify only a certain printer when you PAUSE, all other printers continue to operate.

Continue Sharing

The Server can continue sharing its resources again. With the NET CONTINUE SRV command, the same resources that were available before the Server paused sharing are available for the remote computers to use again.

Continue Printing

The Server can continue allowing files to be printed on its printer again (NET CONTINUE PRINT command). Whichever file was printing when the printer was paused is started over from the beginning of the file (unless the Server changed the queue while the printer was paused).

Backing Up and Restoring the Disk

Occasionally, power or equipment failures can cause you to lose data. So that you don't lose important data, you should make frequent backup copies of your programs and data files. You may need to only make a backup copy once of applications and programs that are not changed. You should make frequent backup copies of any programs or data files that you or anyone else on the network makes changes to.

You can use the DOS BACKUP command to make backup copies. If you need to use the backup copies, you can use the DOS RESTORE command. See the *DOS Reference* for more information about backing up and restoring files.

Stopping the Network

If you are running the Server computer and you want to stop sharing your resources on the network, you should make sure that no one is using your resources before you stop sharing them. You should send a broadcast message and tell everyone that you're going to stop sharing. Ask everyone to stop using your resources. You can check the list of devices that you're sharing (by using the menus or by entering NET SHARE) so that you'll know when everyone has stopped using your devices. Once everyone has stopped using your devices, you can stop sharing your devices. You can use the menus or use the correct NET SHARE command to stop sharing each of your devices.

If you are using network devices that other people have shared, you should enter the correct NET USE /D command to stop using the devices before you switch off your computer.

Critical Errors on the Server Computer

Critical errors are errors detected by DOS that require DOS to stop operation. DOS informs the user of the error and waits for the user to respond.

Critical errors have one of the following formats:

```
<type> error reading/writing <device>  
Abort, Retry, Ignore?
```

or

```
<error message>  
Abort, Retry, Ignore?
```

Note: If you are using DOS 3.30, critical errors have the following formats:

```
<type> error reading/writing <device>  
Abort, Retry, Ignore, Fail?
```

or

```
<error message>  
Abort, Retry, Ignore, Fail?
```

For example, the following message is a critical error:

```
Not ready error reading drive A  
Abort, Retry, Ignore?
```

On the network, you may receive new types of critical errors. For example, a Server may share a directory with Read/Write/Create access. Then, the Server tries to access a file in the directory that a remote user already is using. The Server receives the following message:

```
Sharing violation error writing drive C  
Abort, Retry, Ignore?
```

Because both users have Read/Write/Create access to the file, they both can't access the file at the same time.

While DOS waits for you to respond to the error, users at the remote computers cannot access files or submit print files to the Server. It seems to the remote computers that the Server computer is no longer responding to their requests. The remote users hear beeping, meaning that the

Server computer is not available to do their request.

The error does not mean that the network needs to be restarted. You can correct the error at the Server computer by responding to the error. However, if you don't correct the error immediately, remote users may think that the network is not operating because they can't access the Server.

If the critical errors occur while you are using the Server computer, you must respond to the error as quickly as possible. Some of the critical errors that may occur at the Server are:

Not ready error reading/writing drive X

Write protect error writing drive X

Network device no longer exists error
reading/writing drive X

Sharing violation error reading/writing
drive X

You can correct errors such as Not ready or Write protect immediately by correcting the problem and choosing **Retry**. To correct an error such as Network device no longer exists, you must choose **Abort**, correct the problem, and then retry the request.

You also must choose **Abort** to correct an error such as Sharing violation. The sharing violation occurs because a remote computer is accessing a file that the Server computer is attempting to access. The Server computer cannot access the file until the remote computer is finished with the file. However, the remote computer won't be able to finish with the file until the Server computer exits the critical error and allows DOS to continue.

If a critical error occurs on a Server computer, you should try to correct the problem immediately and choose **Retry**. Correcting the error may require you to close a diskette drive door, remove a write-protect tab, or perhaps switch on a printer.

If you don't know how to correct the error, you should choose **Abort** or **Fail** and then correct the problem.

Note: These situations only occur on Server computers. If critical errors occur on remote computers, the errors do not affect the Server. The Server computer is available to respond to requests from other remote computers.

Using the NET ERROR Command

The PC LAN Program has tasks that operate while you're running applications. If the tasks encounter errors, the tasks don't report the errors because you're using the screen for your application. So, the error is written to a buffer. You can display the contents of the buffer by entering the NET ERROR command. You can see up to 512 bytes of the last error information recorded.

Using the NET FILE Command

The NET FILE command allows you to display the state of open files and to force an open file to close. For example, you may need to close files for applications that stop because of a sharing violation.

Important: If you use NET FILE, be careful. Applications do not expect you to close a file; applications usually close their own files. You can cause errors in an application if you close a file and the application is still using the file.

Additional Ways to Manage Security

We've already discussed the following security features for disks, directories, and printers:

- Using passwords for your shared devices and using passwords in such a way that the password will not be displayed.
- Sharing only selected directories. Sharing only some of your directories allows you to keep your private files off of the network.
- Using unique network names and passwords for each user
- Using network names (or short names) for the real path that you're sharing so that you don't have to tell remote computers the paths on your computer. You are also able to change the paths without having to tell anyone else.
- Using access modes for directories. The access modes allow you to restrict the way that others use your resources.

In addition to these security features, the Personal Computer AT computer has a keylock. The keylock allows you to lock your keyboard so that others can't use your computer.

Organizing the Server's Fixed Disk

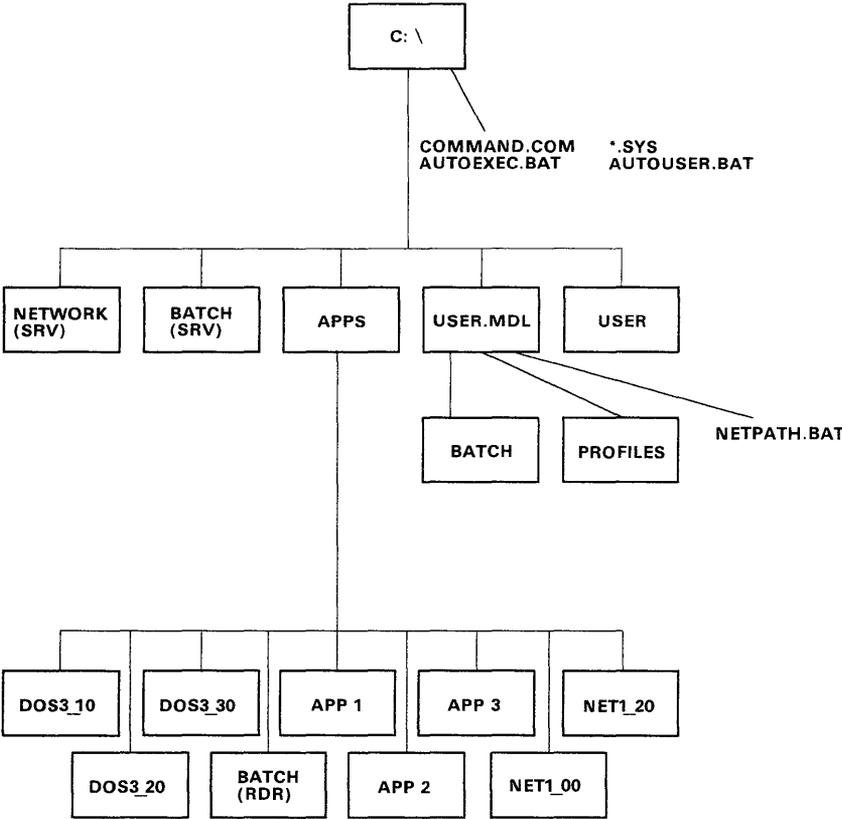
If you are managing a Server computer, you need to organize the fixed disk so that:

- Applications can easily and efficiently be shared with remote computers
- More than one remote computer can access each application at the same time
- Data files can easily be shared with remote computers
- Remote computers can have private files on your disk
- Remote computers can easily access applications, data files, and their private files.

Unless otherwise specified by IBM, IBM Personal Computer program license agreements permit the use of a program on a single computer. The customer is responsible for ensuring that each user on the network is appropriately licensed to use any program shared over the network.

For non-IBM programs, you should consult your license agreement or the vendor of the program to determine what is required for you to share the program over the network.

To meet these requirements, we recommend that you organize at least part of your fixed disk C like this:



You can use the PC LAN Program Installation Aid to create the organization we've shown, or you can use DOS commands to create it.

If you choose to use the Installation Aid, you'll only need to follow the Installation Aid menus. The Aid automatically creates the organization we've shown for you. The Aid also installs your IBM applications and programs onto your fixed disk, and creates the batch files that you and the remote computers need. If you already have subdirectories on the fixed disk, the Installation Aid won't move or delete them. The Aid only organizes part of the disk for the network, without changing anything you already have on the disk.

Note: If you already have the directory structure we've shown on your fixed disk, the Installation Aid will not change it. Any files or subdirectories you need in addition to what you have will be created for you.

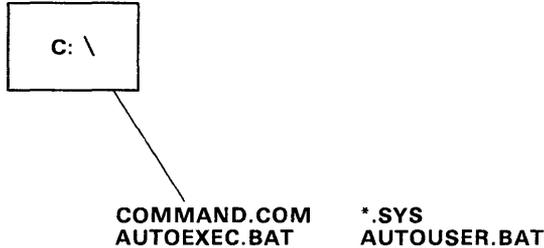
If you choose to use DOS commands, you'll need to make the directories that we've shown, install your applications and programs, and create batch files. If you already have files and subdirectories on your fixed disk, you don't need to change or move anything that you already have.

Of course, you can add subdirectories to your fixed disk in addition to the ones we've shown.

If you want to install applications that are not installed by the Installation Aid, you can use DOS commands to create the subdirectories, copy the application, and create any other files that you need. You can also create a PC LAN Installation profile for your application and run the PC LAN Installation Aid. See your application's reference manual and Chapter 13, "Creating PC LAN Installation Aid Profiles" for more information.

Let's look more closely at the disk organization we've shown.

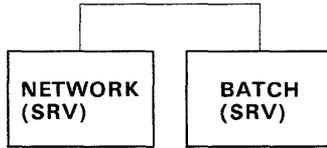
The Root Directory



The root directory of your fixed disk (\) must contain the minimum DOS system files that you need to start DOS. If you have an AUTOEXEC.BAT file or an AUTOUSER.BAT file, they should be in your root directory too.

If you use the Installation Aid, you'll be prompted to install DOS. When you have chosen a particular version of DOS, the Installation Aid will install the DOS files we've shown above. Furthermore, that version of DOS will be referenced in a PATH command that is executed by an AUTOEXEC.BAT file. You will be able to access DOS from any disk or directory on your computer. The remaining DOS files will be installed in the APPS Subdirectory shown below. When the DOS files are installed, they are marked "Read Only" with the DOS ATTRIB (Attribute) command.

The NETWORK Subdirectory



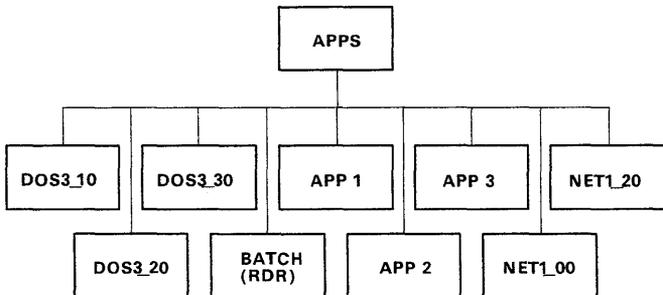
The NETWORK subdirectory contains the PC LAN Program or PC Network Program for use by your computer. The Installation Aid installs the program in the directory and includes C:\NETWORK in a PATH command that's executed by an AUTOEXEC.BAT file. You'll be able to access the PC LAN Program from any disk or directory on your computer.

The following example shows the PATH and APPEND commands in the AUTOEXEC.BAT file for the Server computer. It assumes the Server uses DOS 3.20.

```
PATH=C:\BATCH;C:\APPS\TEXT;C:\APPS\DOS3_20;  
C:\NETWORK;C:\;\APPEND=\  

```

The APPS Subdirectory



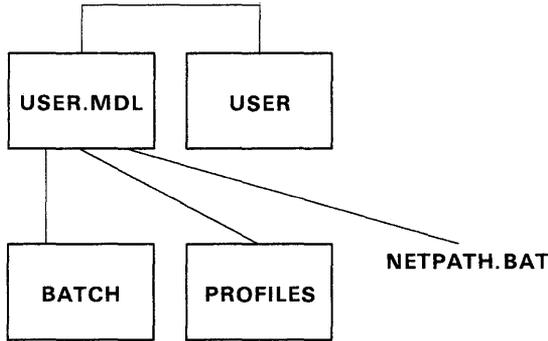
The most efficient way to share your applications is to be able to do one task from the menus or enter one NET SHARE command to share all of your applications. To do this, you need to have all of the applications in one subdirectory. When you share the subdirectory that contains the applications, all of the applications are available to the network at once.

If you use the Installation Aid, the Aid:

- Creates the APPS subdirectory for you
- Creates batch files for the applications
- Installs your IBM applications
- Marks each program file of your application “Read Only” with the DOS ATTRIB command
- Tells you where the applications are installed.

Because space on your fixed disk is limited, you probably want to have only one copy of an application in your APPS subdirectory. But, you may need to let more than one person use the same application at the same time. To do this, you need to share your APPS subdirectory with Read-only access. This way, multiple remote users can access the subdirectory at the same time and run the applications from it.

The USER Subdirectories



Some applications have program files that need to be in a subdirectory with Read/Write/Create access. For example, a text editor application can create profiles, so the application needs to be able to write a profile in a subdirectory. Because only one remote computer can write to a file at a time, each remote computer needs to have a copy of the files.

Remote computer users may want to store files on your disk in a private subdirectory so that only they have access to the files. To do this, the Server computer needs to have separate subdirectories for each remote computer user.

If you use the Installation Aid, the Aid will prompt you for the network names of remote computers that want to use your applications. The Installation Aid will create private subdirectories for each remote computer user you specify. Each private directory contains two other directories, the BATCH directory and the PROFILES directory.

The Server shares each private subdirectory separately with Read/Write/Create access so that each remote computer can read files, create new files, and write to files in the subdirectory.

The USER.MDL subdirectory is an “outline” of a user subdirectory that is used to create subdirectories for specific users. Note that the NETPATH.BAT is tailored for each remote user by the Installation Aid; the NETPATH.BAT in USER.MDL is only a sample.

If you have information that you want copied into all *new user's* directories, enter that information into the root directory of the USER.MDL directory before you define your users. The files in the USER.MDL root directory will be copied into each new user directory.

The BATCH Subdirectory for Remote Computers

Remote computers also need to be able to access applications easily. So, you need to provide batch files for the remote users that allow them to access the applications.

If you use the Installation Aid to organize your disk and install your applications, the Aid will automatically create the batch files that the remote computers need. Through the path in the NETPATH command, the user's BATCH directory is searched after the current directory and any appended directories.

If you do not use the Installation Aid, you'll have to create the BATCH subdirectory and create the batch files for the remote computers.

If you normally use an application or program by starting it from a batch file, the batch files created by the Installation Aid may change the way that you normally use the application or program.

You can create your own batch files to execute a program. To create your own batch file, use the batch files created by the Installation Aid as a model. Be sure to include the APPEND

command and the calling statement from the Installation Aid batch file in your batch file.

Note: See the *PC LAN Program Installation Aid Quick Reference Card* at the back of this manual or the application's manual for information about using your application.

The PROFILES Subdirectory for Remote Computers

If the remote user wants to use applications that have profiles or other program files that require Read/Write/Create access, the files are stored in the PROFILES directory. If you use the Installation Aid to install the user, the PROFILES directory is created and an APPEND command is entered when the remote user starts the network. The APPEND command causes the PROFILES subdirectory to be searched first (after the current directory) for any application program files, such as an application profile.

The BATCH Subdirectory for the Server

The Server needs to access the applications easily, no matter which subdirectory or drive is the current drive. To do this, the Server needs batch files that allow it to access the applications.

If you use the Installation Aid, the Aid will automatically create the batch files that the Server needs for each application that you install.

If you do not use the Installation Aid, you'll have to create batch files for the Server.

The NETPATH Command

The NETPATH command is included in each remote user's private directory. NETPATH is a batch file that contains a PATH command to subdirectories that contain files with .COM, .EXE, and .BAT extensions. NETPATH allows the remote users to easily access the applications installed on the Server from any disk or directory on their computer.

To gain access to all of the applications, DOS, and the PC LAN Programs installed in the Server's APPS directory, you must first type NETPATH, using one of the following procedures, to set up the correct PATH and APPEND commands.

Do one of the following two steps after you have started the PC LAN Program and have access to your private directory:

- Change to your private directory on the Server computer by changing your DOS default drive to the drive ID that was defined by your "using network command" for your private directory. For example, if drive E is the ID defined for your private directory, type E: and press enter. Then type CD\ and press enter. Then type NETPATH and press enter.
- Enter the NETPATH directly by typing E:\NETPATH and pressing enter.

In either case, you get a message indicating that you can now use the Server's applications.

You can tailor the NETPATH.BAT file PATH and APPEND commands, but be careful that you do not delete or change the order of the commands. You should add to the back (end) of the PATH and APPEND commands.

The following example shows the PATH and APPEND commands in the PC LAN NETPATH.BAT file for a user who uses DOS on his local fixed disk and the PC LAN Program (1.20) on the Server:

Note: This example assumes that the Server specified that the APPS directory be used as drive K.

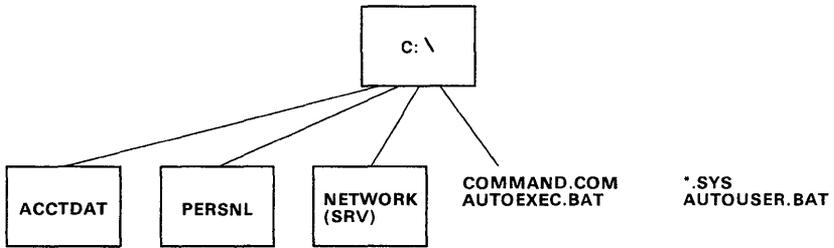
```
PATH=\BATCH;K:\BATCH;K:\TEXT;C:\DOS;K:\NET1_20;\APPEND=\
```

Subdirectories You May Want To Add

You may want to share different kinds of data files separately. To do this, you may want to make some additional subdirectories for your data files.

For example, suppose you have some accounting data files and some personnel data files on your disk. You want others to have access to the accounting files, but not the personnel files. If you had all of the files in the root directory (\) and you shared the root directory, the remote computers could access *all* of the files.

But, if you put the files in separate subdirectories, such as ACCTDAT (accounting files) and PERSNL (personnel files), you could share only the ACCTDAT directory. Remote users could access the accounting files, but not the personnel files.



Installing Applications with the Installation Aid

After you've organized your disk, you may want to install applications on the Server's disk. Many applications can be installed in the APPS subdirectory so that you can share many applications at one time.

You can use the Installation Aid to automatically install many of your IBM applications that can be used with DOS. The applications are installed in the Server's APPS subdirectory.

Some IBM applications cannot be installed in the Server's APPS subdirectory. Each computer must have its own copy of these applications.

You can refer to the *PC LAN Program Installation Aid Quick Reference Card* at the back of this manual for a list of IBM applications that can be used with DOS and instructions for how to install them. If your IBM application isn't on the card, check your application manual for instructions to install the application for use on the network.

Sharing Application and User Subdirectories

If you use the Installation Aid, you can print a list of the application and user subdirectories that you need to share. Then, you can use the menus or you can enter NET SHARE commands to share the subdirectories. You can also print a list for the remote users that tells each remote user the directories that they need to use.

You may want to share some data subdirectories for the applications. The Installation Aid won't print a list of the data subdirectories you need to share, because only you know the names that you gave them. You should add the names of any data subdirectories that you want to share to the list that the Aid prints.

The Installation Aid also prints a list of the application subdirectory and the user subdirectories that each remote computer needs to use. If the remote computers need to use a data subdirectory, you should add the name of the subdirectory to the list. You should give a copy of the list to each remote computer user. The remote computer users can use the menus or enter NET USE commands to use the subdirectories.

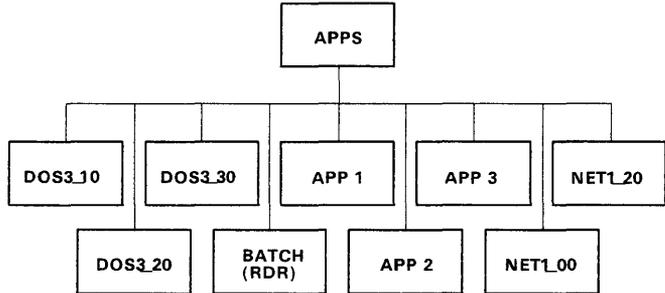
Sharing the APPS Subdirectory

You should share the APPS subdirectory with read-only access. Sharing with Read-only access allows more than one person to use the same application at the same time.

Note: If you want to know more about access rights, see "Access Rights for Shared Disks and Directories" on page 10-11.

Sharing the APPS subdirectory means that everything in the APPS subdirectory can be accessed by remote users. All of the

subdirectories that contain applications and the BATCH subdirectory are shared.



For example, you could share C:\APPS as network name APPS.

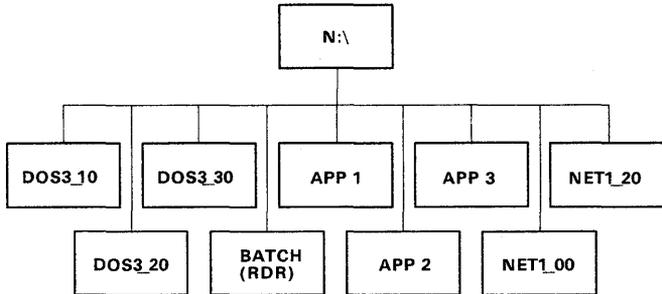
The remote computer users each use the APPS subdirectory as a drive on their computer, such as N. If you use the Installation Aid, you identify the drive specifier with which the remote users should use the directory.

The Installation Aid requires the drive specifier to be defined as k:, l:, m:, or n:. This is to allow users to specify drive letters below k: for device drivers and VDISKS. This does not restrict a network from having more than four Servers. However, a remote station can only use applications from four Servers at a time, if the Installation Aid was used to install the Servers. If the Installation Aid was not used to install the Servers, remote stations can use drive letters up to the last drive specified in CONFIG.SYS to access applications.

The drive specifier you define is used in the PATH and APPEND commands for the remote users. For example, suppose you defined drive N as the drive specifier that remote users should use for APPS. TIMG is a remote user who wants to use your applications. The log you print for TIMG will tell him to use APPS as if it were his drive N and the PATH and APPEND commands

in his NETPATH command will contain N in the directory paths.

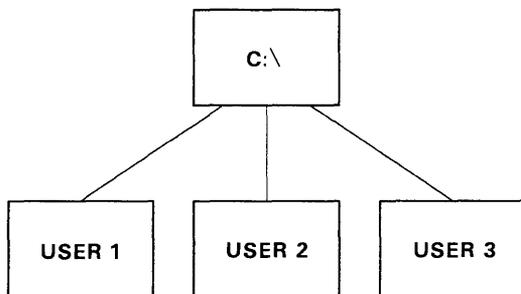
The remote computer users see the APPS subdirectory as if it were a root directory on their computer, with subdirectories, like this:



Even though the applications are in subdirectories, the files in the BATCH subdirectory allow the remote computers to access the applications from their root directory or from any subdirectory.

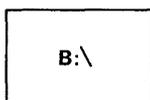
Sharing the USER Subdirectories

You should share each USER subdirectory with Read/Write/Create access. Sharing each subdirectory with Read/Write/Create access means that only one remote computer can use a file in the directory at a time. You may also want to give each shared subdirectory a password for security.



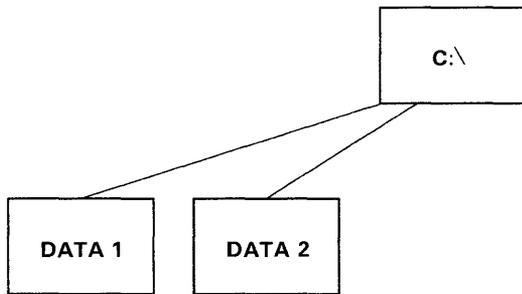
For example, you could share a user subdirectory of C:\ANNB as network name ANNB.

The remote computers use their private subdirectory as a drive on their computer, such as B. If you used the Installation Aid to install remote users, remote users can use their private directories as any drive specifier they choose. The remote computers sees their subdirectory as if it is a root directory, like this:



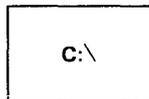
Sharing Data Subdirectories

If you have data subdirectories that you want to share and you want remote users to be able to make changes to the files in the directories, you should share each subdirectory with Read/Write/Create access. Sharing each subdirectory with Read/Write/Create access means that only one remote computer can use a file at a time. You may also want to give each subdirectory a password for security.



For example, you could share a data subdirectory of C:\LETTERS that contains letters as the network name LETTERS.

The remote computer users can use the data subdirectory that they need as if it were a drive on their computer, such as C. Each remote computer sees the data subdirectory as if it were a root directory, like this:



Installing Other Applications

You may want to install other applications similar to the way that the Installation Aid installs IBM applications. If you want to install the application in the \APPS subdirectory, you should be sure that the application can be used from a read-only directory before you install it. Follow these steps to install the application:

1. Create a subdirectory in the \APPS subdirectory for the application.

2. Use the application installation instructions or the appropriate DOS command to copy the application program files into the subdirectory.

Notes:

- a. You may not need all of the files in the application subdirectory. When you're familiar with the application, you can erase any unneeded files.
 - b. Some applications have BASIC and BASICA on the diskette. You can erase these files from the application directory. BASIC and BASICA from the DOS subdirectory are used.
 - c. Some applications have COMMAND.COM on the diskette. Rename COMMAND.COM in the application subdirectory and try to run your application. If it runs with the file renamed, you can delete COMMAND.COM from your application directory.
 - d. If your application has an AUTOEXEC.BAT file on the diskette, check to see what the file does. If the file only executes another batch file, you can erase AUTOEXEC.BAT. Copy the batch file that AUTOEXEC.BAT executes into the Server BATCH subdirectory and the remote users' BATCH subdirectories.
 - e. Do not specify a directory for DOS commands in the subdirectory. Instead, let the PATH statement (in NETPATH) for each user find the correct level of DOS commands.
3. You need to also create a batch file for the application for the Server and a batch file for

the remote user. The following instructions tell you how to create the batch files.

Creating Batch Files for Installed Applications

Batch files for the Server and the remote computers allow the users to access the application and provide information to the application. The batch files include the APPEND and PATH commands.

- APPEND locates files with extensions *other than* EXE, COM, and BAT. APPEND is used to allow applications to locate application profiles or other files in the user's PROFILES subdirectory.
- PATH locates files with extensions of EXE, COM, and BAT. PATH is used to allow users to start an application from any disk or directory.

If you've installed an application in the APPS subdirectory, without using the Installation Aid, you must create a batch file to go in the BATCH subdirectory to allow the users to access the application.

You must tailor the contents of the batch files to the user's configuration. Because each user has different names for disks and directories, you must create your own PATH and APPEND commands. The following are examples of batch files.

Note: If you want to install an application that isn't on the *PC LAN Program Installation Aid Quick Reference Card*, see your application's reference manual to determine if that application can be installed by the PC LAN Installation Aid. If not, but you want to create a PC LAN Installation Aid Profile so that the application can be installed by the PC LAN Installation Aid,

see Chapter 13, "Creating PC LAN Installation Aid Profiles."

Batch File for a Server Computer

The following example assumes that the application was installed in the C:\APPS\APP1 subdirectory and the path on the Server computer is:

```
PATH=C:\BATCH;C:\APPS\APP1;C:\APPS\DOS3_10;  
C:\NETWORK;\
```

The following example is a batch file for a Server computer accessing a program file named Sample:

```
ECHO OFF  
CLS  
APPEND > SAVEPATH.BAT  
ECHO C:\APPS\BATCH\CLEANSAV >> SAVEPATH.BAT  
APPEND C:\PROFILES;C:\APPS\APP1  
C:\APPS\APP1\SAMPLE  
SAVEPATH
```

Batch File for a Remote Computer

The following example assumes that the remote computer user would always use the Server's APPS directory as the remote computer's N disk drive. It is also assumed that the application was installed in the C:\APPS\APP1 subdirectory on the Server computer and the path on the remote computer is:

```
PATH=\BATCH;N:\BATCH;N:\APP1;N:\DOS3_10;N:\;  
NET1_20\
```

The following example is a batch file for a remote computer accessing a program file named SAMPLE:

```
ECHO OFF
CLS
APPEND > SAVEPATH.BAT
ECHO N:\BATCH\CLEANSV >> SAVEPATH.BAT
APPEND N:\PROFILES;N:\APP1
N:\APP1\SAMPLE
SAVEPATH
```

Deleting Users From the PC LAN

If you want to delete a user from the network without doing setup again, you must delete the subdirectory assigned to that user.

Chapter 11. Using TopView with the PC LAN Program

Introduction	11-3
Start Up Procedures	11-4
Doing Network Tasks After Starting TopView	11-9
Using Additional Network Devices	11-10
Sending a Message While Using TopView	11-13
Receiving and Viewing Network Messages	11-13
Using a Mouse Pointing Device	11-14
Doing Message Manager for TopView Tasks	11-14
Receiving Messages	11-15
View Received Messages	11-16
Start Saving Messages	11-17
Stop Saving Messages	11-18
Start Receiving Messages for Another Name	11-18
Stop Receiving Messages for Another Name	11-18
Start Forwarding Messages to Another Computer	11-19
Stop Forwarding Messages to Another Computer	11-19
Display Names That Can Receive Messages At Your Computer ..	11-19
Pause Receiving Messages	11-20
Continue Receiving Messages ..	11-20
Save Your Message Manager for TopView Setup	11-21
Cancel Your Current Message Manager for TopView Setup ..	11-22
Changing Start Parameters for the Message Manager for TopView	11-22

Introduction

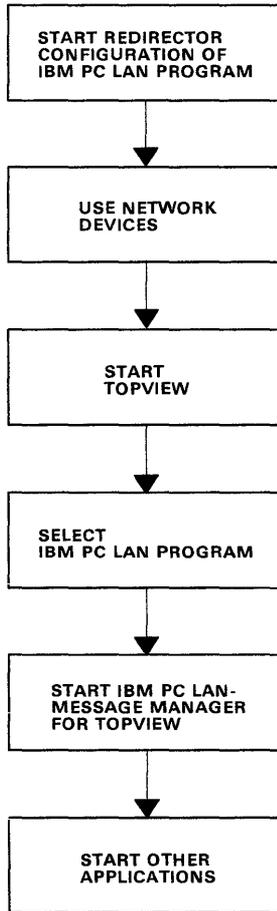
This chapter describes how to use your PC LAN resources while running applications under TopView. If you want to use TopView with PC LAN, you must configure the PC LAN Program as a Redirector. The Redirector configuration allows you to:

- Use network disks, directories, and printers
- Send messages.

This chapter also describes how the IBM PC LAN Program-Message Manager for TopView application allows you to receive and view network messages while running TopView.

Start Up Procedures

Use the following procedures to start programs and applications.



1. If you haven't done so, set up and start the Redirector configuration of the PC LAN Program. Chapter 4 explains how to do this setup. You also should specify the network devices you want to use. Any device you specify before starting TopView, will be made available to all applications running under TopView.
2. If the applications you plan to use were installed on a Server computer with the IBM PC LAN Program Installation Aid, do the following. Otherwise go to **step 3**.
 - a. You should be at the DOS prompt.
 - b. Enter the drive letter of your private directory followed by `:\netpath`. For example, if your private directory is network drive E, enter:

```
e:\netpath
```

3. Starting TopView

Depending on where your TopView application is installed, follow these procedures to start TopView.

If TopView is installed on a Server computer:

- a. Make the network drive that contains your private directory your current (default) drive.
- b. If this is the first time starting TopView, or if you want to change the setup file, enter:

```
tvsetup
```

Do the setup and start TopView.

Otherwise, just enter:

topview

If TopView is installed on your computer using the TopView setup procedure:

Do one of the following:

- If this is the first time starting TopView, or if you want to change the setup file:
 - a. Type `cd\topview` and press Enter.
 - b. Type `setup` and press Enter. Do the setup and start TopView.
 - If you do not need to do setup:
 - a. Type `cd\` and press Enter.
 - b. Type `topview` and press Enter.
4. You should be at the TopView Start a Program menu.

If IBM PC LAN Program and IBM PC LAN-Message Manager have already been added to the TopView Start a Program menu, go to **step 6**. Otherwise add them now.

- a. Select "Add a Program to menu."
- b. Select "Other" from the TopView Add a Program menu.
- c. On the Program Location screen do one of the following.
 - If the Message Manager for TopView and the PC LAN Program are installed on your computer, type the drive letter and path that contains your Message

Manager for TopView and PC LAN Program.

- If the Message Manager for TopView and the PC LAN Program are installed on and shared by a Server computer over the network, type the drive letter that has been assigned to the Server's applications directory, followed by *\network*. For example, if your application directory is your network drive K, type:

k:\network

and press Enter.

d. On the Add Other screen:

- Move the pointer to IBM PC LAN Program and press button 1.
- Move the pointer down to IBM PC LAN-Message Manager and press button 1 again.
- Press button 2 and the word *added* should appear by both program names.
- Press button 2 again to return to the Add a Program screen.
- Quit this task and return to the TopView Start a Program menu.

5. If the Message Manager for TopView and PC LAN Program are installed on the Server computer, do the following. Otherwise go to **step 6**.

- a. You should be at the TopView Start a Program menu. Select "Change Program Information" and then select IBM PC LAN-Message Manager.

- b. On the Change Program Information screen, tab to the Data Files Location field.

Change the information in this field to the drive letter of your private directory followed by :\. For example if E is your private drive, type:

e:\

Delete any other information in this field and press Enter.

- c. The Save Option screen should appear. Select "Save and Quit." Return to the TopView Start a Program menu.

6. If you want to send messages, use more network devices, or do other network tasks, select "IBM PC LAN Program" from the TopView Start a Program menu.
7. If you want to receive network messages, start the IBM PC LAN-Message Manager for TopView application. You must keep the Message Manager running in the background to receive messages while you are running your applications.

Note: The Message Manager for TopView application requires 98K-bytes of free memory. Also you should not start multiple copies of the Message Manager application.

If you are using an auto start group, you should make Message Manager for TopView the first entry.

8. Start other applications you want to use from the TopView Start a Program menu.

Note: Refer to the *TopView User's Guide* for information on adding network programs to TopView.

Doing Network Tasks After Starting TopView

The following table lists the network tasks you can do after starting TopView. You must switch to the IBM PC LAN Program to do some tasks and to the IBM PC LAN-Message Manager to do others.

Switch to IBM PC LAN Program To Do These Tasks	Switch to IBM PC LAN-Message Manager To Do These Tasks
<ul style="list-style-type: none">• Send messages• Start or stop using network disks, directories, or printers• Display network devices you are using• Display your network names• Print a file• Check the print queue on another printer• Change the print size on a network printer• Pause or continue using network disks, directories, or printers• Save or cancel your current network setup.	<ul style="list-style-type: none">• View received messages• Start or stop saving messages• Start or stop receiving messages for another name• Start or stop forwarding messages• Display names that can receive messages at your computer• Pause or continue receiving messages• Save or cancel Message Manager setup.

Note: You can save or cancel the current network setup only if the IBM PC LAN Program you added to TopView Start a Program menu is installed on your computer.

Using Additional Network Devices

To use additional network devices after starting TopView, first switch to or select the IBM PC LAN Program. The PC LAN Program Main Menu should appear.

Menus

- If you want to use a network disk or directory, choose “Disk or directory tasks” on the Main Menu. Follow the menus and fill in the necessary fields to specify the network disk or directory you want to use.
- If you want to use a network printer, choose “Printer tasks” on the Main Menu. Follow the menus and fill in the necessary fields to specify the network printer you want to use.

Commands

If you are familiar with using the PC LAN Program commands, you can use the NET USE command to specify the devices you want to use. When the PC LAN Program menu is displayed, press the F2 key to bring up the command line. Enter the appropriate NET USE command to specify the network device you want to use.

Note: All network devices that you specify while using the IBM PC LAN Program can be accessed by all applications running under TopView.

Stop Using Network Devices

You can also stop using a network device through the PC LAN menus or by issuing a NET USE command. First switch to the IBM PC LAN Program. The PC LAN Program Main Menu should appear.

Menus

- If you want to stop using a network disk or directory, choose “Disk or directory tasks” on the Main Menu. Follow the menus and fill in the necessary fields to specify the network disk or directory you want to stop using.
- If you want to stop using a network printer, choose “Printer tasks” on the Main Menu. Follow the menus and fill in the necessary fields to specify the network printer you want to stop using.

Commands

When the PC LAN Program menu is displayed, press the F2 key to bring up the command line. Enter the appropriate NET USE /D command to specify the network device you want to stop using.

IMPORTANT: You should not stop or pause using a network device if any of your applications are currently accessing the device.

Using Network Devices From a Batch File, an Application Program, or COMMAND.COM

DOS and the PC LAN Program allow you to use a network device or directory by issuing the NET USE command from a batch file, an application program, or COMMAND.COM. However, TopView considers the device as **private**; therefore, no other application running under

TopView can use that device until the batch file, application program, or COMMAND.COM has ended its task.

The following restrictions apply when using network devices specified from a batch File, an application program, or COMMAND.COM.

1. You cannot specify a name for a network device you want to use that is also the name of an actual device on your computer. For example, if you actually have a drive *A*, you cannot use *A* as the name of a network device you want to use.
2. You cannot use the DOS Print command to print to a private network printer. You can however, use the DOS PRINT command to print to a network printer which was specified either before TopView was started or from the PC LAN Program menus after starting TopView.
3. You cannot PAUSE/CONTINUE using network devices. You can only PAUSE/CONTINUE using network devices from the PC LAN Program menus.
4. If you use a network disk or directory without specifying a drive letter, that network device is not considered private. It may be accessed or deleted by any of the applications running under TopView.
5. You can stop using a private network device from the PC LAN Program menus, or from the batch file, application program, or COMMAND.COM window in which you started using the device.

Sending a Message While Using TopView

To send a message while you are using a program started under TopView, first switch to the IBM PC LAN Program. The PC LAN Program menu should appear.

Menus

- Select “Messages Tasks” on the Main Menu.
- Select “Send Messages” on the PC LAN Messages Tasks menu.

You will then be able to send a message to another network computer or to all computers on the network (broadcast message). See Chapter 5 for more information on sending messages.

Commands

When the PC LAN Program menu is displayed, press the F2 key to bring up the command line. Enter the appropriate NET SEND command to send your message.

Receiving and Viewing Network Messages

This section describes how to receive and view network messages using the Message Manager for TopView application. You start the Message Manager for TopView application by selecting it from the TopView Start a Program Menu.

Using a Mouse Pointing Device

You can choose to use either a mouse pointing device, the keyboard, or a combination of both when using the Message Manager for TopView application.

If you use a mouse, you can select an item from a menu by pointing at it with the mouse. You then press button 1 (it is not necessary to type in a number and then press Enter). On some screens, however, you may need to type information, such as a computer name. The Message Manager for TopView application uses the same type of mouse you specified for TopView.

Doing Message Manager for TopView Tasks

The Message Manager for TopView application screens are similar to the ones used with the PC LAN Program. When you select Message Manager from the TopView Start a Program menu, the Message Manager Message Tasks menu appears.

Main Menu -- Message Tasks

1. View received messages
 2. Start or stop saving messages
 3. Start or stop receiving messages for another name
 4. Start or stop forwarding messages
 5. Display names that can receive messages at your computer
 6. Pause or continue receiving messages
 7. Save or cancel the Message Manager setup
- 1 Choice
- Enter - Continue F1 - Help
Esc - Exit

Using this application, you can:

- View received messages
- Start or stop saving messages
- Start or stop receiving messages for another name
- Start or stop forwarding messages
- Display names that can receive messages at your computer
- Pause or continue receiving messages
- Save or cancel Message Manager setup.

Receiving Messages

If you aren't logging messages to a file or a device, the Message Manager for TopView application will tell you when you have a message from another computer by sounding an alarm to alert you of the message.

View Received Messages

You use menus to view messages. You can also view the saved (logged) messages.

To view a message, do the following:

1. Switch to IBM PC LAN-Message Manager.
2. Select “View received messages” from the Message Manager Message Tasks menu.

On the View Messages menu, you’ll see a list of keys at the bottom of the menu. If you *are not* logging messages, press F3 to see messages that are waiting for you to view. If you *are* logging messages, press one of the following keys:

- F5 to view the first message (the oldest) message in your log file.
- F6 to view the next message that you’ve received in your log file. Press F6 again to continue seeing messages from the log file.
- Ctrl-F6 to skip over messages already viewed.

To scroll the message being viewed, use the PgDn, and PgUp keys, or use the TopView scroll function. If you want to store a message that you received on your screen to your log file, press F7. If you want to print the message, press F8. *You must have specified a log file before you can save messages to a log file.* For information on specifying a log file, see “Start Saving Messages” in this chapter.

The following function keys are not available with the Message Manager for TopView application:

- F2 (Command line)
- F4 (Switch between Send Message screen and View Message screen)

- Ctrl-F4 (Transfer to Send Screen)
- Ctrl-Alt-Break (Network Request)

Start Saving Messages

This task allows you to tell the PC LAN Program that you want to put your incoming messages in a file to view later. It is selected from the Message Manager for TopView Message Tasks menu.

You may want to save your messages to a file or device so that you're not interrupted each time you receive a message. You can then look at the saved messages whenever you want to.

You may want to save messages to a file on your own computer, or to a file on a network disk that you are using. If you are logging messages to a file on a diskette, be sure that the diskette *does not* have a write-protect tab on it, and make sure the diskette is in the drive specified. This diskette must always stay in that drive because you never know when a message will be sent to you. If the message cannot be saved to the save file because of an error, it is saved in memory as a waiting message.

To start saving messages, select "Start or stop saving messages" from the Message Manager for TopView Message Tasks menu. Follow the menus and fill in the necessary information to start saving messages.

Specify a file name you want to log messages to (if the file doesn't exist, the file is created for you). If only the file name is specified, the file is created in the default drive and directory specified in the Data File Location on the Message Manager for TopView Program Information File (PIF) screen. To override the default drive and directory, enter the drive and

path for the save file. Do not save messages to a printer on another computer, or to your printer if it is shared with others on the network.

If you want the file to be available to save waiting messages in, but don't want to save your incoming messages in the file, go back to the Start or Stop Saving Messages menu and choose to stop saving messages.

Stop Saving Messages

This task allows you to tell the PC LAN Program that you no longer want to save your incoming messages. It is selected from the Message Manager for TopView Message Tasks menu.

Start Receiving Messages for Another Name

This task allows you to add names to your computer so that you can receive messages for others. It is selected from the Message Manager for TopView Message Tasks menu. You may want to use this task if you need to get messages for people in addition to yourself, or if more than one person is using the same computer.

Stop Receiving Messages for Another Name

This task allows you to stop receiving messages for other names. It is selected from the Message Manager for TopView Message Tasks menu.

Note: You can't stop receiving messages for the name you gave your computer.

Start Forwarding Messages to Another Computer

This task allows you to send to another computer messages that you're receiving at your computer. It is selected from the Message Manager for TopView Message Tasks menu. You can forward messages sent to you or you can forward messages sent to another name on your computer. You can only forward messages once. The computer that receives the forwarded messages can't forward them again. The other computer will receive your forwarded messages even if you turn your computer off.

Stop Forwarding Messages to Another Computer

This task allows you to stop forwarding messages to another computer. It is selected from the Message Manager for TopView Message Tasks menu. You will start receiving the messages at your computer again.

Display Names That Can Receive Messages At Your Computer

This task lets you display a list containing the name of your computer and any other additional names for which you are receiving messages. It is selected from the Message Manager for TopView Message Tasks menu. If you are forwarding messages for any of the names on your computer, the name of the computer you are forwarding messages to is also displayed.

You may want to display names on your computer if you've forgotten the name you gave your computer, or if you've forgotten who you're receiving messages for.

When names that can receive messages at your computer are displayed, the words **RECEPTION ERROR** appears in the "TYPE" column for those names in error. You will not be able to receive messages for the names in error.

Message reception for the name was canceled because of a NETBIOS error. To correct the error, do **one** of the following:

- If the error is for a computer name, end the Message Manager for TopView application and start it again.
- If the error is for other than a computer name, try to delete the name in error and add it again.

Pause Receiving Messages

This task allows you to temporarily stop receiving messages. It is selected from the Message Manager for TopView Message Tasks menu. You won't receive messages on your screen, in a log file, or on a printer. When you want to receive messages again, you can continue receiving messages.

Continue Receiving Messages

This task allows you to continue receiving messages. It is selected from the Message Manager for TopView Message Tasks menu. The messages are sent to the same device that you were receiving them on when you paused receiving messages.

Save Your Message Manager for TopView Setup

This task allows you to save the way you're using the Message Manager for TopView application. The next time you start the Message Manager, you'll be using it the same way.

You should save your setup if you're planning to use the application about the same way every day. Of course, you can still change the way you use the application. Your new setup replaces your existing saved setup.

This task saves the logfile you are saving messages to while using Message Manager for TopView. It also saves names you specified for receiving messages at your computer while using Message Manager. The setup information saved on the Message Manager menu only applies to Message Manager tasks. It does not change or add to the setup information saved on PC LAN menus.

The setup information is saved in the file NETWORK.TVM of your current drive and directory. The current drive and directory are specified in the Data File Location field on the Message Manager for TopView Program Information File menu. If you are starting a Message Manager for TopView application that is being shared by a Server across the network, the Data File Location field should contain a path to your private directory on the Server computer. If you are starting a Message Manager for TopView application that is on your computer, the Data File Location field should contain a path to the directory or diskette that contains the Message Manager for TopView application.

Cancel Your Current Message Manager for TopView Setup

This task lets you cancel (delete) the Message Manager for TopView application setup that you've saved. You should cancel your setup if you want to change the way you use the application.

Changing Start Parameters for the Message Manager for TopView

You can change some of the preset parameter values that are used to start the Message Manager. You should change the default parameter values if you want to do any of the following:

- Receive messages for more than one other name
- Have more than 1600 characters of space to store waiting messages in (approximately five small waiting messages).

To change the start parameters you must change the Program Information File (PIF) for the Message Manager. To change the PIF, select the Change Program Information option on the TopView Start a Program menu. Select IBM PC LAN-Message Manager as the application you want to change. The PIF for the Message Manager is displayed. The Program Parameters field will contain the current parameter values for the number of names that can receive messages (/USN:n) and the size of the waiting message buffer (/MBI:n).

The /USN:n parameter defines the maximum number of additional names and forwarded names (total), from 0 to 12, that you can have on your computer at one time. If you do not enter /USN,

the default for n is one additional name, or one forwarded name (in addition to your computer name).

The /MBI:n parameter defines the size in bytes, from 512 to approximately 60K-bytes, of the message buffer that is used to receive messages. If you do not enter /MBI, the default for n is 1680 bytes.

Messages use the space reserved by /MBI as follows:

- Messages are stored in blocks of 128 characters.
- For each message, an 80 character header is created.
- If the header plus the message is not a multiple of 128, some of the last 128-character block will not be used.

For example:

A 40-character message takes:

80 characters for the header + 40 for the text +
8 unused = 128 characters

If you change the values of /MBI and /USN, you must also change the minimum, maximum and system memory values in the PIF. The default memory values using /USN:1 and /MBI:1680 are:

MINIMUM Memory = 79KB
MAXIMUM Memory = 79KB
SYSTEM Memory = 19KB

To calculate the proper memory values if you change the values for /USN and /MBI, use this formula:

MINIMUM Memory = 77KB + MBI + (/USN * 1KB)
MAXIMUM Memory = The same as the minimum
SYSTEM Memory = 16KB + (/USN * 3KB)

For example, if you change /MBI to 2048 bytes, and /USN to 3, you must also change the memory requirements to the following:

MINIMUM Memory = 77KB + 2KB +
(3 * 1KB)=82KB

MAXIMUM Memory = 82KB

SYSTEM Memory = 16KB + (3 * 3 KB)=25KB

Note: These memory formulas are sufficient when your CONFIG.SYS file contains LASTDRIVE=N. If you specify a LASTDRIVE greater than N, you will need to increase the system memory value in your Program Information File. For example, with LASTDRIVE=Z, use the formula:

SYSTEM Memory = 19 KB + (/USN * 4)

TopView will issue a warning if you do not specify enough memory.

Chapter 12. IBM PC LAN Performance Considerations

Introduction	12-3
Hardware Factors	12-4
Server Work Load	12-5
DOS and PC LAN Program	
Performance Options	12-6
Remote Computer Performance Options	12-7
Remote File Buffer Pool	12-7
CONFIG.SYS File	12-9
/PBx Network Print Buffers	12-9
/SES (Sessions) and /CMD (Commands)Parameters	12-10
Server Performance Options	12-10
Disk Buffer Pool	12-11
CONFIG.SYS File	12-12
FASTOPEN	12-13
Network Transmission Buffer Pool (NTBP)	12-13
/SES (Sessions) and /CMD (Commands) Parameters	12-14
/PRB (Print Buffer) Parameter ..	12-15
/PCx (Print Count) Parameter ..	12-16
/PRP (Print Priority) Parameter	12-16
/TSI Parameter	12-17

Introduction

This chapter provides information about the factors that affect the performance of programs that run in a PC LAN Program environment. The material in this chapter may help LAN installers and operators to provide better service to its users.

The PC LAN Program Release 1.20 parameter defaults are set for performance and not to minimize memory.

Memory requirements will change if you choose starting values other than the defaults. In addition, Release 1.20 incorporates several internal changes that improve the performance of a file server.

Review this chapter before overriding a PC LAN Program parameter default.

You should be familiar with the following:

- DOS
- Installation of the LAN hardware and the PC Lan Program
- LAN applications in use
- Chapters 1, 7, 9, and 10 in this book.

The terms Server and remote computer are used in this chapter to describe the two different usages of a personal computer made by the PC LAN Program. A remote computer is either a Redirector, Receiver, or Messenger configuration, while a Server is the Server configuration. A PC started as a Server can actually be both a remote computer as well as a Server.

The performance is determined by the hardware and software you are using, and by the parameters you define when you set up your system. You can improve performance by experimenting with some of these parameters. The purpose of this chapter is to help you:

- Identify hardware factors affecting network performance
- Understand the effect of Server work load
- Identify DOS and PC LAN Program options affecting performance.

Hardware Factors

Network performance is affected by the hardware components that make up the network. Some of these hardware components are:

- Computer processors
- Server computer memory
- Server computer disks
- Printers
- Network adapters
- Network cabling system.

You can substitute types of hardware components to improve network performance. For example, a Personal Computer AT provides better file server performance than a PC XT.

The hardware components of the network can have as great an effect on performance as any of

the factors discussed in the remainder of this chapter.

Server Work Load

Work load is the number of work requests made to a server in a unit of time. The server work load is the sum of all the work requests made by its attached remote computers at any instance in time. Often, the network cable has adequate capacity for its traffic, but busy Servers are causing decreased or inconsistent performance. For example, if a file COPY or NET PRINT command that usually takes six seconds is taking 15 seconds to complete, server work load is probably the cause. If network requests are inconsistent or are significantly longer than usual, try to identify the Server involved and then determine if it is overloaded.

Try one of the following methods to reduce the load on a Server:

- *Evaluate the Server's performance parameter options.* These options are discussed in "DOS and PC LAN Program Performance Options" on page 12-6.
- *Use a faster processor, disk, or printer.* For example, you might substitute a Personal Computer AT for a PC XT.
- *Dedicate the Server.* Use the Server computer only to provide service for remote computers.

- *Move Server users.* You can reduce Server load by moving some of the Server users (remote computers) to a new or different Server.
- *Move files.* Move some of the frequently used files from the Server to the remote computer. This could be a permanent move or a temporary one while files are being used.

DOS and PC LAN Program Performance Options

You can affect network performance by selecting options in the CONFIG.SYS and AUTOEXEC.BAT files and parameters on the NET START command. The default values for these options provide good performance for most users.

After you choose values for these options, measure performance to determine if it has improved. Make these measurements under controlled conditions so that the results are affected only by the value you are changing. Usually, timing an application function is the easiest way to measure performance. Detailed information about the CONFIG.SYS file is available in Chapter 9, "CONFIG.SYS Commands Used with the PC LAN Program." Information about the syntax and parameters of the NET START command can be found in the "NET START Command" on page 7-75.

The DOS and PC LAN Program options depend on whether you are dealing with a remote computer or a Server. These are discussed in the following sections.

Remote Computer Performance Options

The following options are discussed in order of importance for remote computer performance.

Remote File Buffer Pool

The Remote File Buffer Pool is used in most instances to hold file I/O data transferred between the remote computer and the file Server. The size of the pool is determined by the following formula:

$$/NBC * /NBS \leq 32 \text{ KB}$$

/NBC Parameter

/NBC defines the number of buffers in the Remote File Buffer Pool. Set the **/NBC** value to the number of files that you expect an application to actively access across the network. Actively access means the usual number of files the application will read or write to perform a function. For example, an application may use two files to perform function A, yet function B involves reading and writing five files. **/NBC** should be set to 5. When more remote files are open than **/NBC**, wasted exchanges for data can occur between the Server and the remote computer.

Changing **/NBC** affects the memory used by the Remote File Buffer Pool. Many PC applications process a few files concurrently. Data base applications often process several files concurrently. Increasing the **/NBC** value beyond the number of files that are open can waste memory and may require reducing **/NBS**.

Note to Application Program Developers:
DOS 3.30 allows more than 20 open file handles. A new INT 21 (SET HANDLE COUNT) has been created to specify more than 20 open file handles (see the *DOS Reference*, Version 3.30.)

/NBS Parameter

/NBS defines the size of a Remote File Buffer. This buffer is used to hold most data sent or received from a file server.

When an application program sequentially accesses a file, the server request is made for the size of /NBS. This provides some amount of read-ahead and write-behind buffering. Following are examples of programs that sequentially access files:

- Word processors
- Text editors
- DOS COPY commands
- Some spreadsheet applications
- Loading a program from a server.

Buffering is not done for applications that randomly access a file. Data Base and information retrieval applications are typical examples.

Most environments involve both types of file access, particularly sequential access. You should perform controlled experiments if you increase the /NBS above the default or choose a value below 1K.

CONFIG.SYS File

The two commands in the CONFIG.SYS file that influence the performance of a remote computer are the BUFFERS and FILES options.

The BUFFERS option affects the performance of DOS and its ability to access information from the remote computer's disk files. Its value does not affect network performance. The value should be:

- 10 or higher for PCs without fixed disks
- 20 or higher for PCs with fixed disks.

If the local disks are rarely accessed, these values can be reduced.

Note: If you set BUFFERS to a higher value, measure the effect to determine if the increase has helped your performance.

The FILES option affects the performance of the applications being used. Set the value to 20 or higher, depending on application requirements. The value selected is the total number of files that can be concurrently opened on both the local system and the Server. The value used has minimal memory impact.

/PBx Network Print Buffers

The /PBx parameters can affect the performance of print data that the remote computer sends to a print Server. The default values provide good performance without wasting memory. You do not need to change them. If you do a NET USE command with LPT2 or LPT3, specify /PB2 or /PB3 as 1024.

/SES (Sessions) and /CMD (Commands)Parameters

The /SES and /CMD parameters of the NET START command control the size of the data transfer buffers sent on the LAN cable. The smaller the values for /SES and /CMD, the bigger the physical link buffer size. Normally, you do not need to change /SES and /CMD. The IBM PC LAN Program adjusts the parameters for you. You only need to change /SES and /CMD if you are running an application designed to use the network in addition to the PC LAN Program (see Chapter 7, "PC LAN Program Command Reference" for these values).

These parameters can affect applications that transfer large amounts of data across the network. For example, the DOS COPY and the NET PRINT commands can cause large files to be sent across the network.

You should use the lowest possible values for the /SES and /CMD parameters.

Server Performance Options

The following options appear in order of importance for Server computer performance. This information assumes that the Server is dedicated to processing only work requests from remote computer users.

Disk Buffer Pool

The PC LAN Program keeps a disk buffer pool (called a cache) in addition to that maintained and used by DOS. Both are important to File Server Performance. The cache retains data using a least-recently used algorithm. The cache helps the performance of applications which randomly retrieve data the most.

The default storage for the cache is in DOS memory. You may use extended memory instead by specifying the /EXM parameter. Extended memory is storage that is physically addressed above 1 megabyte. You can determine the amount of free DOS memory available by using the DOS CHKDSK command. You can adjust the value of the /CAC parameter and use all of you DOS memory with the exception of 18K bytes free needed by the PC LAN Program. If all the available memory is used, you cannot run any applications or the DOS optional commands.

File Server Performance may improve by using a large cache in extended memory if there are files or programs being shared between several users or the files are often referenced. If the PC is used only as a Print Server or as a File Server which stores data which is not shared between users or frequently referenced, then performance may be improved by NOT using the cache and increasing /RQB as follows:

```
net start ... /cac:0 /rqb:16K /req:3
```

/CAC (Cache Buffers) Parameter

The /CAC value specifies how many K-bytes the Server uses to buffer disk data. A higher value may improve performance.

Note: If the /CAC parameter is non-zero, no other disk buffering (caching) product can be used. Unpredictable results will occur.

/EXM (Cache in Extended Memory) Parameter

If your computer has extended memory, specify this parameter so that the cache buffers will reside in the extended memory. Otherwise, do not specify this parameter and the cache buffers will reside in standard PC memory.

CONFIG.SYS File

The two commands in the CONFIG.SYS file that influence the performance of a Server computer are the BUFFERS and FILES options.

The BUFFERS option affects performance by improving the ability of a Server computer to access information from disks attached to it. The Server should have 20 buffers regardless of your usage of the disk cache.

Note: If you set BUFFERS to a higher value, measure the effect to determine if the increase has helped your performance.

The FILES option should use a value of 100 or greater because a Server may need to maintain several files open for each of its remote users. The value has minimal memory impact.

FASTOPEN

If you are using DOS 3.30, modify your AUTOEXEC.BAT to contain a FASTOPEN command referencing those fixed disks you are sharing. FASTOPEN improves the performance of DOS OPEN requests by providing a file directory entry buffer. The number of entries specified should equal the value you select for the FILES = parameter in CONFIG.SYS. (See the *DOS Reference*, Version 3.30.)

Network Transmission Buffer Pool (NTBP)

The NTBP is used to hold data transferred between the server and remote computer. The data is held on the Server. The size of the pool is determined by the following formula:

$$/REQ * /RQB \leq 48KB$$

/REQ (Server Requests) Parameter

The /REQ parameter specifies how many remote computer requests the Server can process at the same time. The higher the value, the more concurrent network requests the Server can receive.

The value can be 1 to 6; the default for a Server is 6. /REQ should be set to the higher of /RDR or 6 for a dedicated server. If /RDR is less than 6, increase /NBS to its maximum possible size. If you are configuring a non-dedicating server, a value of 2 for /REQ may provide acceptable performance.

The PC LAN Program also uses /REQ to determine the size of the Network Transmission Buffer Pool.

/RQB (Network Transmission Buffer Size) Parameter

The /RQB parameter specifies the maximum buffer size used for data transfer between the Server and a remote computer. The default value for a Server is 8K-bytes. The /RQB parameter determines the maximum information that can be sent between the Server and a remote computer in one network operation.

If the /RQB value is large, less network and disk activity is required for large data requests. For example, the DOS COPY and NET PRINT commands issued by remote computer users with large network files would be completed sooner.

The larger the /RQB value, the more memory the PC LAN Program needs.

/SES (Sessions) and /CMD (Commands) Parameters

The /SES and /CMD parameters of the NET START command control the size of the data transfer buffers sent on the LAN cable. The smaller the values for /SES and /CMD, the bigger the physical link buffer size. The link buffer size used is the smaller of those chosen by the Server and by the remote computer. The Server size is usually the smaller of the two.

These parameters have some effect on performance. Use their default values and let the PC LAN Program calculate them. You indirectly set them by your choices for /RDR, /USN, /SRV, and /REQ. Requirements for /RDR, /USN, /SRV, and /REQ are discussed in Chapter 7, "PC LAN Program Command Reference." The link buffers affect applications that transfer large amounts of data across the

network, such as the DOS COPY and the NET PRINT commands of large files.

/PRB (Print Buffer) Parameter

You can use the /PRB parameter to define the size of the print buffer that holds data being sent to the printer.

For the following reasons, performance improves by increasing /PRB:

- The printer can obtain its data without delay. This is most noticeable with high-speed printers.
- The disk read activity is reduced. This has an indirect effect on remote computers that are competing for use of the disk.

The default is 2048 bytes. The memory required for the print buffer is double the value of /PRB. If you have a very high-speed printer (for example, the IBM 3812 Pageprinter), you may want to evaluate higher settings.

/PCx (Print Count) Parameter

The /PCx parameter defines the maximum number of characters, from 1 to /PRB, to send from the print buffer (/PRB) to the printer in a single operation. The *x* identifies the printer for which you are defining the count. You can use the following values for *x*:

x	Device
1	LPT1 or PRN
2	LPT2
3	LPT3

If you do not specify a value for /PCx, the value of the /PRB parameter is used as the default.

You can use the /PCx parameter to control the relative response time given to the foreground application and the printer. For slow and moderate speed printers, the default /PCx value should be sufficient. For very fast printers (such as the IBM 3812 Pageprinter), the /PCx value should be modified to give better response time for the foreground application. For the IBM 3812 Page Printer, a value of 100 to 200 should give a good balance between foreground activity and printing. If you modify this value, use increments of 50. The larger the /PCx value, the faster the printer will print. The smaller the /PCx value, the better performance will be for other server activities.

/PRP (Print Priority) Parameter

Because the Server is dedicated, use the default /PRP parameter. /PRP only makes a difference when you are doing foreground activity at the same time that a file is printing.

/TSI Parameter

You can use the /TSI parameter to allocate Server computer processing time between foreground and background tasks. The tasks done at the keyboard of the Server computer are *foreground* tasks. The tasks that remote computers do at the Server computer are *background* tasks. For example, if you enter a DOS command at the Server, the command is a foreground task. When a remote computer sends a file to the Server for printing, the remote computer's task is a background task.

Use the default value for the /TSI parameter with a dedicated Server. The default value allows equal performance of foreground and background tasks. Because a dedicated Server involves minimal foreground activity, the background (remote computer) tasks get as much time as needed.

When you use the /TSI parameter to change the way that the Server uses its processing time, specify a number from 0 to 9 for the foreground (*f*) and background (*b*) tasks. The number you specify determines how many timer ticks a task can use before the task is stopped and another task starts. A timer tick is equal to 1/18.2 seconds or 54.945 milliseconds. If you do not enter /TSI, the default is 54 (five foreground intervals, four background intervals).

Use the following table to select a /TSI value:

/TSI Value	Timer Ticks
0	1
1	2
2	3
3	5
4	7
5	11
6	15
7	21
8	28
9	36

You can try different values for /TSI to determine if a different setting provides better performance. To evaluate changes, increase the value of f or b while holding the other one constant. The task whose value is increased should get more time for processing.

If both task values (f and b) are set at 0, background processing always has priority. In this case, the foreground task only runs when no background work is present.

Chapter 13. Creating PC LAN Installation Aid Profiles

Introduction	13-3
Adding Installation Aid Profiles	13-3
Installation Aid Profile Rules	13-4
Profile Variables	13-5
COMMENT LINE (;) Command	13-7
APPEND FOLLOWING TEXT TO	
FILE (.AF) Command	13-8
APPEND SOURCE FILE TO	
DESTINATION FILE (.AP) Command	13-9
ATTRIBUTE FILE (.AT) Command	13-10
CHANGE DIRECTORY (.CD)	
Command	13-11
CENTER TEXT (.CE) Command	13-12
COPY FOLLOWING TEXT TO FILE	
(.CF) Command	13-13
CLEAR SCREEN(.CL) Command	13-14
COPY FILE (.CO) Command	13-15
CURSOR POSITION (.CP) Command	13-16
CARRIAGE RETURN (.CR) Command	13-17
DEFINE DEFAULT DRIVE (.DD)	
Command	13-18
DECISION (.DE) Command	13-19
DISPLAY LINE (.DL) Command	13-20
ECHO (.EC) Command	13-21
END-OF-FILE TEXT FOR .CF and	
.AF (.EF) Command	13-22
END PROFILE DEFINITION (.EN)	
Command	13-23
ERASE FILE (.ER) Command	13-24
MAKE DIRECTORY (.MD) Command	13-25
PROFILE NAME - APPLICATION	
(.NB) Command	13-26
PRINTER DECISION (.PR) Command	13-27
RENAME FILE (.RE) Command	13-28
RIGHT JUSTIFY TEXT (.RJ)	
Command	13-29
VERIFY DISKETTE (.VD) Command	13-30
Installation Aid Profile Examples	13-32
Example of an Installation Aid	
Application Profile	13-32
Installing "Exploring the IBM PC	
Network" Program	13-34

Introduction

The PC LAN Installation Aid is controlled by profiles that describe the Installation Aid screens and the steps to install an application. Your PC LAN Installation Aid diskette has profiles that you can use to install IBM applications. Some applications have installation aid profiles on their first diskette. These can be interpreted by the PC LAN Installation Aid. You also can create your own profiles using any text editor and the application profile commands.

This chapter tells you:

- How to add installation aid profiles
- How to use the application profile commands.

It also provides profile examples.

Adding Installation Aid Profiles

The profiles that control the PC LAN Installation Aid are on one of two diskettes:

- The PC LAN Installation Aid diskette in the files NETAID1.PRO and NETAID2.PRO.
- An application's first diskette in the file PROFILE.NIA.

If you are adding a new profile, write the profile according to the profile rules and place it on the application's first diskette as PROFILE.NIA.

When you use the PC LAN Installation Aid, the following choice appears:

**OTHER APPLICATION NOT LISTED
BELOW.**

If you select this option, you are prompted to insert your application's first diskette which contains PROFILE.NIA.

Note: OTHER APPLICATION NOT LISTED BELOW is not a valid choice while the network is active.

Installation Aid Profile Rules

The following rules must be followed when modifying or building new profiles for the PC LAN Installation Aid:

- Do not use tabs or save PROFILE.NIA with "tabs on".
- Do not leave a line blank. Use %BL% to indicate a blank line.
- All profiles must begin with .NB and end with .EN.
- Do not include any lines in PROFILE.NIA that do not conform to the profile rules listed in this chapter.

Profile Variables

The PC LAN Installation Aid allows you to substitute drive identifiers dynamically during installation time. You can use the Installation Aid to install applications from drives A, B, D, or E to the fixed disk C. It also keeps track of the drive letter that the Server operator chose for remote machines to use to access the APPS directory. By using substitute variables for drive identifiers, you do not need to know which drive identifiers remote users have specified.

The variables also allow future change to be made to the Installation Aid without changing your installation procedure.

When you design your application profile, use the following substitute variables:

%SRC% The source drive letter.

%TAR% The target drive letter.

For example, to copy all files from the source drive A to the target directory of C:\APPS\ABC, use the command:

```
.CO %SRC%:*.* %TAR%:\APPS\ABC
```

%D% The APPS drive letter.

The %D% variable is used primarily in the remote user batch files. Using this variable means that you do not have to know which letter the Server chose for his APPS directory. For example, even if the Servers on different machines have remote users who access their C:\APPS directories with different identifiers, the following starts the "Exploring the IBM PC Network" application:

%D%:\NET\EXPLRING

During installation, the %D% is substituted with the identifier of the Server being installed.

%BL% A blank line. For example:

%BL%

EXPLORING THE IBM PC NETWORK
PROGRAM (1.00)

%BL%

To start the application enter: NETWORK

%BL%

COMMENT LINE (;)

Command

Purpose

No characters following a semicolon (on the same line) are processed. The text following a semicolon is a comment to the programmer.

Format

Place a semicolon to the left of any text that you do not want processed.

Syntax

None

Example

```
;Set up the date  
DATE          ; This is another comment
```

APPEND FOLLOWING TEXT TO FILE (.AF) Command

Purpose

This command appends all subsequent lines (up to the .EF command) to the end of the specified file. All .AF commands must have corresponding .EF commands.

Format

.AF filename

Syntax

filename any valid DOS filename (* and ? are not allowed)

Example

```
.AF SETUP.BAT      ;append following text to  
                   ;setup.bat  
ECHO  
DATE  
TIME  
.EF                ;end of text
```

APPEND SOURCE FILE TO DESTINATION FILE (.AP) Command

Purpose

This command adds the source file to the end of the destination file.

Format

.AP source destination

Syntax

source any valid DOSfilename (* and ? are not allowed)

destination any valid DOSfilename (* and ? are not allowed)

Example

```
AP C:\THG\SRC.BAT C:\THG\BATCH\DEST.BAT  
;copy SRC.BAT to end of DEST.BAT
```

ATTRIBUTE FILE (.AT)

Command

Purpose

This command sets the file attribute as READ-ONLY or READ-WRITE-CREATE.

Format

`.AT +|-R filename`

Syntax

`+R` READ-ONLY attribute

`-R` READ-WRITE-CREATE attribute

filename any valid DOS filename

Example

```
.AT +R C:\NETWORK\*. * ;make all files in  
;C:\NETWORK directory  
;READ-ONLY
```

CHANGE DIRECTORY (.CD)

Command

Purpose

This command changes the current directory of the specified or default drive.

Format

.CD directory

Syntax

directory any valid DOS directory name

Example

*.CD \ ;make the root of the current drive the
;current directory*

CENTER TEXT (.CE)

Command

Purpose

This command centers the indicated text on the specified display line.

Format

.CE row 0|1 text

Syntax

row 0 to 24

0 low intensity, white characters

1 high intensity, yellow characters

text character string to be displayed

Example

```
.CE 5 1 CENTER TEXT
;center "CENTER TEXT" on line
;in high intensity/yellow
```

COPY FOLLOWING TEXT TO FILE (.CF) Command

Purpose

This command copies all subsequent lines (up to the .EF command) into the specified file, deleting anything that was previously in the specified file. All .CF commands must have a corresponding .EF command.

Format

.CF filename

Syntax

filename any valid DOS filename

Remarks

If the specified file exists, it is truncated to zero length before the new text is copied. If the specified file does not exist, it is created.

Example

```
.CF C:\BATCH\DATETIME.BAT
    ;copy following text to
ECHO DATE and TIME file
    ;C:\BATCH\DATETIME.BAT
DATE
TIME
.EF                                ;end of text
```

CLEAR SCREEN(.CL)

Command

Purpose

This command clears the display screen.

Format

.CL

Syntax

None

Example

.CL ;clear the screen

COPY FILE (.CO)

Command

Purpose

This command copies a file to a specified disk.

Format

.CO source destination

Syntax

source any valid DOS filename

destination any valid DOS filename or directory name

Example

```
.CO A:*.BAT C:\BATCH ;copy all .BAT files in  
;the A:\ directory to the  
;C:\BATCH directory
```

CURSOR POSITION (.CP)

Command

Purpose

This command positions the cursor at the indicated display location.

Format

.CP row column

Syntax

row 0 to 24

column 0 to 79

Example

.CP 12 2 ;position cursor at line 12, column 2

CARRIAGE RETURN (.CR) Command

Purpose

This command pauses the screen processing until the user presses the Enter key.

Format

.CR

Syntax

None

Example

```
.CR          ;pause until user presses the Enter  
             ;key
```

DEFINE DEFAULT DRIVE (.DD) Command

Purpose

This command defines the current default drive.

Format

.DD driveletter

Syntax

driveletter A, B, C, D, or E

Example

.DD A ;make A: the default drive

DECISION (.DE)

Command

Purpose

This command pauses execution until the user presses either the Enter or Esc keys. The Enter key continues the execution. The Esc key terminates the current operation and displays the PC LAN Application List screen.

Format

.DE

Syntax

None

Example

```
.DE ;pause until user presses:  
;Enter - continue executing profile commands  
;Esc - stop executing profile commands and  
; display Application List screen  
; (i.e., ABORT installation in progress)
```

DISPLAY LINE (.DL)

Command

Purpose

This command writes a line of text to the display in the specified location.

Format

.DL row column 0|1 text

Syntax

row 0 to 24

column 0 to 79

0 low intensity, white characters

1 high intensity, yellow characters

text character string to be displayed

Example

```
.DL 5 0 0 WELCOME  
;display "WELCOME" at row 5, col 0  
                  ;in low intensity, white
```

ECHO (.EC) Command

Purpose

This command displays subsequent text on the output device.

Format

.EC text

Syntax

text character string to be displayed

Example

```
.EC Installing DOS ;display "Installing DOS" at  
;current cursor position using  
;low intensity characters
```

END-OF-FILE TEXT FOR .CF and .AF (.EF) Command

Purpose

This command terminates the COPY and APPEND FILE commands.

Format

.EF

Syntax

None

Example

```
.AF SETUP.BAT      ;append following text to  
                   ;setup.bat  
ECHO  
DATE  
TIME  
.EF                ;end of text
```

END PROFILE DEFINITION (.EN) Command

Purpose

This command indicates the end of the current profile.

Format

.EN

Syntax

None

Example

```
.NB MY_APP ;Installation  
           ;profile called MY_APP  
.  
.  
.  
.EN           ;end of profile for MY_APP
```

ERASE FILE (.ER)

Command

Purpose

This command deletes a specified file from the specified directory on the default or specified drive.

Format

.ER filename

Syntax

filename any valid DOS filename (* and ? are not allowed)

Example

```
.ER C:\THG\THG.TMP ;delete file  
;THG.TMP from C drive
```

MAKE DIRECTORY (.MD) Command

Purpose

This command creates a subdirectory on the specified disk.

Format

.MD directory

Syntax

directory any valid DOS directory name

Example

```
.MD C:\THG2            ;create directory  
                         ;named C:\THG2
```

PROFILE NAME - APPLICATION (.NB) Command

Purpose

This command indicates the name of the current application profile. Profiles beginning with “.NB” cannot be installed while the PC LAN is active.

Format

.NB profile_name

Syntax

Profile_name unique character string
(without embedded blanks)

Remarks

The Installation Aid Program does not allow execution of installation profiles beginning with .NB while the PC LAN is active.

Example

```
.NB MY_APP2 ;Installation  
                ;profile for MY_APP2  
.  
.  
.  
.EN                ;end of profile for MY_APP2
```

PRINTER DECISION (.PR)

Command

Purpose

This command allows the user to ready the selected printer or to terminate the current task.

Format

.PR

Syntax

None

Example

```
.PR      ;pause until the user presses:  
        ;Enter - if LPT1 is ready, continue  
        ;      profile execution else, allow  
        ;      user to press Enter or Esc again  
        ;Esc   - abort execution of installation  
        ;      profile and display Application  
        ;      List screen.
```

RENAME FILE (.RE)

Command

Purpose

This command renames a file.

Format

`.RE old _name new _name`

Syntax

old _name any valid DOS filename (* and ? are not allowed)

new _name any valid DOS filename (* and ? are not allowed)

Example

```
.RE C:\BATCH\OLD.BAT C:\BATCH\NEW.BAT  
;OLD.BAT to NEW.BAT
```

RIGHT JUSTIFY TEXT (.RJ) Command

Purpose

This command aligns the right margin of the indicated text.

Format

.RJ row 0|1 text

Syntax

row 0 to 24

0 low intensity, white characters

1 high intensity, yellow characters

text character string to be displayed

Example

```
.RJ 0 0 IBM PC LAN Program  
      ;display IBM PC LAN Program  
      ;right justified on line 0 in  
      ;low intensity characters
```

VERIFY DISKETTE (.VD)

Command

Purpose

This command verifies that the correct diskette was inserted into diskette drive %SRC%.

Format

.VD filename text

Syntax

filename any valid DOS filename

text character string to be displayed

Remarks

The FILENAME parameter should be a unique file to the application being installed.

If the application installation requires two or more diskettes, the filename should be unique to each required diskette.

Example

```
.VD A:MY_APP3.EXE Insert MY_APP3 into drive a:  
;clear screen and display text message that  
;prompts user for the MY_APP3 diskette.  
;Search for A:MY_APP3.EXE to ensure  
;user has inserted correct diskette. Issue  
;message for user to insert correct diskette  
;if MY_APP3.EXE is not found.
```

VERIFY DISKETTE (.VD) Command

Note: A: is used here only for simplicity;
%SRC% should be used in an applications
profile.

Installation Aid Profile Examples

This section has example profiles for installing applications. The first profile installs a general application, while the second profile installs "Exploring the IBM PC Network". The second profile is followed by an explanation of each section in the profile.

Example of an Installation Aid Application Profile

The following example profile installs application "XXX" into the directory C:\APPS\SAMPLE.

```
.NB XXX          ;NB must be the first
;               ;command in each profile
.CL             ;clear screen
.VD %SRC%:FILE.EXE Insert the XXX diskette
into drive %SRC%.
;               This prompts the user for the
;               XXX diskette. The profile checks
;               for FILE.EXE on the diskette
;               before it continues.
.CL
.EC Your XXX program is being installed.
.MD %TAR%:\BATCH ;create the batch
;               directories
.MD %TAR%:\APPS\BATCH
.MD %TAR%:\APPS\SAMPLE
;               create the directory where the application
;               program is to be installed.
.CO %SRC%:*.* %TAR%:\APPS\SAMPLE
;-----
.CF %TAR%:\BATCH\SAM.BAT
;               create the batch file that will start the
;               application for the server user
ECHO OFF
CLS
APPEND > SAVEPATH.BAT
```

```

ECHO CLEANSV.BAT > > SAVEPATH.BAT
APPEND %TAR%:\APPS\SAMPLE
%TAR%:\APPS\SAMPLE\DOIT.EXE
SAVEPATH
.EF                                ;creation of file is finished
;-----
.CF %TAR%:\APPS\BATCH\SAM.BAT
;                                create the batch file that will start
;                                the application for the remote user
ECHO OFF
CLS
APPEND > SAVEPATH.BAT
ECHO CLEANSV.BAT > > SAVEPATH.BAT
APPEND %D%:\SAMPLE
%D%:\SAMPLE\DOIT.EXE
SAVEPATH
.EF
;-----
.CL
.EC XXX has been installed
.EC Type SAM to start it.
.EN
;*** END OF PROFILE

```

Installing "Exploring the IBM PC Network" Program

The following example profile installs the Exploring the IBM PC Network program. The profile is divided into sections that are explained following the example profile.

A) .NB Exploring IBM PC Network Program (1.00)

B) .CL

.VD %SRC%:MOBW80.CIM Insert the
Exploring diskette into drive %SRC%:

C) .CL

.EC Your Exploring IBM PC Network Program
(1.00) is being installed.

.MD %TAR%:\APPS\NET

.AT -R %TAR%:\APPS\NET*.*

.CO %SRC%:*.* %TAR%:\APPS\NET

.ER %TAR%:\APPS\NET\AUTOEXEC.BAT

.ER %TAR%:\APPS\NET\G.BAT

.ER %TAR%:\APPS\NET\COMMAND.COM

.AT +R %TAR%:\APPS\NET*.*

D) .CF %TAR%:\BATCH\NETWORK.BAT

ECHO OFF

CLS

REM EXPLORING IBM PC Network
Program (1.00)

APPEND > SAVEPATH.BAT

ECHO %TAR%:\APPS\BATCH\CLEANSAV

> > SAVEPATH.BAT

APPEND %TAR%:\APPS\NET

%TAR%:\APPS\NET\EXPLRING

SAVEPATH

.EF

E) .CF %TAR%:\APPS\BATCH\NETWORK.BAT

ECHO OFF

CLS

APPEND > SAVEPATH.BAT

ECHO %D%:\BATCH\CLEANSAV

> > SAVEPATH.BAT

```
ECHO Setting up to run Exploring IBM PC
  Network Program (1.00)
APPEND %D%:\NET
%D%:\NET\EXPLRING
SAVEPATH
.EF
```

```
-----
F) .AF %TAR%:\BATCH\README.NIA
   %BL%
   To start Exploring, enter: NETWORK
   %BL%
   Exploring is installed in: %TAR%:\APPS\NET
   %BL%
   .EF
```

```
-----
G) .AF %TAR%:\APPS\BATCH\HELP.NIA
   NETWORK Exploring the IBM PC
   Network (1.00)
   .EF
   .EN
```

Explanation of Profile to Install "Exploring the IBM PC Network"

The following is an explanation of the previous profile example. The steps and sequence can be changed or modified. For example, if your application has multiple diskettes, repeat Sections B and C (request the next diskette and copy the information).

Section A: This section (.NB) contains the name of the application to be installed. In this case, the application is "Exploring the IBM PC Network Program (1.00)".

Section B: This section clears the screen and validates that the correct diskette has been inserted into the source (%SRC%) drive. In this case, the diskette contains the file "MOBW80.CIM".

Section C: This section does the following:

1. Creates the directory that contains the application (if it does not already exist)
2. Uses the interface to the DOS ATTRIB command to mark all of the files as read/write/create (necessary if this is a re-installation)
3. Copies the application into the directory (from %SRC% to target %TAR%)
4. This application requires that some of the files be removed from this subdirectory, such as COMMAND.COM. These files are erased.
5. Uses the interface to the DOS ATTRIB command to mark all of the files as read-only so that multiple users can access the file at one time.

Section D: This section builds the batch file (to be used by the Server operator) to set up the environment and start the application.

Section E: This section builds the batch file (to be used by the Remote users) to set up the environment and start the application.

Section F: This section adds to the application log information.

Section G: The last section adds to the help information.

Chapter 14. The Token-Ring Network

Introduction	14-3
NET 700 Errors for Token-Ring Network	14-3
Determining What to Do After an Error	14-4
Messages	14-7
Problem Determination	14-7
Where to Find Additional Information on the Token-Ring Network	14-8

Introduction

To use the PC LAN Program with the IBM Token-Ring Network, your computer must be equipped with an IBM Token-Ring Network PC Adapter. This chapter describes the types of errors you may receive if you are connected to the IBM Token-Ring Network

NET 700 Errors for Token-Ring Network

A NET ERROR command can be issued to obtain additional error information if the PC LAN configuration is either **Messenger** or **Server**.

An example of the information returned when a NET ERROR command is entered follows:

```
01:33:20.58 NETWORK ERROR
NET807: System error; NETBIOS error
91 FA 01 03 0000:0000
*      MACH1
00 3C 1D86:9C7F 00
FA0000000000000030000001500000000
```

In the line of information following the "NET807" line, the first group of 2 characters is the **Command** issued by the program to the IBM Token-Ring Network PC Adapter. The next group of 2 characters is the resulting **Return Code**.

The last line contains 32 characters (16 bytes, each represented by 2 characters). The first 12 bytes of this information are additional return status details provided by the adapter.

Your network administrator or problem determination representative may need this information. The definition of these bytes are:

- Bytes 0-1 Bring-up error code resulting from an error during adapter initialization (DIR.INITIALIZE command)
- Bytes 2-3 Open error code resulting from an error during adapter opening
- Bytes 4-5 The latest ring status field
- Bytes 6-7 Adapter Check reason code
- Bytes 8-9 The latest PC-detected error (contents of register AX)
- Bytes 8-9 Information about implicit commands that an analyst may want to have.

Determining What to Do After an Error

1. Determine the **Return Code** from the line following the NET807 message.
2. Look up that value in the following list.
3. Take the suggested action.

4E or 4F Ring Status Change

Cause: An error condition has occurred on the Token-Ring Network.

Action: Notify your network administrator or problem determination representative of the failure and provide the Return Code and Ring Status.

F7 or F8 Error Starting the Adapter

Cause: An error condition has occurred when the adapter was started.

Action: Run the Adapter Diagnostics to test the adapter. See the *IBM Token-Ring Network PC Adapter Guide to Operations*. If the diagnostics indicate a failure, return your adapter for service and provide the **bring-up error code** value. If the diagnostics do not indicate a failure, restart your computer. If the error still persists, notify your network administrator or problem determination representative and provide the error information displayed above.

F9 PC to Adapter Error

Cause: An error condition has occurred between the adapter and the IBM PC.

Action: Run the Adapter Diagnostics to test the adapter. See the *IBM Token-Ring Network PC Adapter Guide to Operations*. If the diagnostics indicate a failure, return your adapter for service and provide the **bring-up error code** value. If the diagnostics do not indicate a failure, run the diagnostics provided with your computer. If an error is indicated, follow the instructions supplied by your computer diagnostics. If the computer diagnostics do not indicate an error,

and the error still persists, notify your network administrator or problem determination representative and provide the error information displayed above.

FA	Adapter Check
-----------	----------------------

Cause: An error condition has occurred in the adapter.

Action: If this is the first attempt to use the adapter, verify that the switches have been set correctly and that there is no conflict in memory assignments with other adapters. Run the Adapter Diagnostics to test the adapter. See the *IBM Token-Ring Network PC Adapter Guide to Operations*. If the diagnostics indicate a failure, return your adapter for service and provide the **bring-up error code** value. If the diagnostics do not indicate a failure, restart your computer. If the error still persists, notify your network administrator or problem determination representative and provide the error information displayed above.

FC	Error When Connecting to the Network
-----------	---

Cause: An error condition or conflict has occurred when the adapter attempted to attach to the network.

Action: Notify your network administrator or problem determination representative and provide the error information displayed above.

Messages

Network error conditions may occur when using the Token-Ring Network that are different from those for the PC Network. Also, some messages may occur for different reasons than when using a PC Network. Appendix A contains additional information for the affected messages.

Problem Determination

The Token-Ring Network PC Adapter diskette has a Ring Diagnostic that can be run in your computer to further define network problems. This program is explained in the *IBM Token-Ring Network Problem Determination Guide*.

You should use the Ring Diagnostic when a hardware error is indicated by a PC LAN Program message. You cannot run the Ring Diagnostic while the PC LAN Program is operating. You will have to stop the PC LAN Program, load the Ring Diagnostic, and reload the PC LAN Program after you are finished with the Ring Program.

Where to Find Additional Information on the Token-Ring Network

- *IBM Token-Ring Network PC Adapter Guide to Operations*

This book and a diskette accompany the adapter. The book explains how to install the adapter and the files supplied on the diskette.

- *IBM NETBIOS Program User's Guide*

This book comes with the NETBIOS Program, which is necessary before the PC LAN Program can be used on the Token-Ring Network. It explains how to install the program.

- *IBM Token-Ring Network Problem Determination Guide, SY27-0280*

This book explains how to use the Ring Diagnostic and how to locate problems with the Token-Ring Network hardware.

Appendix A. Messages

This appendix lists messages you may receive while you are on the network.

The first part of this appendix lists prompt and information messages. These messages *do not* start with NET and a number. These messages are in alphabetic order.

The second part of this appendix lists network error messages. These messages start with NET, followed by a number. These messages are in numeric order.

Messages that start with 3xxx are network hardware messages. See the Problem Determination Procedures that you received with your network adapter for information on these messages.

Message Information Format

The **Explanation** for each message tells you what caused the message. The information in parentheses after the explanation tells you if the error is from the PC LAN Program menus, the PC LAN Program commands, or from another program. (You may need to know this if you call someone for help.)

The **Action** for each message tells you what you should do after you receive the message.

Some of the messages ask if you want to **Abort**, **Retry**, or **Ignore** the message or error. You should answer with one of the following responses:

- A Abort** means that the system ends the program or command that caused the error.
- R Retry** means that the system tries again because the error may not occur again.
- I Ignore** means that either the system pretends that the error did not occur and continues, or that the system passes the error to the program or command and continues. All of the network errors that start with NET return the error to the program or command.
- F Fail** means the command terminates.

Note: When using network commands, it is possible to answer 'A' for abort and still have the network command continue and possibly present another **Abort, Retry, or Ignore** or **Abort, Retry, Ignore, or Fail** request.

Prompt and Information Messages

Are you sure you want to exit the menus? (Y/N)

Explanation: (Menus) You chose to leave the menus by either pressing the Ctrl-Break key on any menu or pressing the Esc key on the Main menu.

Action: Type **Y** if you want to leave the menus or type **N** if you do not want to leave the menus.

Are you sure you wish to close the file? (Y/N)

Explanation: (Commands) You tried to close a file using the NET FILE command. Closing the file will cause errors if other people are still using the file.

Action: You should check the status of the file by entering **NET FILE**. If the file is open, check to see if the computer that has the file open is using it before you close the file.

Are you sure you want to exit the application (Y/N)?

Explanation: (Menus) You chose to leave the Message Manager for TopView application by either pressing Ctrl-Break on a menu, pressing the Esc key from the Message Tasks menu, or selecting the TopView Quit option.

Action: Type Y if you want to exit the Message Manager or type N if you do not want to exit the application.

Command completed successfully

Explanation: (Commands) The network command that you just entered executed successfully. For example, if you entered a **NET SEND *** command (broadcast message), the broadcast message was sent.

Action: Continue with your work.

Command cancelled

Explanation: (Commands) The network command that you just entered was not executed.

Action: Try the command again.

**Disk or directory in use by computer name:
xxxx**

Explanation: (Commands) The disk or directory that you **PERMITTED** for use is being used by the computer name *xxxx* (the *xxxx* will be replaced by a computer name).

Action: You can't use the disk or directory until computer name *xxxx* has finished using it.

You can force termination by pressing Ctrl-Break; however, computer name *xxxx* will get an error.

Do you want to start the network (Y/N)?

Explanation: (Commands) You've saved your network setup and have restarted DOS.

Action: If you enter **Y**, you'll start the network with your saved setup.

If you enter **N**, you will not start the network. If you want to start the network, you'll have to either use the menus or the commands to start the network and set up your computer on the network.

DOS device name is the current drive; are you sure (Y/N)?

Explanation: (Menus) The drive you specified is the drive on your computer that you're currently using. If you use the drive as a DOS name for a network device or directory, you won't be able to use the applications or programs that are in the drive.

Action: If possible, use another drive specifier. If you have to use the drive specifier for the current drive, be sure that you don't need to use the applications or programs that are in the drive.

Incorrect DOS Version

Explanation: The DOS command or program you are trying to use is not compatible with the version of DOS you started on your computer. This can occur if you are using DOS commands or programs that are installed on and shared by a Server computer across the network, and the version of DOS on the Server computer is different from the version of DOS started on your computer.

Action: Make sure the version of the DOS command or program you are trying to use is the same as the version of DOS you started on your computer. If you are using DOS commands or programs that are installed on and shared by a Server computer, and if the PC LAN Installation Aid was used to install the applications on the Server, edit the PATH statement in the NETPATH.BAT file for your computer. Change the drive letter for DOS in (*d:\DOS*) to the drive letter of DOS on your computer.

Incorrect Network Version

Explanation: The PC LAN Program command you are trying to use is not compatible with the version of PC LAN Program you started on your computer. This can occur if you are using PC LAN commands that are installed on and shared by a Server computer across the network, and the version of the PC LAN program on the Server computer is different from the version of PC LAN started on your computer.

Action: Make sure the version of the PC LAN Program command you are trying to use is the same as the version of the PC LAN Program you started on your computer. If you are using PC LAN Program commands that are installed on and shared by a Server computer, and if the PC LAN Installation Aid was used to install PC LAN on the Server, have the Server run the Network Installation Aid and choose Option 2 on the main menu (Install or Update Remote Users). After the Server has completed this step, execute your NETPATH.BAT to set up you PATH statement correctly.

Message sent ... and successfully received

or

Message sent and successfully received

Explanation: The message you sent was received by the computer that you sent it to.

Action: Continue with your work.

Name is forwarded; delete forwarded name (Y/N)?

Explanation: (Menus, Commands) You're trying to use a name on your computer that already is on the network and is forwarded.

Action: If you are starting the PC LAN Program or the Message Manager for TopView and you choose **Y**, the forwarded name is deleted. The name will be your name and you will receive messages for the name. If you choose **N**, the forwarded name isn't deleted and all messages for the name are forwarded. You won't receive any messages.

If you are trying to add the name to your computer so that you can receive messages for the name and you choose **Y**, the forwarded name is deleted. You will receive messages for the name. If you choose **N**, the forwarded name isn't deleted and all messages for the name are forwarded. You won't receive messages for the name.

Network device or directory in use; are you sure (Y/N)?

Explanation: (Menus, Commands) You're trying to stop sharing a disk, directory, or printer but other computers are using the device.

Action: If you stop sharing the device, the other computers will receive errors. Ask the other computers to stop using the device; then stop sharing the device.

No appended directories

Explanation: No directories are currently being searched by APPEND requests. The APPEND ; command was the last APPEND command executed.

Action: See the APPEND command in Chapter 8 to determine how to set the directory search list.

Permit started; Disk or directory available

Explanation: (Commands) You used the PERMIT command to share your disk with another user on the network. The disk is available for use by the other user.

Action: The other user should use the menus or the NET USE command to use your disk or directory. You won't be able to use your computer while it is PERMITTED for use on the network.

Press Ctrl-Alt-Del again to confirm

Explanation: (Menus, Commands) You've pressed Ctrl-Alt-Del to restart DOS. If you restart DOS and you're sharing devices on the network, the computers that are using your devices won't be able to use them anymore and will receive error messages.

Action: If you want to restart DOS, press Ctrl-Alt-Del again. If you don't want to restart DOS, press Ctrl-Break.

Sector not found error writing device LPTx Abort, Retry, Ignore, Fail?

Explanation: (Menus, Commands) The print redirector sent a file to the Server printer to be printed. An error was received when the Server tried to write (spool) the print file to the fixed disk. The Server gets the following error:

Sector not found error writing C drive.

Action: Choose Abort (A) and see the person responsible for the Server for additional information.

Specified drive contains the network programs; are you sure (Y/N)?

Explanation: (Commands) The drive you specified is the drive on your computer that contains the PC LAN Program. If you use the drive as a DOS name for a network device or directory, you won't be able to do any network tasks.

Action: Use another drive specifier.

Specified drive is the current drive; are you sure (Y/N)?

Explanation: (Commands) The drive you specified is the drive that you're currently using on your computer. If you use the drive as a DOS name for a network device or directory, you won't be able to use the applications or programs that are in the drive.

Action: If possible, use another drive specifier. If you have to use the drive specifier for the current drive, be sure that you don't need to use the applications or programs that are in the drive.

System printer(s) have been deleted and reconnected

Explanation: (Menus, Commands) You tried to recover from an error on the system use of

your printer or you tried to delete the system use of your printer. The entry has been deleted and then reconnected again.

Action: None. Continue with your work. This system use was created the first time that you shared your printer. It will automatically be deleted when you stop sharing your printer.

Error Messages

NET 001: Command does not exist

Explanation: (Commands) The command you used is an invalid PC LAN Program command.

Action: Check your spelling and correct it if necessary. If your spelling is correct, check the PC LAN Program reference card for the correct command.

This message also appears if the files NETWORK1.CMD, NETWORK2.CMD, or NETWORK3.CMD cannot be accessed.

NET 002: Command operand(s) incorrect

Explanation: (Commands) You tried to enter a command containing incorrect operands. This can occur on the NET START command if you use parameters that conflict with each other, or that when specified together exceed the maximum memory, sessions, or commands that can be specified.

Action: Check your typing. If your typing is correct, you may have used an incorrect operand. Refer to the command format in Chapter 7, "PC LAN Program Command Reference." Correct the command, and enter it again.

Note: Remember that operands are the parts of the command that do not start with a slash (/).

NET 003: Command parameter(s) incorrect

Explanation: (Commands) You tried to enter a command containing incorrect parameters. You may have specified a value with a parameter that doesn't have values, or you may have forgotten to specify a value.

Action: Check your typing. Make sure that you did not put a space between the slash (/) and the parameter.

If your typing is correct, refer to the command format in Chapter 7, "PC LAN Program Command Reference." Correct the command, and enter it again.

Note: Remember that parameters are the parts of the command that start with a slash (/).

NET 004: Command operand(s) missing

Explanation: (Commands) You tried to enter a command and did not use a required operand.

Action: Check your typing. If your typing is correct, you may have left out an operand. Refer to the command format in Chapter 7, "PC LAN Program Command Reference." Correct the command, and enter it again.

Note: Remember that operands are the parts of the command that do not start with a slash (/).

NET 005: Command parameter(s) missing

Explanation: (Commands) You tried to enter a command and did not use a required parameter.

Action: Check your typing to see if you mistyped a parameter. If your typing is correct, you may have left out a parameter. Refer to the command format in Chapter 7, "PC LAN Program Command Reference" to correct the command, and enter it again.

Note: Remember that parameters are the parts of the command that start with a slash (/).

NET 006: Incorrect number of operands

Explanation: (Commands) You used too many or too few operands in the command.

Action: Refer to the command format in Chapter 7, “PC LAN Program Command Reference” to correct the command, and enter it again.

Note: Remember that operands are the parts of the command that do not start with a slash (/).

NET 007: Incorrect number of parameters

Explanation: (Commands) You used too many or too few parameters in the command.

Action: Refer to the command format in Chapter 7, “PC LAN Program Command Reference” to correct the command and enter it again.

Note: Remember that parameters are the parts of the command that start with a slash (/).

NET 008: Command operand specified more than once

Explanation: (Commands) You tried to enter a command and used the same operand more than one time. You can only use each operand once with this command.

Action: Remove the extra operand, and enter the command again. You may want to refer to the command format in Chapter 7, “PC LAN Program Command Reference” to correct the command, and enter it again.

Note: Remember that operands are the parts of the command that do not start with a slash (/).

NET 009: Command parameter specified more than once

Explanation: (Commands) You tried to enter a command and used the same parameter more than one time. You can only use each parameter once.

Action: Remove the extra parameter, and enter the command again. You may want to refer to the command format in Chapter 7, “PC LAN Program Command Reference” to correct the command, and enter it again.

Note: Remember that parameters are the parts of the command that start with a slash (/).

NET 010: Command parameter value out of range

Explanation: (Commands) You specified a value for a parameter that is too high or too low. If you were entering the NET START command, you may have used correct values, but some of the values conflicted with others.

Action: Check your typing to see if you mistyped a parameter. If your typing is correct, refer to the command format of the “NET START Command” on page 7-75 to correct the command, and enter it again.

Note: Remember that parameters are the parts of the command that start with a slash (/).

NET 011: Cannot share more than three printers at one time

Explanation: (Menus, Commands) You tried to share more than three printers. You can only share three printers at one time.

Action: Check to see if you can stop sharing one of your printers.

NET 012: Cannot share a network device

Explanation: (Menus, Commands) You tried to share a device that is not attached to your computer. Or, you may have tried to share a device that is attached to your computer, but you’ve already used the DOS device name for a network device. For example, you may have a drive D, but have used D as the name for a network device that you’re using.

Action: You can't share a device that is not attached to your computer. If the device is attached to your computer but you've used the DOS device name for a network device, you must stop using the network device first.

NET 013: DOS device name and/or pathname incorrect

Explanation: (Commands) The DOS name or the directory path name you used is incorrect.

Action: Check your spelling. If your spelling is correct, see your PC LAN Program Quick Reference card for a list of DOS names for devices. See the *DOS Reference* for information about specifying directory paths.

NET 014: Cannot find name on network

Explanation: (Menus, Commands) The remote network name you specified does not exist on the network. The name was incorrect or misspelled, or the remote computer has deleted the name or has been turned off.

Action: Check your spelling. If your spelling is correct and you think the name is on the network, send a message to all computers and ask for the correct name.

NET 017: Not enough available memory

Explanation: (Menus, Commands) Your computer does not have enough memory available to let you start the network the way that you specified. Or, your computer does not have enough available memory to let you do the task that you specified.

Action: If you get this message when you start the network, you must change the way that you started the network so that you use less memory. If you get this message when you do a task, you need to make more memory available. To make memory available, you can stop sharing some devices or directories, stop using some devices or directories, or delete some names that you've added.

NET 018: Cannot forward, remote computer paused

Explanation: (Menus, Commands) You attempted to forward a name to a computer on which the Messenger was paused.

Action: Try again later, or try to forward to someone else.

NET 019: Network name limit exceeded

Explanation: (Menus, Commands) You tried to use too many network devices. Or, you tried to use devices from too many other computers.

Action: (Menus) Stop using some of the network devices and directories that you're currently using. Or, you can restart DOS and the network and choose to change the value for the number of drives you can use.

Note: If you're using devices from too many other computers when you restart DOS and the network, you have to use the NET START command to increase this number.

Action: (Commands) Stop using some of the network devices and directories that you're currently using, or restart DOS and the network and change the value of the /ASG or /SRV parameters of the NET START command.

NET 020: Device is not redirected

Explanation: (Commands) You're trying to stop using a disk, directory, or printer but you never started using the network disk, directory, or printer that you specified.

Action: Check your typing and correct it if necessary. If your typing is correct, enter NET USE to see a list of devices that you're using. Find the device you want to stop using and try the task again.

NET 021: Device or directory already shared

Explanation: (Menus, Commands) You've already shared the disk, directory, or printer with the network

and used the same network name and password for the device or directory.

Action: If you want to share the device again, you must use a different network name or a different password.

If you want to change the access rights, you must first stop sharing and then start sharing again using the new access rights.

NET 022: Number of devices or directories you can share exceeded

Explanation: (Menus, Commands) You've already shared as many disks, directories, and printers as you can.

Action: (Menus) If you're using menus and you need to share more devices and directories, you must restart DOS. Then, restart the network and change the defaults for starting (Answer "Y" to change defaults for starting). Change the value for the "Number of devices you can share."

Action: (Commands) If you're using commands, you must restart DOS and the network. Use the /SHR parameter of the NET START command to specify the number of devices and directories you can share.

NET 023: Network device or directory does not exist

Explanation: (Menus, Commands) You're trying to stop sharing a device or directory, but the device or directory isn't shared.

Action: Check your typing. If your typing is correct, display the list of devices that you're sharing and check the list for the device.

NET 025: Cannot forward; Name already forwarded once

Explanation: (Menus, Commands) The name you tried to forward messages for has already been forwarded by you to another computer. Or, the name has been

forwarded to you by another computer. The name can only be forwarded once.

Action: (Menus) Choose “Display Names that can Receive Messages” on the message tasks menu. You’ll see one of the following on the menu:

- A name in the first column with another name in the “Forwarded to Computer Name” column, meaning that you have forwarded the name to someone else.

Stop forwarding the name. Then, start forwarding to the new name.

- A name in the first column with “FORWARDED NAME” in the “Type” column, meaning that someone else has forwarded the name to you.

If you don’t want to receive messages for the name, choose “Stop receiving messages for another name” on the Message Tasks menu and delete the name from your computer.

Action: (Commands) Enter NET NAME to display the names on your computer. You’ll see one of the following on the list:

- A name in the first column with another name in the “Forwarded to Computer Name” column, meaning that you have forwarded the name to someone else.

Enter the NET FORWARD (with the /D parameter) command to delete the forwarded name. Then enter the NET FORWARD command to forward to the new name.

- A name in the first column with “FORWARDED NAME” in the “Type” column, meaning that someone else has forwarded the name to you.

If you don’t want to receive messages for the name, enter the NET NAME (with the /D parameter) command to delete the name.

NET 026: Specified drive is shared

Explanation: (Commands) You attempted to redirect a drive that has been shared or has directories that have been shared.

Action: Choose another drive letter to redirect another drive; this one cannot be used.

NET 027: Name already exists on your computer

Explanation: (Menus, Commands) You're trying to add a name to your computer, but the name you specified already exists on your computer.

Action: (Menus) Check your typing and correct it if necessary. If your spelling is correct, choose "Network status tasks" on the Main Menu and press Enter. Choose "Display names on your computer" on the Network Status Tasks menu and press Enter. A list of the names on your computer is displayed.

Action: (Commands) Check your typing and correct it if necessary. If your spelling is correct, enter NET NAME at the DOS prompt to display a list of the names on your computer. Now try to add a different name to the list.

NET 028: Number of names you can add exceeded

Explanation: (Commands) You cannot receive messages for any more names.

Action: If you want to change the number of names for which you can receive messages, you must restart DOS and the network. Use the /USN parameter of the NET START command to specify the number of names that you want to add.

NET 029: Cannot delete the computer name

Explanation: (Commands) You tried to delete the name of your computer.

Action: You can't delete the name of your computer while you are on the network. The only way to delete your computer name is to stop using the network by

switching off your computer or by restarting DOS (Ctrl-Alt-Del).

If you're trying to delete the name because you don't want to receive messages, you should do one of the following:

- Start saving messages in a save file
- Pause receiving messages.

If you want to save your messages in a file, use the NET LOG command.

If you want to pause receiving messages, use the NET PAUSE command.

NET 030: Cannot forward messages to your own computer

Explanation: (Menus, Commands)

1. You tried to forward a name on your computer to another name on your computer.
2. You tried to forward a name on your computer to itself.

Action: You can't forward names to a name on your computer; you can only forward to another computer.

You can't forward a name to itself.

NET 031: Log file or device not specified

Explanation: (Commands) You haven't specified a file or device in which to save your messages.

Action: Use the NET LOG command to specify a log file or device for your messages.

NET 032: Cannot redirect to a network path on your computer

Explanation: (Commands) You attempted to redirect to a network path on *your* computer. You cannot redirect to yourself.

Action: Specify the correct computer name.

NET 034: Message sent but message reception paused

Explanation: (Menus, Commands) The message you sent was not received because the person you sent it to has paused receiving messages.

Action: Try sending the message again later.

NET 035: Message sent but not received

Explanation: (Menus, Commands) The message you sent was not received by the other computer. The other computer may not have room to store the message, or the person at the other computer may be logging messages and the log file isn't available.

Action: Try sending the message again later.

NET 040: Cannot do this command, Receiver not started

Explanation: (Commands) You attempted to pause or continue the Receiver, but the Receiver configuration was not started.

Action: Correct the command and try again.

NET 041: System error or Network adapter card not installed or not functioning

Explanation: (Menus, Commands) Your computer does not have a network adapter, or your network adapter card is not working correctly.

Action: Check your computer to see if you have an adapter. If your computer does have an adapter, see the "Problem Determination Procedures" for the network in your *Guide to Operations* manual.

If your computer is connected to a Token-Ring Network, this message has additional possible explanations.

Explanation: One of the following is not present:

- The Token Ring Network PC Adapter Card
- The Adapter Support Interface (is not loaded in memory)
- The NETBIOS Program (is not loaded in memory)

You can load and run the Ring Diagnostic Program to verify that the adapter is connected and obtaining access to the Token-Ring Network. See the *IBM Token-Ring Network Problem Determination Guide* to use the Ring Diagnostic.

If your computer and PC LAN Program have been operating, this message has additional possible explanations.

Explanation: One of the following may be the cause:

- The adapter in your computer has been removed from the network by a Network Manager Program.
- The cables connecting your adapter to the IBM 8228 Multistation Access Unit have been disturbed (such as during problem determination on the network, or reconfiguration).

Action: Restart the PC LAN Program to cause the adapter to reattach to the network.

NET 042: Unable to do requested command

Explanation: (Commands) An unexpected program error has occurred. Or, you tried to forward a name to another computer, but an error occurred at the other computer.

Action: Retry the command. If the problem continues, the command cannot be executed.

NET 043: Cannot do this command, Receiver or Messenger not started

Explanation: (Commands) You can't do the command because you aren't using the Receiver, Messenger, or Server configuration.

Action: To start the Receiver, Messenger, or the Server, you first must restart DOS. Then, you must restart the PC LAN Program and specify the Receiver, Messenger, or Server configuration.

NET 044: Network already started

) **Explanation:** (Commands) You've already started the PC LAN Program (either by using the menus or by entering NET START). If you are using TopView, you tried to start the IBM PC LAN Program but it is already started in another TopView window.

Note: Remember, if you've saved your network setup, the PC LAN Program is automatically started for you.

Action: If you are using TopView, quit this window and switch to the IBM PC LAN Program already started.

If you are not using TopView and you want to restart the network, you must restart DOS (Ctrl-Alt-Del); then start the network again.

) If you've saved your network setup, cancel your saved setup. Then restart DOS and start the network.

NET 045: Cannot do this command, Redirector not started

Explanation: (Commands) You can't do the command because you probably haven't started the network.

Action: To start the network, you first must start DOS. Then, you must start the PC LAN Program and specify the Redirector, Receiver, Messenger, or Server configuration.

NET 046: Cannot do this command, Server not started

Explanation: (Commands) You can't do the command because you aren't using the Server configuration.

Action: To change the configuration that you're using, you first must restart DOS. Then, you must restart the PC LAN Program and specify the Server configuration.

NET 047: Cannot do this command, Messenger not started

Explanation: (Commands) You can't do the command because you aren't using the Messenger or the Server configuration.

Action: To change the configuration that you're using, you first must restart DOS. Then, you must restart the PC LAN Program and specify the Messenger or Server configuration.

NET 048: No entries in list

Explanation: (Commands) The status list that you wanted to look at doesn't have any entries in it.

Action: None.

NET 050: Directory path too long

Explanation: (Menus, Commands) The directory path you specified is too long. The path can be up to 64 characters long.

Action: Specify a shorter path and retry your command.

NET 051: Insufficient disk space

Explanation: (Menus, Commands) Your diskette or disk doesn't have enough room to complete your network command or task.

Action: Go to the DOS prompt. List the directory and see if you can delete any of the files on the disk so that you have more room on your disk. Retry your command or task after making room.

NET 056: Broadcast message too long

Explanation: (Menus) You tried to send a broadcast message that is longer than 128 characters. Broadcast messages can be up to 128 characters long.

Action: Shorten the message and send it again.

NET 057: Cannot find print queue file, PQ.SPL

Explanation: (Menus, Commands) The print queue file PQ.SPL is not in the directory with the PC LAN Program that you installed.

Action: Copy the file PQ.SPL from the PC LAN Program diskette that you received with this manual to the directory that contains your PC LAN Program. (Use the DOS COPY command to copy the file.) After you've copied the file, start the network.

NET 058: Print queue not correct

Explanation: (Menus, Commands) The print queue (PQ.SPL) in the PC LAN Program directory is incorrect.

Action: Go back to the DOS prompt. Enter the following command to delete the print queue files from the DOS/PC LAN diskette that you installed, or from your fixed disk:

```
del pq*.spl
```

Now, copy the file named PQ.SPL from the PC LAN Program diskette that you received with this manual to your DOS/PC LAN diskette, or to the network directory on your fixed disk.

After you copy the file, you can use the print queue again.

NET 059: Print queue full; File not submitted

Explanation: (Menus, Commands) The print queue for the printer you are using is full so your file was not submitted to the queue.

Action: Try submitting the file again later.

NET 060: Printer not available; Files still queued to print

Explanation: (Menus, Commands) You stopped sharing your printer. Files are still in the print queue to be printed on your printer. Until the files are printed, you can't use your printer.

Action: Wait until the files in the queue are printed; then submit your file to the printer again. If you need to print the file immediately, you can pause printing, and then submit the file again. The file will be printed.

NET 062: Print device not shared

Explanation: (Menus, Commands) You attempted to pause or continue a printer that has not been shared, or you attempted to activate a separator page on a printer that has not been shared.

Action: You must first share a printer before you can pause or continue the printer or activate separator pages.

NET 064: Cannot delete; No active separator page for this printer

Explanation: (Menus, Commands) You tried to delete a separator page, but you are not using a separator page on the printer.

Action: Check your typing. If you made a mistake, correct it and try again. If you didn't make a mistake, the separator page you specified has already been deleted.

NET 065: Cannot find name on your computer

Explanation: (Menus, Commands) You tried to delete or forward a name that does not exist on your computer.

Action: (Menus) Check the spelling of the name and correct it if it's wrong. If the spelling is correct, choose "Display names that can receive messages" to see if the name is on your computer.

Action: (Commands) Check the spelling of the name and correct it if it's wrong. If the spelling is correct, use the NET NAME command to display the names on your computer.

NET 066: File not open

Explanation: (Menus, Commands) You tried to display status for a file that isn't open. Or, you tried to close a file that isn't open.

Action: Check your typing. If your typing is correct, the file isn't open. Continue with your work.

NET 068: Name conflict with previous share

Explanation: (Menus) You're trying to share a device or directory, but you've already shared a device or directory and used the same name that you just specified.

Action: (Menus) Use another name.

Explanation: (Commands) You're trying to share a device, but you've already shared a device and used the same name that you just specified. If you're sharing a directory, you may have used the name as the network name for a directory, or you may have used the name as the short name for a directory.

For example, suppose you shared a subdirectory named \ACCOUNTS (without a short name) by entering the following command:

```
net share \accounts
```

Now, you share another subdirectory named \ORDERS\MAY\BILLS, and use a short name of ACCOUNTS by entering the following command:

```
net share accounts=c:\orders\may\bills
```

When you try to share the second subdirectory \ORDERS\MAY\BILLS, you get the message "Name

conflict with previous share” because you’ve already used ACCOUNTS as a name for a network device.

Action: (Commands) Delete the previous share or use another name.

NET 069: Cannot delete; Access code does not match

Explanation: (Commands) You tried to delete a share entry by using the wrong access mode like R, W, WC.

Action: Try again and use the correct access mode.

NET 070: Cannot delete; System share

Explanation: (Commands) You tried to delete a system share. This is not allowed.

Action: If you want to delete the system share, you must delete all shares to the same print device; then the system share is automatically deleted.

NET 072: Printer does not exist

Explanation: (Menus, Commands) You tried to share a printer but the printer does not exist.

Action: Check your typing and make sure that you typed the name correctly.

NET 073: Unable to pause; Files are open

Explanation: (Menus) Sharing can only be paused when no file activity is occurring. Therefore, if files are open on the computer, the computer cannot be paused. Everything other than the sharing can be paused on the computer, however.

Explanation: (Commands) The Server on the Server computer can only be paused when no file activity is occurring. Therefore, if files are open on the Server, the Server cannot be paused. Everything other than the Server can be paused on the Server computer, however.

Action: (Commands) Type the NET FILE command to see what users have files open. Send a message to these users asking them to stop using your network devices so that you can pause the Server.

Action: (Menus) Press the F2 key in the menus, type FILE, and press Enter to see what users have files open. Send a message to these users asking them to stop using your network devices so that you can pause the Server.

NET 074: Cannot start; Network adapter resources exceeded

Explanation: (Menus, Commands) You tried to start the IBM PC LAN Program, but the start parameters exceeded the LAN adapter/device driver maximum allowable value for sessions and/or commands.

Action: If the NET START parameters specify more sessions and/or commands than are supported by the LAN adapter/device driver, then you cannot start the network as specified. Otherwise, the LAN adapter has already been reset by another application or a failed start attempt. You should reset (Ctrl-Alt-Del) your system and start the IBM PC LAN Program again.

NET 075: Cannot find forwarded name on network

Explanation: (Menus, Commands) You have attempted to delete a forwarded name. However, the forwarded name does not exist on the network. The computer you forwarded the name to could have deleted the name, or the computer is switched off.

Action: (Menus) Check your typing. If the name you typed is correct, choose "Display names that can receive messages" to see if the forwarded name still exists on the network.

Action: (Commands) Check your typing. If the name you typed is correct, use the NET NAME command to see if the forwarded name still exists on the network.

NET 077: Cannot start; Server configuration must start from a fixed disk

Explanation: (Commands) You have attempted to start the Server configuration from a diskette. The Server configuration must be started from a fixed disk.

Action: If you do not have a fixed disk, you cannot start the Server configuration. If you have a fixed disk, follow the installation procedures in Chapter 2 to install the program on a fixed disk.

NET 078: Remote computer cannot receive messages for any more names

Explanation: (Menus, Commands) The remote computer you tried to forward your messages to cannot receive messages for any more names.

Action: (Menus) If you want to forward your messages to that computer, the user at the remote computer must restart DOS and the network, or stop receiving messages for another name. If the user decides to restart DOS and the network, he must change the value for "Number of names for messages" on the Change Defaults for Starting menu.

Action: (Commands) If you want to forward your messages to that computer, the user at the remote computer must restart DOS and the network, or delete a name on his computer before you can forward messages to that computer. If the user decides to restart DOS and the network, he should increase the /USN parameter of the NET START command.

NET 080: Unable to reconnect; All shared printers should be deleted

Explanation: (Menus, Commands) You tried to recover from an error on the system use of the printer. The entry was deleted successfully but reconnection failed.

Action: You have to delete all shared printers, then share them again later.

NET 081: Separator file cannot be on another computer

Explanation: (Commands) You attempted to specify a separator page file that was not on your computer.

Action: Try the command again, using a separator page file that is on your computer.

NET 084: Cannot Pause/Continue redirection from this TopView window

Explanation: (Menus, Commands) You can Pause/Continue redirection from the PC LAN window only.

Action: Select PC LAN from the TopView menus, then try the operation again.

NET 102: Required field incorrect

Explanation: (Menus) The information you typed in the highlighted field is incorrect.

Action: Check your spelling and correct it if necessary. Press F1 if you need help for the field.

NET 104: Required field missing

Explanation: (Menus) You didn't fill in the information for a required field.

Action: You must fill in the field. Press F1 if you need help for the field.

NET 110: Number too small or too large

Explanation: (Menus) The value you used for the field is too high or too low.

Action: Check your typing. If your typing is correct, press F1 for help.

NET 120: Device is not on network

Explanation: (Menus) You're trying to stop using a network disk, directory, or printer, but you never started using the network disk, directory, or printer that you specified.

Action: Check your typing and correct it if necessary. If your typing is correct, choose "Network status tasks" on the Main Menu. Then, choose "Display devices you are using" on the Network Status Tasks Menu. You'll see a list of devices that you're using. Find the device you want to stop using and try the task again.

NET 126: DOS drive name is shared

Explanation: (Menus) The DOS drive name you specified is a physical drive on your computer and you have either shared this drive or a directory on the drive.

Action: Choose another DOS drive name. The DOS drive name you used can't be used.

NET 128: Number of names you can receive messages for exceeded

Explanation: (Menus) You cannot receive messages for any more names.

Action: (Menus) If you're using menus and you need to receive messages for more names, you must restart DOS. Then, restart the network and change the defaults for starting. On the Change Defaults for Starting menu, change the value for the "Number of names for messages."

If you do not want to restart DOS and the network, stop receiving messages for another name to allow room for the new name.

NET 129: Cannot stop receiving messages for this name

Explanation: (Menus) You tried to stop receiving messages for the name you gave your computer.

Action: You can't stop receiving messages for the name you gave your computer.

If you don't want to receive messages, you can pause receiving messages or save your messages in a file. To pause receiving messages, choose "Pause and continue tasks" on the Main Menu and follow the menus so that you pause receiving messages. To send messages to a save file, choose "Message tasks" on the Main Menu and follow the menus to start saving messages in a file.

NET 132: Cannot use; Network device exists on your computer

Explanation: (Menus) You attempted to use a network disk or directory that exists on your own computer, and you have shared the disk or directory. This cannot be done.

Action: Check to be sure you specified the correct computer name.

NET 142: Unable to do requested task

Explanation: (Menus) An unexpected program error has occurred. Or, you tried to forward a name to another computer, but an error occurred at the other computer.

Action: Retry the task. If the problem continues, the task cannot be done.

NET 149: Cannot save network setup; AUTOUSER.BAT exists

Explanation: (Menus) You tried to save your network setup but it can't be saved, because you have a file named AUTOUSER.BAT on your diskette or in the root directory of your disk.

Action: Delete or rename your AUTOUSER.BAT file (use the DOS DEL or REN command). Save your network setup after you've deleted or renamed the file.

NET 152: Unable to save setup; Directory path contains joins or substitutions

Explanation: (Menus) You tried to save your setup, but a directory path that's part of your setup contains

joins or substitutes. You can't save joins and substitutes. The path that contains the joins or substitutes probably is for a directory that you've shared or a path to the file in which you're saving your messages.

Action: Delete any shares or stop saving messages to any path that contains joins or substitutes; then try to save your setup again.

NET 155: Cannot use; DOS drive name contains the PC LAN Program

Explanation: (Menus) The DOS drive name for the network disk or directory you specified is a physical drive on your computer that contains the network programs. These programs are needed by the screens. You cannot use this DOS drive name.

Action: Choose another drive.

NET 163: Cannot cancel network setup; Network batch file not found

Explanation: (Menus) You can't cancel your network setup because you've never saved a setup.

Action: Choose "Save network setup" to save your setup as a new setup.

NET 167: Cannot change print size; Not a network printer

Explanation: (Menus) You tried to change the mode of a printer using the network menus, but you are not using the network printer.

Action: If the printer is attached to your computer, use the DOS MODE command to change the mode of operation of the printer. If the printer is not attached to your computer, you can't change the mode until you start using the network printer.

NET 171: Unable to save setup; Save file path has changed

Explanation: (Menus) You can't save your setup because the path for the network save file has changed. You may have used the drive specifier that used to contain the save file as a drive specifier for a network device. Or, joins and substitutes may have occurred. Or, you paused disk or print redirection.

Action: If you've used the drive specifier for the save file for a network device, stop using the network device. If you've used joins and substitutes, delete them. If you paused disk or print redirection, continue them. Try saving your setup again.

NET 177: Cannot start; Sharing devices must start from fixed disk

Explanation: (Menus) You started the PC LAN Program from a diskette and attempted to share. To share devices, you must start the PC LAN Program from a fixed disk.

Action: If you do not have a fixed disk, you cannot share printers, disks, or directories. If you have a fixed disk, you need to follow the installation procedures in Chapter 2 for installing on a fixed disk.

NET 179: Cannot save/cancel setup; Network program is on a redirected drive

Explanation: (Menus) You cannot save/cancel your network setup because your network program is on a redirected device.

Action: Exit the menus, and change your current drive and directory to the drive and directory that you started the network from. If you started from diskette, be sure the PC LAN Program diskette is in the drive. Now, type NET and save/cancel your network setup again.

NET 181: Cannot specify a separator file that is on another computer

Explanation: (Menus) You attempted to specify a separator page file that is on someone else's computer.

Action: Try again, using a separator page file that is on your computer.

NET 182: Cannot save/cancel setup; Invalid network batch file

Explanation: (Menus) You attempted to save or cancel your network setup, but your network batch file has been invalidated. Namely, the “: ***” has been deleted from your network batch file.

Action: Return to DOS. Insert the “: ***” back into your network batch file as shown below:

```
:*** Network batch file ***
      { user area }
:***
echo off
```

•
•
•

See “Saving Your Network Setup” on page 4-18 for additional information about the network batch file user area.

Try to save your setup again.

NET 183: Network setup is saved; AUTOEXEC.BAT may require changes.

Explanation: (Menus) The save network setup created a new AUTOEXEC.BAT file. If you had an AUTOEXEC.BAT file, it was renamed to AUTOUSER.BAT. The new AUTOEXEC.BAT may require modification.

Action: See “Saving Your Network Setup” on page 4-18 for information about the new AUTOEXEC.BAT file, and how you may need to modify it.

NET 201: INIT ERROR xxxx

Explanation: (Menus, Commands) You don't have the programs that you need to start the network, or your computer doesn't have enough memory to start the network the way that you specified. The following is a list of INIT ERROR codes.

Code Explanations and Actions

0002 Explanation: The PC LAN Program was unable to initialize the screens. This error can occur for several reasons. The most likely reason is that the file NETWORK1.SCN is not in the directory that contains the network code. This could happen because the file was accidentally deleted or renamed. Another reason is that the contents of NETWORK1.SCN, NETWORK1.CMD, or NETWORK2.CMD have been damaged. This error is also possible when there is insufficient memory to reload the screens after starting the network.

Action: Restart the computer by using Ctrl-Alt-Del and check to see if the file NETWORK1.SCN is in the network directory. If needed, copy it to the network directory from the PC LAN Program diskette.

0003 Explanation: The PC LAN Program encountered an error when it was initializing the network adapter card for subsequent requests. This usually means that the adapter card is not functioning correctly. This error can also occur when this adapter or other adapters on other computers have been disconnected from the network cable and then reconnected.

Action: Restart the computer by using Ctrl-Alt-Del and try again. If the problem recurs, run the network adapter diagnostics.

0YXX Explanation: The Y of 0YXX indicates the failing program. Use the following codes to determine which program failed:

Code Program

- 1 PSPRINT.EXE
- 2 REDIR.EXE
- 3 Receiver.COM
- 4 SHARE.EXE
- 5 NETBIOS.COM
- 6 CACHE.COM
- 7 NET.COM

The XX of 0YXX indicates the cause of the error. The XX is a hexadecimal representation of either a DOS error code or one of the following errors:

Code Error

- 02 Network program Y not found
- 03 Network program Y not found
- 7F The PC LAN Program was unable to load program Y
- 80 Incorrect DOS version. The PC LAN Program is not compatible with this version of DOS.
- FF Not enough storage available to load program Y, or invalid parameters to program Y.

The PC LAN Program was unable to load program Y. This error can occur for several reasons. The most likely reason is that the file (program Y) is not in the directory that contains the network code. This could happen because the file was accidentally deleted or renamed. Another reason is that the contents of the file have been damaged.

If you get error 04FF, restart the computer by pressing the Ctrl-Alt-Del keys. When you start the Server configuration, reduce the /SHB and/or /SHL parameters.

If you get error 06FF, you have set the /CAC parameter too high. Restart the computer by pressing Ctrl-Alt-Del. Start the PC LAN Program with a lower value for /CAC.

Another cause for error 07XX is that the PC LAN Program was unable to reload the NET.COM

program. The most likely cause of this problem is that there was insufficient room to reload the NET command. Another cause is that the NET.COM file was renamed and that the new name was used to start the Network. For example:

```
RENAME NET.COM NETWORK.COM.
```

This is not allowed. If another name for NET.COM is desired, then use

```
COPY NET.COM NETWORK.COM.
```

Action: Restart the computer by using Ctrl-Alt-Del and check to see if the failing Y program file is in the network directory. If needed, copy it to the network directory from the PC LAN Program diskette. Otherwise, refer to the exact error code for more information.

If you still can't start the network, you may have installed the PC LAN Programs incorrectly on your disk or your diskette. Refer to Chapter 2, "Installing Your Programs" and reinstall the PC LAN Programs on your disk or diskette.

NET 202: Not enough storage to use menus; Please use commands

Explanation: (Menus) Your computer does not have enough memory to load the menus, but you can use the commands.

Action: If you don't want to use the commands, restart DOS. Then, restart the network. Change the way you choose to start the network so that you use less memory.

This error can also happen if the file NETWORK1.SCN is unavailable.

NET 206: Message cut short due to error

Explanation: (Menus, Log or Save file) An error occurred on your computer and you didn't get the entire message.

Action: Send a message to the person who sent you the message and ask them to send it again.

NET 212: Cannot perform function on remote files

Explanation: (Commands) You tried to obtain status information for a file that does not exist on your computer. The NET FILE command can only obtain status information for files that exist on your computer.

Action: Check your typing or see if that file is on your computer. If your typing is correct and the file is on your computer, you cannot obtain status information for that file.

NET 215: Print queue no longer correct; Queue has been updated

Explanation: (Menus) You tried to change the status of a file on the print queue screen, but the status of the print queue is no longer the same. The queue is automatically updated so you can see the most current status of the file.

Action: Look at the queue again and retry your request.

NET 216: Cannot release a printing file

Explanation: (Menus) You tried to release a file that's being printed. Releasing the file means that you're allowing it to print. You don't need to release the file because it's already printing.

Action: Check to be sure you've chosen the correct file.

NET 217: Cannot change status of file at this time

Explanation: (Menus) You're trying to change the status of a file in the print queue, but the file is in a state that can't be changed.

Action: Retry your request later.

NET 218: Cannot perform this task here; the network is active in another session

Explanation: (Menus, Commands) Either the network menus or a network command is active in another 3270-PC session or TopView window.

Action: Jump to the session that has the network active, and either exit the network menus or allow the network command to complete. Then retry your request.

NET 250: Required field; Cannot be left blank

Explanation: (Menus) You must fill in the information for the field.

Action: Press F1 if you need help for the field.

NET 253: Incorrect format

Explanation: (Menus) You typed an incorrect character in the command.

Action: Correct the information in the field.

NET 254: Invalid name for printer

Explanation: (Menus) The name you used is not a valid name for a printer.

Action: Check your typing and correct it if necessary. Retry your request. If you still get an error, press F1 for help with the field.

NET 255: Invalid DOS name for directory path

Explanation: (Menus) The path you used is not a valid directory path.

Action: Check your spelling and correct it if necessary. If your spelling is correct, see the command format for a directory path in the table on "PC LAN Command Parameters and Operands" on page 7-6 and correct the directory path.

NET 256: Invalid number

Explanation: (Menus) The number you used is not valid for the field. You may have typed letters instead of a number, or you may have typed a mixture of numbers and letters.

Action: Type a number in the field. Press F1 if you need help.

Note: If the field asks for a memory size, you can enter the letter K (for K byte) beside the number. For example, you would enter **60K** to indicate 60K bytes.

NET 259: Invalid format

Explanation: (Menus, Commands) The format you used for the command is incorrect.

Action: (Menus) Check your typing and correct it if necessary. Retry your request. If you still get an error, press F1 for help with the field.

Action: (Commands) If the command is a network command, see the *PC LAN Program Quick Reference Card* and correct the command.

NET 260: Invalid format for a DOS file name

Explanation: (Menus) You typed an incorrect DOS filename. You may have used the wrong format for the name or used an invalid character in the name.

Action: See the format for a file name in the table "PC LAN Command Parameters and Operands" on page 7-6, and correct the file name.

NET 275: Message area full

Explanation: (Menus) You've typed as many characters as you can in your message.

Action: Make the message shorter, or end the message.

NET 278: Cannot access save/retrieve file

Explanation: (Menus) If you were on the View Messages menu when you received the message, one of the following happened.

- You tried to view a message from your save file using F5 or F6, but either you haven't started saving messages yet or your save file has been deleted.
- You tried to save a message to your save file using F7, but you haven't started saving messages yet.
- A DOS error occurred and prevented access to the save file.

Action: Go to the Message Tasks menu; select and follow the menus to start saving messages to a file.

If you were on the Send Messages menu when you received the message, one of the following happened.

- You tried to retrieve a message from your retrieve file using F6, but either you haven't started saving messages yet or your retrieve file has been deleted.
- You tried to retrieve a message using F5, but the file you specified does not exist.
- A DOS error occurred and prevented access to the retrieve file.

Action: Create a file to retrieve messages and then go to the Send Messages menu and select "Retrieve First" specifying the file you just created.

NET 279: No more waiting messages to view

Explanation: (Menus) You've viewed all the waiting messages you had. You can't view them again.

Action: None

NET 280: Message area for broadcast message full

Explanation: (Menus) You've typed as many characters as you can in your message. Broadcast messages cannot be more than 128 characters in length.

Action: Make the message shorter, or end the message.

NET 281: No more saved messages to view/retrieve

Explanation: (Menus) You've viewed/retrieved all the saved messages from the file.

Action: If you want to see the messages again, press F5 to view/retrieve the first saved message from the file. Press F6 to view/retrieve the next saved message. Continue pressing F6 until you've viewed/retrieved all of the messages.

NET 282: Cannot delete message; Not viewing saved/retrieve message

Explanation: You attempted to delete a saved message; however, you are not currently viewing a saved message. Only the message being viewed/retrieved can be deleted.

Action: If there is a saved message you wish to delete, press F5 and F6 to view/retrieve this message. Then delete it.

NET 286: Cannot access printer

Explanation: (Menus) You tried to print a message on the printer, but the printer returned an error.

Action: Check to see if the printer is on and try again.

NET 287: Retrieve file not specified

Explanation: (Menus) You tried to retrieve the next message without retrieving the first message.

Action: Specify a retrieve file by doing a Retrieve First (F5).

NET 298: Incorrect APPEND Version

Explanation: (Commands) The version of the APPEND command that was recently invoked does not match the version of the APPEND command loaded initially.

Action: Make sure all copies of the file APPEND.COM found on your system and through your path statements are the same. This can be done by comparing the date and time of the file.

NET 299: APPEND / ASSIGN Conflict

Explanation: (Commands) The ASSIGN command has been executed before the first APPEND command. The APPEND command must be executed once before the ASSIGN command can be executed.

Action: Reset the system (Ctrl-Alt-Del), and ensure that APPEND is executed before the first ASSIGN command is issued.

NET 310: Unable to access NETWORK file

NET 312: Unable to access NETWORK file

Explanation: (Menus, Commands) The PC LAN Program is unable to access one of the following files:

NETWORK1.CMD, NETWORK2.CMD,
NETWORK3.CMD, NETWORK1.SCN, NETWORK.MSG

This could be because:

- The file was deleted
- The diskette door is open
- There aren't enough open file handles
- There isn't enough memory to load the file.

Action: Do the following:

- Check that the correct diskette is in the drive and the drive door is closed.
- Increase the number of FCBs and FILES that can be opened concurrently by changing the number specified in the CONFIG.SYS file.
- Make sure you have enough memory available to load the configuration you requested.
- Reinstall the PC LAN Program because you probably have an error on the diskette. Follow the instructions in Chapter 2 to reinstall the PC LAN Program.

NET 336: Message Manager for TopView Already Started

Explanation: You've already started the Message Manager for TopView application.

Action: To restart the Message Manager, end the application and start it again.

NET 337: Unable to access NETWORK file

Explanation: The Message Manager for TopView application is unable to access one of the following files:

NETWORK.MSG, NETWORK.PLB, or NETWORK.TVM.

This could be because the wrong diskette is in your drive, the file was deleted, the diskette door is open, or there aren't enough open file handles.

Action: Check to be sure that you have the correct diskette in the drive and the drive door is closed. If the diskette is correct, increase the number of FCBs and files that can be opened concurrently by changing the number specified in the CONFIG.SYS file. Otherwise, you have an error on the diskette and must reinstall the Message Manager for TopView application.

NET 340: Error on computer name - restart application

Explanation: (Menus) You tried to delete a computer name from the network, and a critical network error occurred for the specified name. The error could be in the network adapter, or as a result of many network applications contending for network resources.

Action: End the Message Manager for TopView application and start it again.

NET 341: Cannot start; Insufficient network resources

Explanation: You tried to start the Message Manager for TopView application, but the number of available network resources is insufficient.

Action: Do one of the following:

- Restart the PC LAN Program and specify a larger /SES and /CMD parameter value. Then restart the Message Manager application.
- Use fewer network resources by decreasing the value for the /USN parameter in the Program Information File for the Message Manager application. Try to start the application.

Note: For information on updating the Program Information File, see “Changing the Start Parameters for Message Manager” in chapter 11.

NET 342: Message Manager for TopView not started

Explanation: You tried to start the Message Manager for TopView application from the DOS command line. This application must be started from the TopView Start a Program menu.

Action: Use the TopView Start a Program menu to start the Message Manager for TopView application. See Chapter 11, “Using TopView with the PC LAN Program” for further information.

NET 351: Invalid DOS function

Explanation: (Menus, Commands) The command or task you specified issued an illegal DOS function.

Action: Refer to the *DOS Reference* to correct the function and try again.

NET 352: File not found

Explanation: (Menus, Commands) A file named in the command or task does not exist in the directory or the drive that you specified.

Action: Check your typing. If your typing is correct, check to see what drive or directory contains the file and correct the command or field in the menu.

NET 353: Path not found

Explanation: (Menus, Commands) A drive or directory named in the command or task does not exist or is invalid.

Action: Check your spelling and make sure you used the correct syntax for the path. If your spelling and syntax is correct, you may have used the wrong path or the path may not exist any more.

NET 354: Too many open files

Explanation: (Menus, Commands) You've exceeded the number of files that DOS can have open. You can't perform your request.

Action: Retry the command or task. If you are unsuccessful, go to the DOS prompt. Change the value for FILES in your CONFIG.SYS file. Restart DOS and the PC LAN Program. Retry your request.

NET 355: Access denied

Explanation: (Menus, Commands) You can't access the disk, directory, or file because you don't have the correct access right for the file.

(TopView) You attempted to either use or cancel a device that was originally specified by another application running under TopView, or you attempted to access a file or device currently opened or owned by another task.

Action: Find out what the access right for the file is. You may have to change the access right.

(TopView) If you are trying to cancel a device, go to the PC LAN menus and try the task again.

NET 358: Insufficient memory

Explanation: (Menus, Commands) Your system doesn't have enough memory available to do your request.

Action: (Menus, Commands) If you get this message when you start the network, change the way you start the network so that you use less memory. If you get this message when you do a task, you need to make more memory available. To make memory available, you can stop sharing some devices or directories, stop using some devices or directories, or delete some names that you've added.

Action: (Message Manager for TopView) Do one of the following:

- Increase the minimum, maximum, and system memory values in the Program Information File for the Message Manager application.
- Use fewer network resources by decreasing the value of the /USN parameter in the Program Information File for the Message Manager application. Try to start the application again.

Note: For information on updating the Program Information File, see "Changing the Start Parameters for Message Manager for TopView" in chapter 11.

NET 363: Invalid data

Explanation: (Menus, Commands) The data you're using is invalid for DOS.

Action: Retry the command using valid data.

NET 364: Invalid device

Explanation: (Menus, Commands) The device you specified is not a device on your computer.

Action: Use a different device name and try your request again.

NET 365: Attempt to remove current directory

Explanation: (Menus, Commands) You attempted to erase the directory that you're using. You can't erase the directory while you are using it.

Action: You must get out of the directory, erase its contents, and then erase the directory.

NET 367: No more files.

Explanation:

The command or task you attempted caused the limit of concurrently opened files to be exceeded. This limit could either be exceeded on your computer or, if the file is on a network disk, on the Server computer.

Note: See the FILES command in Chapter 9 for more information.

Action: If the file being accessed is on your computer, increase or add a FILES = parameter to your CONFIG.SYS file. If you are adding to an existing number, specify a number larger than 8 (the default). If the file is a network file, try executing the command or task specifying a local file. If this works, the problem exists on the Server computer. Inform the user at the Server computer of this problem.

NET 368: Write protected diskette

Explanation: (Menus, Commands) The diskette you are using is write-protected, so you can't write information to the diskette.

This message appears if:

- You try to write to a diskette that's already been written on as a double-sided diskette in a single-sided drive
- You try to use a diskette that's been formatted at 9 sectors-per-track with a version of DOS lower than DOS Version 2.0 or Version 2.1.

Action: Check your diskette to be sure you want to write on the diskette. If the diskette has a write-protect tab, you must remove the tab to write on it.

NET 369: Bad unit

Explanation: (Menus, Commands) A device driver was passed an invalid subunit number.

Action: Retry your request. If you get the same message, contact the dealer who you purchased the program from.

NET 370: Drive not ready

Explanation: (Menus, Commands) The drive you specified isn't ready to use.

Action: Check the drive and make sure that the door is shut. Retry your request.

NET 371: Bad command

Explanation: (Menus, Commands) A device driver issued an invalid command to a device.

Action: Retry (R) your request. If you get the same message, review your device interface specification and DOS driver implementation and make sure that everything you're trying to do is supported.

NET 372: Data error; Bad CRC

Explanation: (Menus, Commands) DOS couldn't read or write the data correctly.

Action: If you are using diskettes, this message usually means that the diskette has developed a defective spot. Try the operation again. If you get the same message again, replace the diskette that you are using.

NET 373: Bad call format

Explanation: (Menus, Commands) A device driver was passed an incorrect length request header.

Action: If you are using a purchased device driver, contact the dealer who you purchased the device driver from.

NET 374: Seek error

Explanation: (Menus, Commands) The fixed disk or diskette drive couldn't find the correct track on the disk.

Action: Make sure the diskette is properly inserted in the drive and that the drive door is shut. Retry (R) your request. If the diskette is inserted correctly and you get the same message, use a different drive and rerun the command. If you still get the message, run CHKDSK.

NET 375: Non-DOS disk

Explanation: (Menus, Commands) The file allocation table contains invalid information. The disk needs to be reformatted.

Action: Try running CHKDSK to see if any corrective action is possible. If you have to reformat the disk, you will lose the files that are on the disk.

NET 376: Sector not found

Explanation: (Menus, Commands) The sector containing the data could not be located on the disk.

Action: Retry your request. If you get the same message, retry the request with a different disk.

NET 377: Printer is out of paper

Explanation: (Menus, Commands) The indicated printer is either out of paper or is not switched on.

Action: If the printer is out of paper, put the printer offline and load more paper. If the printer is switched off, switch on the printer and make sure the printer is online. Retry your request.

NET 378: Write fault

Explanation: (Menus, Commands) DOS couldn't write the data to the device.

Action: If you are trying to print to a network printer, make sure that you "start using" that printer before printing.

If you are trying to write to a diskette, make sure your diskette is properly inserted in the drive. If the diskette is in the drive correctly, choose retry (R). If you get the same message, rerun the command with a different disk.

NET 379: Read fault

Explanation: (Menus, Commands) DOS couldn't read the data from the device.

Action: If you are using diskettes, make sure your diskette is in the drive and that the drive door is shut. Retry (R) your request. If you get the same message, retry the command with a different disk.

NET 380: General failure

Explanation: (Menus, Commands) An unexpected error has occurred.

Action: Abort (A) the request.

NET 381: Sharing violation

Explanation: (Menus, Commands) You're trying to access a file that's currently being used by someone else.

Action: Retry your request later.

NET 382: Lock violation

Explanation: (Menus, Commands) The command or task you are running attempted to lock or access part of a file that is already locked.

Action: Retry the request later.

NET 383: Invalid disk change

Explanation: (Menus, Commands) The diskette in the high capacity drive was changed while files were still open on the diskette.

Action: Reinsert the correct diskette.

NET 384: FCB unavailable

Explanation: (Menus, Commands) You tried to open more file control blocks than were specified by the FCBS command in your CONFIG.SYS file.

Note: See the FCBS command in Chapter 9 for more information.

Action: Abort (A). Then, increase the value for FCBS in your CONFIG.SYS file.

NET 408: File creation error

Explanation: (Menus, Commands) An unsuccessful attempt was made to add a new filename to the directory or to replace a file that was already there.

Action: If the file was already there, check whether the file is marked read only and cannot be replaced. Otherwise, run CHKDSK to determine if the directory is full, or if some other condition caused the error.

NET 410: Limit exceeded

Explanation: (Menus, Commands) The command or task you attempted could not be performed because a

network data structure limit is exceeded. This can occur when you attempt to use more than the specified number of Servers, or when you attempt to use more network paths than specified.

Action: (Menus) Stop using some of the network devices and directories that you're currently using. Or, you can restart DOS and the network and choose to change the value for the number of drives you can use.

Note: If you're using devices from too many other computers, you have to use the NET START command.

Action: (Commands) Stop using some of the network devices and directories that you're currently using, or restart DOS and the network and change the value of the /ASG or /SRV parameters of the NET START command.

NET 411: Device/Path in use

Explanation: (Menus, Commands) You tried to use a device or a path that is already in use.

This error can also be the result of a previous NET USE, SUBST, or JOIN command using the device or path specified.

Action: You must use another device, path, or drive letter.

If this message appeared as a result of executing a series of NET USES in a batch file for the purpose of re-executing some commands that failed, it may be appropriate to ignore this message.

NET 415: Network data fault error

Explanation: (Menus, Commands) A disk error occurred while you were writing information to a file on a network disk. The most probable cause for this error is that the network disk is full. (Other disk errors can cause this problem too).

Action: Check to see if the disk that you are writing to is full by using the DOS DIR command to list the

contents of the network disk. If the disk is not full, try performing the request again.

NET 416: Sharing buffer exceeded

Explanation: (Menus, Commands) While you were trying to access a file on the Server computer, the buffer area for file sharing and block locking on the Server computer was exceeded.

Action: Choose **Retry**. If you receive the error again, the user at the Server computer should restart the PC LAN Program and increase the size of the /SHB or /SHL parameters of the NET START command.

NET 456: Network session closed

Explanation: (Menus, Commands) A problem has occurred on the network computer that you are attempting to access. This could occur if the network computer was turned off or restarted. If you are attempting to use a network disk or printer, this device may have been removed from the network.

Action: Try the command again later. If unsuccessful, try sending a message to the user of the network computer. Tell the user about the problem you are having accessing the network computer.

NET 459: Too many network names

Explanation: (Menus, Commands) You have added the maximum number of names (16) that can be added to your network adapter card. This could be caused by an application running on the computer that uses the network too.

Action: You will have to remove a name before you can add another one. Names are removed from your network adapter card when you stop receiving messages for another name using the full screen interface. This is done with the NET NAME /D command if you are a command user.

NET 460: Cannot delete name now, will automatically be deleted later

Explanation: (Menus, Commands) The name you attempted to remove cannot be deleted immediately because sessions are still established with this name. This name will be automatically deleted when the sessions are closed.

Action: None. The name will be removed from the card once all sessions are closed.

NET 466: Name already exists on the network

Explanation: (Menus, Commands) You're trying to add a name to your computer, but the name you specified already exists on another network computer.

Action: Use a different name.

NET 468: Session ended abnormally

Explanation: (Menus, Commands) The command was unable to end successfully because the session between your computer and the network computer was terminated before the function ended. This error may occur when the network computer powers down, or when the network computer is too busy to handle your request.

Action: Retry the command. If the error continues, you cannot do the command.

NET 473: Network command completed while being cancelled

Explanation: (Menus, Commands) A network command was canceled after it had already ended.

Action: None.

NET 475: Active command cannot be cancelled

Explanation: (Menus, Commands) The command is executing and you can't cancel it.

Action: None. Let the command finish.

NET 476: Netbeui not loaded

Explanation: The NETBIOS Program has not been located in PC memory. The program must be loaded into memory before the PC LAN Program.

Action: Make sure your LAN adapter has been properly configured for the NETBIOS interface before loading the PC LAN Program.

NET 477: Unexpected Adapter Close

Explanation: The Token-Ring Network Adapter has been closed. This means that the adapter is no longer attached to your network. The adapter could be closed for one of the following reasons:

- It detected an internal defect.
- It was forced off the network by a network manager program.

Action: See “NET 700 Errors for Token-Ring Network” on page 14-3 to obtain further information to determine the reasons for the adapter being closed.

NET 500: Network not started

Explanation: (Commands) You tried to use a network command but you haven't started the network.

Action: Use the menus or the NET START command to start the network. See Chapter 4, "Setting Up and Using the PC LAN Program" or Chapter 7, "PC LAN Program Command Reference" if you need instructions.

NET 501: Cannot start network; Program conflict

Explanation: (Menus, Commands) You have started a program (such as SHARE, REDIR, PRINT, PSPRINT, IBM DISK CACHE, ASSIGN, TopView, or PC 3270 Emulation Program 3.00) that conflicts with the PC LAN Program. The PC LAN Program must be started before any of these programs (except the IBM DISK CACHE).

Action: To start the PC LAN Program, exit TopView, PC 3270 Emulation Program 3.00, or reset (Ctrl-Alt-Del) your computer. Then try starting the PC LAN Program again; if you are starting as server, try specifying /CAC:0.

NET 700: SYSTEM ERROR ; XXXX@YYYY:ZZZZ

Explanation: (Menus, Commands) The PC LAN Program has detected either an internal program error or a hardware error. The X's, Y's, and Z's are replaced by numbers telling you more about the error.

The X's represent the error code. Error code 04xx indicates a network adapter error. See the *PC Network Technical Reference* for a definition of xx.

If the xx field of the NET 700 message is greater than Hex 4E, the error must be from a Token-Ring Network Adapter. For additional information, see "NET 700 Errors for Token-Ring Network" on page 14-3. All other error codes are internal PC LAN Program failure codes and have no useful meaning to users.

The Y's and Z's represent the hexadecimal address of the error.

Action: Try to end your application. Then, restart DOS (Ctrl-Alt-Del) and restart the PC LAN Program. Set up your computer on the network again. If the error occurs again, see the dealer who sold you the PC LAN Program and your network adapter.

NET 750: System Error; . . .

Explanation: (Menus, Commands) The . . . is replaced by error information depending on the cause of the error. Here are a few examples:

- NET 750: System error; not same device
- NET 750: System error; file already exists
- NET 750: System error; fail request chosen
- NET 750: System error; invalid parameter.

You have an internal program or hardware error.

Action: Try to end your application. Then, restart DOS (Ctrl-Alt-Del) and restart the PC LAN Program. Set up your computer on the network again.

IMPORTANT: If the problem continues, contact your dealer or the IBM representative who sold you the PC LAN Program and your network adapter and report this error.

NET 801: Remote computer not listening

Explanation: (Menus, Commands) There are a number of reasons for this error. Sometimes this error is a temporary situation; other times it is an error *by the user of the command*. This error can occur when you are attempting to:

- Send a message to a computer that has been started as a Redirector. A Redirector cannot receive messages.
- Use a network device being PERMITTED to someone other than your computername.
- Access a computer that is busy servicing other requests (temporary).

- Use a network device on a computer that has no sessions available to allow you to use the device.
- Use a network device on a Redirector computer.
- Share your printer when the maximum number of remote computers are already using your computer. When you share your printer, the PC LAN Program automatically allows you to use your printer as a redirector. However, the PC LAN Program on your computer doesn't have enough memory available for another redirector.

Action: Retry the command. If the error occurs again, the Server probably has no sessions remaining to service your requests. The Server computer should restart the network specifying a larger /SES number.

If you are the Server trying to share your printer, start the PC LAN again and specify a larger number for the /RDR parameter of the NET START command.

NET 802: Duplicate name on network

Explanation: (Menus, Commands) Someone else on the network has the same name you've used.

Action: Use a different name.

NET 803: Network path not found

Explanation: (Menus, Commands) The network path you specified doesn't exist.

Action: Check the path and correct it.

NET 804: Network busy

Explanation: (Menus, Commands) The network is busy and can't do your request.

Action: Retry your request at another time.

NET 805: Network device no longer exists

Explanation: (Menus, Commands) The device you attempted to access is no longer available. The device is no longer available because the computer that shared the device may have reset the machine, powered off the machine, or deleted the shared device.

The error may occur if you explicitly attempt to access the device, if you start a program and the invalid drive exists in your DOS PATH statement, or when your program ends.

Action: (Menus) Abort the request. Go to the menus and choose Disk or Directory Tasks on the Main menu. Then, choose Display devices you are using on the Disk or Directory Tasks menu. You'll see a list of the devices you are using. Note which devices have a status of ERROR. Now, go to the Start or Stop Using Network Disk or Directory menu and stop using all the devices that had a status of error.

If you want to use the device again, send a message to the person that shared the device and find out why the device is no longer available.

Check with the person responsible for the Server computer about the availability of the device. The person responsible for the Server computer should notify the users before stopping a device or the Server itself.

When this happens, "stop using" before your next attempt to start using again.

Action: (Commands) Abort the request. Enter the NET USE command to see a list of the devices you are using. Enter the NET USE /D command for all the devices that have a status of ERROR.

If you want to use the device again, send a message to the person that shared the device and find out why the device is no longer available.

Check with the person responsible for the Server computer about the availability of the device. The person

responsible for the Server computer should notify the users before stopping a device or the Server itself.

When this happens “stop using” before your next attempt to start using again.

NET 806: NETBIOS command limit exceeded

Explanation: (Menus, Commands) The network has too many NETBIOS requests waiting to be performed.

Action: Retry your request at another time. If the error continues, restart the network and specify a larger /CMD parameter value.

NET 807: System Error; NETBIOS error

Explanation: (Menus, Commands) Your network adapter has an error or the cable is not connected.

Action: Check the cable to see if it is connected to your network adapter correctly. If the cable is not a problem, see your dealer and have your adapter checked.

If your computer is connected to a Token-Ring Network, this message has additional possible explanations.

On the Token-Ring Network, this error can indicate one of the following:

Explanation A duplicate adapter address (also called ring address).

Action: If your installation uses locally administered address for adapters, verify that you have used the correct address. If so, contact your network administrator to determine who is using your assigned address.

If your installation does not use locally administered addresses, there are two adapters with the same address permanently assigned.

Explanation: One of the errors described under message NET 700 for Token-Ring Network has occurred.

Action: See “NET 700 Errors for Token-Ring Network” on page 14-3 for additional information.

NET 808: Incorrect response from network

Explanation: (Menus, Commands) You attempted to do a network task with a remote computer and received an error. The remote computer can't do the task you specified.

Action: Check to see if you're specifying the correct remote computer for the command or task you are attempting. If not, specify the correct computer. If you were specifying the correct computer, check to see if an application program is running along with the IBM PC LAN Program on the remote computer. The application could be returning the incorrect response.

NET 809: Network request not supported

Explanation: (Menus, Commands) You attempted to do a network task with a remote computer and received an error. The remote computer can't do the task you specified.

Action: Check to see if you're specifying the correct remote computer for the command or task you are attempting. If not, specify the correct computer. If you were specifying the correct computer, check to see if an application program is running along with the IBM PC LAN Program on the remote computer. The application could be returning the incorrect response.

NET 810: Unexpected network error

Explanation: (Menus, Commands) An unexpected network error occurred.

Action: Try to end your application. Then, restart DOS by using Ctrl-Alt-Del and restart the PC LAN Program. Set up your computer on the network again.

IMPORTANT: If the problem continues, contact your dealer or the IBM representative who sold you the PC

LAN Program and your network adapter and report this error.

NET 811: Incompatible remote adapter

Explanation: (Menus, Commands) You tried to communicate with another computer and had trouble because either your network adapter or the remote network adapter is incompatible.

Action: Try to communicate with another computer. If the communication fails, make sure that the network is set up properly. If you succeed in communicating with another computer, then check the setup of the computer you had trouble with.

NET 812: Print queue full

Explanation: The printer has 99 files queued to be printed on it and your file was the 100th file. The print queue can only hold 99 files.

Action: Retry your request, or wait until one of the other jobs is done and resubmit the request again.

NET 813: Not enough space for print file

Explanation: (Menus, Commands) You tried to submit a print file to a PC LAN printer, but the computer that's sharing the printer doesn't have enough disk space to keep the file until it is printed.

Action: Retry your request. If you get an error message again, abort the request and resubmit the file at another time.

NET 814: Print file was cancelled

Explanation: (Menus, Commands) The print file that you submitted for printing on a network printer was cancelled by the user at the Server computer.

Action: Type **A** for abort and try again later.

NET 815: Network name was deleted

Explanation: (Menus, Commands) The device you attempted to access is no longer available. The device is no longer available because the computer that shared the device may have reset the machine, powered off the machine, or deleted the shared device.

The error may occur if you explicitly attempt to access the device, if you start a program and the invalid drive exists in your DOS PATH statement, or when your program ends.

Action: (Menus) Abort the request. Go to the menus and choose Disk or Directory Tasks on the Main menu. Then, choose Display devices you are using on the Disk or Directory Tasks menu. You'll see a list of the devices you are using. Note which devices have a status of ERROR. Now, go to the Start or Stop Using Network Disk or Directory menu and stop using all the devices that had a status of error.

If you want to use the device again, send a message to the person that shared the device and find out why the device is no longer available.

Check with the person responsible for the Server computer about the availability of the device. The person responsible for the Server computer should notify the users before stopping a device or the Server itself.

When this happens, "stop using" before your next attempt to start using again.

Action: (Commands) Abort the request. Enter the NET USE command to see a list of the devices you are using. Enter the NET USE /D command for all the devices that have a status of ERROR.

If you want to use the device again, send a message to the person that shared the device and find out why the device is no longer available.

Check with the person responsible for the Server computer about the availability of the device. The person responsible for the Server computer should notify the users before stopping a device or the Server itself.

When this happens, “stop using” before your next attempt to start using again.

NET 816: Incorrect password

Explanation: (Menus) The password you specified is not correct.

Action: Check your typing. If your typing is correct, the password may have changed.

NET 817: Network device type incorrect

Explanation: (Menus, Commands) The local device type is different from the PC LAN device type. You have attempted to use a network disk or directory and have used device LPT1-3 as a DOS name, or used a network printer and have used device A-Z as a DOS device name. You can also get this error if you try to open an installable character device driver that is installed on a Server computer across the network.

Action: Retry the request with the corrected device name.

NET 818: Network name not found

Explanation: (Menus, Commands) The network name you specified is incorrect.

Action: Check the name to be sure that you’ve spelled it correctly. If the name is correct, the name is no longer on the network.

NET 819: Network name limit exceeded

Explanation: (Menus, Commands) You have tried to redirect too many devices.

Action: (Menus) Stop using some of the network devices and directories that you’re currently using. Or, you can restart DOS and the network and choose to change the value for the number of drives you can use.

Note: If you're using devices from too many other computers, you have to use the NET START command.

Action: (Commands) Stop using some of the network devices and directories that you're currently using, or restart DOS and the network and change the value of the /ASG or /SRV parameters of the NET START command.

NET 820: NETBIOS session limit exceeded

Explanation: (Menus, Commands) The Network BIOS local session table is full. You can't do your request.

Action: Retry your request at another time. If the error continues, restart the network and specify a larger /SES parameter value.

NET 821: Sharing temporarily paused

Explanation: (Menus, Commands) The Server either has not completed startup, or is paused and therefore is not accepting network requests.

If you are the Server and are attempting to continue message reception, your Server is paused.

Action: Retry the request. If you get the message again, abort (A) and retry (R) your request later.

If you are the Server, you must continue sharing or you cannot continue message reception.

NET 822: Print of disk redirection is paused

Explanation: (Menus, Commands) The printer or disk redirector is paused and therefore your request cannot be performed.

Action: Use the NET CONT command to continue print or disk redirection, then try again.

NET 823: Network request not accepted

Explanation: (Menus, Commands) An error was returned by a network computer indicating that this

computer does not support the network request specified. The PC LAN Program verifies each network request to determine if the request is properly formatted.

Action: Check to see if you're specifying the correct remote computer for the command or task you are attempting. If not, specify the correct computer. If you were specifying the correct computer, check to see if an application program is running along with the IBM PC LAN Program on the remote computer. The application could be returning the incorrect response.

NET 825: Network data fault

Explanation: (Commands) You tried to write data to a network disk or diskette that is full.

Action: Type **A** for abort, and tell the user at the Server computer that the disk or diskette is full.

Appendix B. Guidelines for Application Developers

If you are developing applications for the PC LAN Program, you should use the regular DOS interfaces to ensure compatibility. In every case, you should use the highest-level interface for any given function to ensure portability and upward compatibility of applications. For example, you should use the DOS Interrupt 21H Open (3DH) and Write to a File or Device (40H) function calls instead of Interrupt 17H to print characters on LPT1. See Chapter 5, “DOS Interrupts and Function Calls” in the *DOS Technical Reference* for more information about DOS interfaces.

In addition to the DOS guidelines, the PC LAN Program has special requirements. These requirements are in the following categories:

- General guidelines for the networking environment
- Multiuser considerations
- Coexistence of applications with the PC LAN Program (use of resources and conflicts in using certain functions)
- Application setup and initialization
- Application-to-application communication on the network
- Error recovery and problem determination.

General Guidelines for the Network Environment

In general, you should code applications on the PC LAN so that they can be run alone or in a networking environment. Applications should not be coded with the assumption that the application will be the only application or program running on the computer.

Applications should be able to access their data files whether the data files are available locally or across the network. If network support is coded into the application, you should include code to prompt the user for network-specific information.

You should code applications so that, for loading the program, the application can reside on either a diskette or a device that is shared on the network.

Use of the APPEND Command

The APPEND command will direct a search for all files, with extensions other than EXE, COM, or BAT, in the appended directories only on the following function calls:

Code	Function Call
0FH	FCB File Open
3DH	Handle File Open
23H	Get File Size

Note: If you are using DOS Version 3.30, use the DOS version of the APPEND command instead of the PC LAN Program version of the APPEND command. To do this, make sure that your DOS directory is before your PC LAN Program directory in your PATH statement.

Use of the Display Controller

An application should not reprogram the display controller directly. An application should establish all mode information with BIOS calls (INT 10H). Failure to do this can cause the PC LAN Program's network request key (Ctrl-Alt-Break) support to improperly restore an application screen image. If you must reprogram the display controller mode, make sure any changes are recorded in the display variables kept by the BIOS at segment 0040H.

Any changes set into this area should be tested with the PC LAN Program active to verify that the changes are effective. To verify, send a message to the computer with the data area changed. View the message with the network request keys (Ctrl-Alt-Break) and exit the menus. Check for proper restoration of the display.

Physical Resource Sharing Applications

Physical resource sharing applications use a remote device, such as a disk, directory, or printer, through the redirector. Some of the messages and operating instructions of the application may not be meaningful in a network environment. For example, instructions that reference a device may not be applicable if the device is a remote device.

The PC LAN Programming interfaces provide information about the status of remote and local devices. The application can use these interfaces to issue messages that are meaningful to the computer, whether the computer is using a local device or redirecting to a remote device. For example, if an error occurs because data is not available, a computer that is using a local drive may receive a message telling the user to insert the correct diskette. However, this message won't be applicable to a computer that is using a remote drive. In the case of a remote drive, the computer should receive a message telling the user that the diskette that needs to be inserted is not available.

You may want to use the following interfaces in physical resource sharing applications:

- DOS Extensions

(See the *DOS Technical Reference* for more information.)

- Get Extended Error Code
- Create Unique File
- Create New File
- Get Machine Name
- IOCTL Is Changeable

- Redirector Extensions

(See the Interrupt 2FH function calls or the *DOS Technical Reference* for more information.)

- Get Assign List Entry
- IOCTL Is Redirected Block (Interrupt 21H)
- IOCTL Is Redirected Handle (Interrupt 21H)
- Installation Check (Interrupt 2AH)
- Installation Check (Interrupt 2FH)

- EXEC System Call

(See Chapter 7, “PC LAN Program Command Reference” for more information about the following commands.)

- NET USE (PC LAN Program Command)
- NET SHARE (PC LAN Program Command)
- MODE (DOS Command)
- PERMIT (DOS Command).

Multiuser Considerations

Using File Control Blocks (FCBs) is not recommended because FCBs do not support any of the new sharing modes or the file locking functions. Most network applications should recognize that multiple network users of files is a common occurrence and should support this environment. To do this, applications must use the DOS sharing modes that are only available with the DOS Handle (Version 2.0 and later) type calls.

In addition, you should consider multiuser access to shared files. The DOS Open function (3DH) details the available sharing modes. The proper mode should be used. In general, shared data (such as help text and program overlays) should be accessed as read-only with deny-write sharing. Files that are changed should be opened Read-write with either deny-all or deny-none access. The access mode should be determined by the way the application updates the file. If the application uses Record (Block) locks to control concurrent updates by multiple programs, then deny-none is the correct choice.

Most applications require temporary work files to run. In most cases, the temporary files are not multi-user shared files. If the application uses a fixed name for these files and is run concurrently by several users, problems can occur. To fix these problems, all work files should be created by the DOS Create Unique File function (5AH) to ensure that each occurrence of the application will get a private copy of the work file.

Many applications check to see if a file exists. If the file does not exist, the application creates the file. Creating the file can cause problems in a multi-user environment because one application checks for the file and finds that it does not exist, but before the file can be created, another application (or another occurrence of the same application) creates the file. In this case, the first application will end up destroying the data put into the file. To correct this problem, the application should use the DOS Create New File function (5BH). This function does the check for existence and the file creation in one

uninterrupted sequence. Create New File also returns an indicator if the file already exists.

Multistation Data Processing Applications

Applications that perform data processing usually perform data I/O on a complete data file (batch processing) or on records of a data file (interactive processing). In multistation data processing, several network computers may be performing data I/O on the same data file. The application must ensure data integrity by using file or record locking control.

The following PC LAN Programming interfaces and the DOS extensions for sharing can be used to provide file and record locking control:

- DOS Extensions

(See the *DOS Technical Reference* for more information.)

- Get Extended Error Code
 - Create Temp
 - Create New File
 - IOCTL Is Changeable

- Sharing Extensions

(See the Interrupt 21H function calls in the *DOS Technical Reference* for more information)

- Open File Handle
 - Lock Block
 - Unlock Block
 - IOCTL Set Retry.

Coexistence of Applications With the PC LAN Program

Applications should be coded to determine the presence of the PC LAN Program (see Appendix C, "Programming Interfaces" on page C-1 for more information). The restrictions listed below must be observed to ensure successful coexistence of applications with the PC LAN software.

Any applications coded to use the NETBIOS interface (either by the EXECNCB Interrupt 2AH or by Interrupt 5CH) must not use all of the available functions. In particular, the Reset (32H) and Receive Any to Any Name (16H or 96H to an NCB_NUM of 0FFH) should not be used. Also, applications should not use NETBIOS names added by the PC LAN Program. Use of the name and name number returned by the DOS Get Machine Name (5E00H) function is allowed. Applications should not create a NETBIOS name with the 16th character position set to the values 00H – 1FH. These values are reserved for names added by the PC LAN Program. It is recommended that the 16th character position be a blank (20H) to ensure that name duplication with the network program can be detected.

Any application that issues NETBIOS requests must ensure that the required network resources exist. Failure to ensure that the resources exist can result in unpredictable errors in both the PC LAN Program and the network application. Use the Get Network Resource Information function call (0500H INT 2AH described in Appendix C) to determine what resources are available. If the values found are not sufficient, your application should instruct the user to restart the PC LAN Program and specify larger values for the /SES and /CMD parameters.

Applications should not monitor NETBIOS requests issued by the PC LAN Program and under no circumstances should the requests be altered in any way. Use of the Receive Broadcast Datagram (23H or A3H) is not allowed. The Non-Unique Name feature of the NETBIOS should be

used instead to implement any needed broadcast function. Failure to follow these restrictions will probably result in PC LAN or application program failures that will require the user to reset (Ctrl-Alt-Del) the computer.

Any application that replaces interrupt vectors must take special care when the PC LAN Program is loaded. In particular, no interrupt should be replaced or set to some predefined value. In all cases, the old vector contents must be saved and control transferred to the saved address before leaving the interrupt service routine. This is true for hardware as well as software interrupts.

The PC LAN Program makes strong use of the hardware timer (vector 08) and keyboard (vector 09) interrupts. This means that these interrupts must be passed to the PC LAN Program for it to work correctly. Also, the PC LAN Program assumes that each Interrupt 08 (timer) represents the passage of 1/18.2 second of time. If this is not true, unpredictable problems may occur. If an application intercepts a DOS INT 21H call, the application must execute all possible functions or pass control to DOS to do them. If control is passed to DOS, then interrupts should not be enabled before control is passed. Failure to do this will cause the PC LAN Program to fail.

Applications running on a Server configuration must not do direct disk or diskette accesses except under certain circumstances. If the applications do direct accesses to a disk or diskette, then multiple concurrent updates to the media can occur. If updates do occur, the File Allocation Table (FAT), the Directory, or the contents of a file will be destroyed. This can result in a disk or diskette in which all the information recorded on the disk is lost. The only time that direct access is allowed is when the application can determine that the drive is not currently shared (NET SHARE command) or if the Server component is paused (NET PAUSE command). See "0300H (INT 2AH) Check Direct I/O " on page C-9 for more information.

Any application that does I/O over the network cannot use FCBs in the following ways:

- Construct its own open FCB

- Save an FCB in a file and use it later in a different run
- Change the FCB reserved areas
- Close the FCB and then continue to use it as if it were still open

If an application wants to ensure that data is written to the disk, the application must either close and reopen the FCB or issue a Disk Reset (DOS function 0DH) to commit the data. These methods are slower than those listed above, but are the only methods supported on the network.

When the PC LAN Program is running, activity occurs in the background. This means that the computer is executing more than just the user program. As a result, the user program does not have control of the entire computer so that the user program may have inconsistent keyboard response. Often, a noticeable delay occurs from the time that a key is pressed to the time that the user program receives the keyboard input and processes it. You should plan for this to occur when you design a user interface. Also, highly interactive programs, such as arcade-like games, will not function acceptably when the PC LAN Program is running on the computer.

Setting Up and Initializing Applications

On a network, applications should not require the user to do a power-on or Ctrl-Alt-Del key sequence to start the application. DOS and the PC LAN Program should be the only programs started in this manner. Applications should use batch files or a prompted initialization within the application to set up the network environment that they want to run in. The environment should be undone when the application terminates.

Application-to-Application Communication

Within the restrictions stated above, applications can use the NETBIOS interface to do application-to-application communication. Applications that intend for messages to be sent to them using the functions provided by the PC LAN Program (NET SEND and the Messenger) and wish to handle those messages within the application program should use the user post interface (see Appendix C, "Programming Interfaces" for more information).

When the PC LAN Programs are loaded, you should use the DOS redirection capability (NET USE and NET SHARE commands) if at all possible. If this capability is not sufficient, application programs may use the network functions provided by NETBIOS (with the restrictions mentioned above) to perform network functions. To provide for enhanced function, the PC LAN Program has the Interrupt 2AH (Execute NCB or EXECNCB) interface to NETBIOS. See Appendix C, "Programming Interfaces" for more information about the Interrupt 2AH interface.

For future compatibility, you should code applications to use the Interrupt 2AH interface to NETBIOS. Using the

interface requires that the application determine if INT 2AH is installed (meaning that the PC LAN Program is started) and the application should fail to run if INT 2AH is not installed.

The PC LAN Program provides a message presentation user interface. For the receiver configuration, the interface presents a “beep” followed by the display of the message on the user’s screen. If the user is in a full-screen application, the message overlays the information on the application screen. The interface for the Messenger and Server configurations is a “beep,” save the user’s display image, paint a box, and wait for a signal to display the message. The PC LAN Program provides an interface where an application program can intercept incoming messages before they are presented to the user. This allows the application to provide better notification of message reception (such as an indication in a status line). It also allows for better presentation of the message. For example, in a windowing system, the application could have a special window to show messages so that the window would not interfere with any other user activities. See Appendix C, “Programming Interfaces” for more information about using this interface.

Transaction Processing Applications

Applications that perform transaction processing require that messages be interchanged between two applications and also have defined data formats and data protocol. Transaction processing applications normally are executed at two computers by establishing sessions on each computer and then sending and receiving transactions in agreed-upon formats.

Transaction processing applications can use the following NETBIOS functions (Interrupt 2A) to interface with the PC LAN:

- Cancel Network Request
- Get Network Adapter Status
- Add Name
- Delete Name
- Call
- Listen
- Hangup
- Send
- Chained Send
- Receive
- Receive Any
- Get Session Status
- Send Datagram
- Receive Datagram.

See the *PC Network Technical Reference* for more information about NETBIOS functions.

Error Recovery and Problem Determination

Extended error support is available for DOS functions that are redirected across the network. Applications that use networking should be coded to check for network-specific types of errors that may require special action on the part of the application or the user. For example, a network request can fail as a result of a timeout. The user or the application may want to retry the operation that failed again. DOS Extended Error support provides explicit error codes for each error as well as an error class, action, and locus information. This information should be used in application error recovery procedures. See the *DOS Technical Reference* for more information.

Any application that issues NETBIOS requests must ensure that these requests have ended when the application terminates. Because DOS will only terminate an application at a DOS call, this is not a problem if all NETBIOS requests are “wait” mode. If some requests are “nowait” mode, the requests may still be outstanding at a DOS call. If DOS terminates the application, the request is not terminated. This means that the request is still running for a program that no longer is in memory, resulting in unpredictable (and often fatal) behavior. To prevent this problem, the application must set up traps for Ctrl-Break, Ctrl-C, and DOS critical errors so that the application can gain control and issue NETBIOS Cancels for each outstanding request NCB. See the *DOS Technical Reference* for more information about setting traps.

Transferring Data to the Video Buffer

Some applications write information from the video buffer to a network file or read information from a network file to the video buffer. If the size of the data transfer is larger than the size of the network /NBS buffer, users may see unpredictable results.

If you are writing an application, do not transfer data to and from the video buffer and a network file. Instead, transfer data from the screen buffer to a local buffer and then to the network file.

If you choose to transfer data to and from the video buffer and a network file, network users must increase the value of the /NBS parameter of the NET START command. The /NBS buffer should be as large as the screen buffer.

Appendix C. Programming Interfaces

Introduction

The PC LAN Program with DOS provides function calls that allow an application to redirect devices, display received messages and critical errors, and perform other network-related functions. This appendix describes the PC LAN Program function calls. For a complete list of DOS function calls, see Chapter 5, “DOS Interrupts and Function Calls,” in the *DOS Technical Reference*.

Function Call Overview

The following DOS Interrupt 21H function calls can be useful in a network environment.

Function Call	Description
Get Extended Error	Returns an extended error code
Create Temp	Creates a temporary file with a unique name
Create New	Creates a new file
IOCTL Retry	Changes sharing retry count

Function Call	Description
IOCTL Is Redirected Block	Determines if a logical device is associated with a network directory
IOCTL Is Redirected Handle	Determines if a handle is local or remote
Open	Opens a file with multiuser sharing rules enforced
Lock	Prevents access to the specified byte range in the file
Unlock	Releases a lock to a region of a file
Get Machine Name	Returns the name of the local computer
Redirect Device	Redirects a device over the network
Cancel Redirection	Cancels a previous redirection
Get Redirection List	Return nonlocal network assignments
Set Printer Setup	Specifies an initial string for printer files
Get Printer Setup	Gets an initial string for printer files

The following network-specific function calls are described in this appendix.

Function Call	Description
2A Installation Check	Checks to see if the 2A interface is installed
2A Check Direct I/O	Checks to see if an absolute disk access is allowed to the device
2A Execute NETBIOS	Executes a NETBIOS function call
2A Get Network Resource Information	Returns the network resource information available to an application
2F APPEND Installation Check	Checks to see if the APPEND command is installed
2F PC LAN Program Installation Check	Checks to see if the network program is installed
2F Get Current Post Address	Returns the address that is posted on network events
2F Set New Post Address	Sets the address to post on network events

EXEC

System Call

Purpose

The DOS EXEC function call is used to load and execute a program.

Remarks

A program may execute any PC LAN command (except NET START) by using the DOS EXEC call. To successfully execute the network command, the program must make sure that sufficient storage is available. The program should release memory to make room for the EXEC call.

The DOS Get Return Code function can be used to determine if the network command worked successfully. The return code is zero if no error occurred or greater than zero if an error occurred. A PC LAN command ends in error if a message starting with NETxxx is displayed.

For more information about the EXEC function call, see function 4BH, Load and Execute a Program EXEC, of the Interrupt 21H Function Calls in Chapter 5, "DOS Interrupts and Function Calls" in the *DOS Technical Reference*.

00H (INT 2AH) Installation Check

Purpose

Checks to see if the interrupt 2AH interface is installed

On Entry	Register Contents
AH	0

On Return	Register Contents
AH	Installed Flag Zero ; Not installed Non-Zero ; Installed

Remarks

A program can tell if the interrupt 2AH interface is loaded by calling Interrupt 2AH Installation Check.

06H (INT 2AH)

Network Print Stream Control

Purpose

Controls the truncation and concatenation of print streams for network printers.

On Entry	Register Contents
AH	06
AL	01 ; Set print output into ; concatenation mode 02 ; Set print output into ; truncation mode 03 ; Truncate print stream

On Return	Register Contents
AX	DOS error code if carry set. None if carry flag not set.

Remarks

DOS defines separate print streams for each of up to three redirected printers. These printers are LPT1 (or PRN), LPT2, and LPT3. These print streams are delimited by the following events:

06H (INT 2AH) Network Print Stream Control

- End of program
- Open and/or close of the files LPT1, LPT2, or LPT3
- Making a transition from printing with the IBM PC BIOS function INT 17H and printing with DOS (in both directions)
- Printing with INT 17H from different DOS processes (a process is created by the DOS EXEC function).

DOS is normally in Truncation mode, which means the stream delimiters listed above take effect. Concatenation mode (AL=01) causes DOS to ignore the stream delimiters listed above. In this mode, the streams are delimited only when a DOS command returns to asking for user input. This is either when a single DOS command ends or when a DOS Batch (.BAT) ends. This allows output from several commands to be kept together if the commands are in a Batch file. Set Concatenation mode changes the stream state for all redirected printers. It has no affect on nonredirected printers.

Set Truncation mode (AL=02) returns DOS to Truncation mode. It is used to cancel the Set Concatenation mode function. This call does not truncate streams, the next stream delimiter will cause the truncation. Truncation mode is automatically set at the end of all DOS batch files and at the end of any command not in a batch file. Set Truncation mode changes the stream state for all redirected printers. It has no affect on nonredirected printers.

06H (INT 2AH)

Network Print Stream Control

Not all programs print output in such a way that DOS can determine when a print stream ends. Printing using INT 17H is the most common occurrence of this situation. Truncate Print Stream (AL = 03) allows a program to indicate that the data currently printed is a complete stream and it should be ended and printed. This function serves the same purpose as the Ctrl/Alt/PrtSc key that is available to users to end print streams. Truncate Print Stream truncates the streams for all redirected printers. It has no affect on nonredirected printers. The PC LAN Program must be started for this function call to work.

0300H (INT 2AH)

Check Direct I/O

Purpose

Checks to see if an absolute disk access is allowed to the device.

On Entry	Register Contents
AX	0300H
DS:SI	Pointer to ASCIIZ disk device name

On Return	Register Contents
Carry flag	Set if absolute access is denied Clear if access is allowed

Remarks

The Check Direct I/O function call provides a check to see if a direct disk access is allowed to the specified device. Direct disk access is the use of DOS interrupts 25H and 26H or BIOS interrupt 13H. Use Check Direct I/O in programs that perform direct disk access. If the device is redirected (see function call 5F02H, "Get Assign List," in the DOS *Technical Reference*), or this function returns with carry set, then the program should not perform direct disk I/O.

Use Check Direct I/O to eliminate disk data integrity problems that can result from multiple concurrent processes updating the DOS disk data

0300H (INT 2AH)

Check Direct I/O

structures. See Chapter 5, "DOS Disk Allocation" in the DOS *Technical Reference* for more information.

Possible causes for not allowing direct access to a device are the following:

- Messages are logged to a file on the device.
- The print queue for the PC LAN Program is on the device.
- The device or a subdirectory on the device is shared.

Direct access to devices is allowed when none of the above conditions occur or when message reception, printing, and sharing are paused. For more information, see "NET PAUSE Command" on page 7-43.

The device pointed to by DS:SI must include the colon (:). The path may be a full path or only the drive specifier.

Interrupt 2AH (Installation Check) should be done before the Check Direct I/O function call. If Interrupt 2A is not installed (AH = 0), then absolute disk I/O is allowed. Programs should not use the Check Direct I/O function call frequently since it *may take some time to run*. If constant checks are needed, save the results of the first check, and check the saved result.

Note: The PC LAN Program must be loaded for the function call to execute properly.

0400H (INT 2AH)

Execute NETBIOS (Error Retry)

Purpose

Executes the specified NETBIOS function call with error retry support provided.

On Entry	Register Contents
AX	0400H
ES:BX	Pointer to the Network Control Block (NCB)

On Return	Register Contents
AH=0, AL=0	No error
AH=1, AL=X	NCB error occurred. AL contains the error code, X.

Remarks

Execute NETBIOS is reserved for use to support additional functions by capturing the intended function call and providing compatibility with extended functions. To ensure hardware independence, use the interrupt 2AH function. Do not use the interrupt 5CH function provided by the network adapter.

This function call provides error retry support for the following NETBIOS errors:

0400H (INT 2AH)

Execute NETBIOS (Error Retry)

- 09H - No Resource Available
- 12H - Session Open Rejected
- 21H - Interface Busy

The IBM PC LAN Program retries the NETBIOS command that caused the error a number of times. To provide their own error recovery support, applications should invoke the Execute NETBIOS (0401H) function call.

On entry, the ES:BX register pair points to a network control block (NCB). See the *IBM PC Network Technical Reference* book for a detailed description of the NCB.

See Appendix B, "Guidelines for Application Developers" for more information about recommended programming interfaces for the PC LAN Program.

Note: The IBM PC LAN Program must be loaded for the function call to execute properly.

0401H (INT 2AH) Execute NETBIOS (No Error Retry)

Purpose

Executes the specified NETBIOS function call with *no* error retry support provided.

On Entry	Register Contents
AX	0401H
ES:BX	Pointer to the Network Control Block (NCB)

On Return	Register Contents
AH = 0, AL = 0	No error
AH = 1, AL = X	NCB error occurred. AL contains the error code, X.

Remarks

Execute NETBIOS is reserved for supporting additional functions by capturing the intended function call and providing compatibility with extended functions. To ensure hardware independence, use the interrupt 2AH function call. Do not use the interrupt 5CH function provided by the network adapter.

This function call does not provide error retry support. (Execute NETBIOS function call 0400H)

0401H (INT 2AH) Execute NETBIOS (No Error Retry)

provides error retry support.) Applications should provide their own error recovery if needed.

On entry, the ES:BX register pair points to a network control block (NCB). See the *IBM PC Network Technical Reference* book for a detailed description of the NCB.

See Appendix B, "Guidelines for Application Developers" for more information about recommended programming interfaces for the IBM PC LAN Program.

Note: The IBM PC LAN Program must be loaded for the function call to execute properly.

0500H (INT 2AH)

Get Network Resource Information

Purpose

Returns the number of local network names, network commands, and network sessions available to an application after the IBM PC LAN Program has started.

On Entry	Register Contents
AX	0500H

On Return	Register Contents
AX	Reserved
BX	Number of network names available
CX	Number of network commands available
DX	Number of network sessions available

Remarks

The get network resource information allows an application to determine how many local network resources are available for use after the IBM PC LAN Program starts. The application should invoke the function call before using any network commands. The application should

0500H (INT 2AH)

Get Network Resource Information

maintain its own network resource count so that it does not exceed the values returned from get network resource count. Failure to comply with this requirement may cause unpredictable results from both the IBM PC LAN Program and the network application.

If the application requires more resources than are available, the user should increase the /SES and /CMD parameters or decrease the /USN parameter when starting the IBM PC LAN Program. See "NET START Command" on page 7-75 for more information about the parameters.

B700H (INT 2FH) APPEND Installation Check

Purpose

Checks to see if the APPEND command is installed.

On Entry	Register Contents
AX	B700H

On Return	Register Contents
AL	Network installed flag: Zero ;APPEND not installed Non-Zero ;APPEND is installed

Assembler Usage

```
MOV AX,B700H ;AX - function code
INT 2FH ;Call function
CMP AL,0 ;Is APPEND installed?
JE NOT_INSTALLED ;No, APPEND is not
; installed
APPEND_INSTALLED:
```

B702H (INT 2FH)

APPEND Version Check

Purpose

Returns the version level of APPEND

On Entry	Register Contents
AX	B702H

On Return	Register Contents
AH	Minor version number
AL	Major version number

Remarks

An APPEND installation check (AX = B700H) should be performed first to determine if APPEND has been installed.

B800H (INT 2FH) PC LAN Program Installation Check

Purpose

Checks to see if the PC LAN Program is installed. If the program is installed, Installation Check returns the installed network components.

On Entry	Register Contents
AX	B800H

On Return	Register Contents
AL	Network installed flag: Zero ; Network not installed Non-Zero ; Network is installed
BX	Installed component flag (bit flags): xxxxxxxx xxxx1xxx : Redirector xxxxxxxx 1xxxxxxx : Receiver xxxxxxxx xxxxx1xx : Messenger xxxxxxxx x1xxxxxx : Server

Note: The *x* represents an undefined value.

B800H (INT 2FH) PC LAN Program Installation Check

Assembler Usage

```
MOV    AX,B800H           ;AX - function code
INT    2FH                ;Call function
CMP    AL,0              ;Is network installed?
JE     NOT_INSTALLED     ;No, network not
                               ; installed
TEST   BX,SERVER_FLAG    ;Is Server installed?
JNZ    SERVER_STARTED    ;Yes, Server is
                               ; installed
TEST   BX,MESSENGER_FLAG ;Is Messenger
                               ; installed?
JNZ    MESSENGER_STARTED ;Yes, Messenger is
                               ; installed
TEST   BX,RECEIVER_FLAG  ;Is Receiver
                               ; installed?
JNZ    RECEIVER_STARTED  ;Yes, Receiver is
                               ; installed
TEST   BX,REDIRECTOR_FLAG ;Is Redirector
                               ; installed?
JNZ    REDIRECTOR_STARTED ;Yes, Redirector is
                               ; installed
```

Remarks

Use interrupt 2F (Installation Check) to determine if the PC LAN Program is installed. If the program is installed, Installation Check returns the components of the program that are installed. To determine which configuration the users specified when they started the network, perform the component checks in the order specified in the preceding assembler code. This order is required because a given configuration may install more than one component.

B803H (INT 2FH)

Get Current Post Address

Purpose

Determines the address that will be posted on the next network event (used for server, messenger, or receiver configurations)

On Entry	Register Contents
AX	B803H

On Return	Register Contents
ES:BX	Current post address

Remarks

Use the Get Current Post Address, in conjunction with the Set Current Post Address, to hook into the network event post routine. Once you've determined the current post address, save the address and set the new post address to your event handler.

Note: The PC LAN Program must be loaded for the function call to execute properly.

B804H (INT 2FH)

Set New Post Address

Purpose

Sets the address to post on next network event (used for server, messenger, or receiver configurations).

On Entry	Register Contents
AX	B804H
ES:BX	New post address

Remarks

Set New Post Address, in conjunction with Get Current Post Address, allows a user to hook into the network event post routine. Once the user determines the current post address, the user should save the address and set the new post address to his event handler.

Note: The PC LAN Program must be loaded for the function call to execute properly.

Network Event Handling

Once the user program sets the post address, the post address gets control on any network event. The program should determine if it wants to process the network event. If the program does not want to process the event, the program should transfer to the address of the routine returned by Get Current Post Address.

B804H (INT 2FH)

Set New Post Address

Values of AH and AL different from those shown in the following chart are possible. Ignore any different values in AH and AL, and pass control to the saved post routine. All post routines receive control with interrupts disabled. Use an IRET instruction to exit from the post routine.

Two network events are defined:

- The message-received event
- The critical-network-error event

Message Received Event

The message-received event allows the user to intercept message blocks before the PC LAN Program has a chance to process them. Intercepting the message allows you to tailor message reception to fit the specific needs of your application.

The PC LAN Program can receive the following types of messages:

- Single block messages
- Multiple block messages

Single block messages can be sent in a single network transmission. The message block contains the name of the computer that sent the message, the name of the message receiver, and the entire message text.

Multiple block messages require more than one network transmission. The first message block (start-multiple-block) identifies the start of the message. The following blocks (multiple-block-text) contain the message. The last block (end-multiple-block) signifies the end

B804H (INT 2FH)

Set New Post Address

of the message. All message blocks associated with the same message are tagged with the same group identifier value.

hp2.Inputs to the Message Received Event Handler

Single Block Message

On Entry	Register Contents
AH	00H
AL	00H
DS:SI	Pointer to ASCIIZ originator name
DS:DI	Pointer to ASCIIZ destination name
ES:BX	Pointer to text header

Start Multiple Block Message

On Entry	Register Contents
AH	00H
AL	01H
DS:SI	Pointer to ASCIIZ originator name
DS:DI	Pointer to ASCIIZ destination name
CX	Block group identifier

B804H (INT 2FH) Set New Post Address

Multiple Block Text

On Entry	Register Contents
AH	00H
AL	02H
CX	Block group identifier
ES:BX	Pointer to text header

End Multiple Block Message

On Entry	Register Contents
AH	00H
AL	03H
CX	Block group identifier

Message Aborted Due to Error

On Entry	Register Contents
AH	00H
AL	04H
CX	Block group identifier

Text header format:

DW LENGTH ; Length of text
DB LENGTH DUP(?) ; Text of message

B804H (INT 2FH)

Set New Post Address

The text of the message is in ASCII except the value 14H (the line terminator code) replaces the carriage return/line feed sequence of 0DH,0AH. Values below 20H are reserved. The maximum length of a message is 512 bytes.

hp2.Outputs from the Message Received Event Handler

AX	Response Code
	0 ; User post routine ; processed the message
	-1 ; PC LAN Program ; will process the message
	1 ; PC LAN Program ; will process the message, ; but message window ; is not displayed

IMPORTANT: For multiple block messages, the application must respond with the same AX value for all message blocks in a single message group.

B804H (INT 2FH) Set New Post Address

Critical Network Error Event

The Server Has Received a Badly
Formatted Network Request

On Entry	Register Contents
AH	01H
AL	01H

On Return	Register Contents
AX	Response code -1 ; PC LAN Program ; will process the error

B804H (INT 2FH)

Set New Post Address

Unexpected Network Error

On Entry	Register Contents
AH	01H
AL	02H
ES:BX	Pointer to NCB in error

On Return	Register Contents
AX	Response code 0 ; User post routine has ; handled the error and ; corrected the problem -1 ; PC LAN Program ; will process the error 1 ; Reissue the NCB

For more information about the NCB (Network Control Block), see the *IBM PC Network Technical Reference*.

B804H (INT 2FH) Set New Post Address

Server Received DOS INT 24H Error

On Entry	Register Contents
AH	01H
AL	03H
Other Registers	Registers as described in DOS, except the contents of the AH register, will be in the BH register. The stack cannot be assumed to be the stack described in DOS.

On Return	Register Contents
AX	Response code 0 ; Retry request -1 ; PC LAN Program ; will process the error

For more information about DOS INT 24H critical errors, see the *IBM DOS Technical Reference*.

B804H (INT 2FH)

Set New Post Address

Restrictions on Network Event Handlers

The following restrictions apply to network event handlers:

- **Keyboard Input**

Keyboard input can be confusing to the user, due to task switching. Keyboard input can randomly be sent to either the user's application or the network event handler, due to task switching on timer ticks with a user application in the foreground. Caution must be used with the following DOS INT 21H function calls:

Function Code	Description
01H	Keyboard input
06H	Direct console I/O (for input)
07H	Direct console input
0AH	Buffered keyboard input
0BH	Check input status
0CH	Clear and invoke function

When the PC LAN Program starts, it closes file handles 0000-0004 (all standard in/out files). As a result all function calls 01H-12H will not work unless these handles are restored. If your event handler must do device (including CON device) input or output, open the device using DOS call 4DH and use the returned DOS handle to do the input and output. The device should also be closed before the event handler exits.

B804H (INT 2FH)

Set New Post Address

- **Changing System State**

Network event handlers should not change the state of the system for the user, due to task switching on timer ticks with a user application in the foreground. Items such as current drive and directory should be maintained. Caution must be used with the following DOS INT 21H function calls:

Function Code	Description
0EH	Select disk
25H	Set interrupt vector
2BH	Set date
2DH	Set time
2EH	Reset verify switch
33H	Reset Ctrl/Break setting
38H	Set country information
3BH	Change current directory

B804H (INT 2FH)

Set New Post Address

- FCB, Using

Network event handlers should not use FCBs, due to the FCB dependence on a current directory for the specified drive and the fact that the foreground application owns the current directory FCB's. Caution must be used with the following DOS INT 21H function calls:

Function Code	Description
0FH	Open FCB
10H	Close FCB
11H	Search first FCB
12H	Search next FCB
13H	Delete FCB
14H	Sequential read FCB
15H	Sequential write FCB
16H	Create FCB
17H	Rename FCB
21H	Random read FCB
22H	Random write FCB
23H	File size FCB
24H	Set relative record FCB
27H	Random block read FCB
28H	Random block write FCB

B804H (INT 2FH) Set New Post Address

- **Memory**

Network event handlers should not attempt to allocate or free memory. Normally, when an application program is running all available memory is allocated to the application. An attempt to allocate or free memory usually damages the foreground application. Caution must be used with the following DOS INT 21H function calls:

Function Code	Description
48H	Allocate memory
49H	Free memory
4AH	Modify memory
4BH	EXEC program

- Network event handlers must not invoke the following DOS INT 21H function calls:

Function Code	Description
00H	Program terminate
31H	Terminate and remain resident
4CH	Terminate process
4DH	Get return code (unless after an EXEC)

B804H (INT 2FH)

Set New Post Address

- Network event handlers should not use the following DOS interrupts:

Interrupt	Description
INT 20H	Terminate program
INT 27H	Terminate and stay resident

- DOS INT 24H should not be replaced, but all DOS calls need to have any resulting critical errors processed. Use the DOS INT 24H error post (AX = 0103H) to detect critical errors.

B809H (INT 2FH)

Network Version Check

Purpose

Returns the version level of NET

On Entry	Register Contents
AX	B809H

On Return	Register Contents
AH	Minor version number
AL	Major version number

Remarks

A network installation check (AX = B800H), should be performed first to determine if the network has been installed.

The Network Version Check returns the hexadecimal equivalent of the PC LAN Program version. For example, version 1.20 is returned as:

AH = 01 H
AL = 14 H

Index

Special Characters

- .CD command 13-11
- .AF command 13-8
- .AP command 13-9
- .AT command 13-10
- .CE command 13-12
- .CF 13-13
- .CL command 13-14
- .CO command 13-15
- .CP command 13-16
- .CR command 13-17
- .DD command 13-18
- .DE command 13-19
- .DL command 13-20
- .EC command 13-21
- .EF command 13-22
- .EN command 13-23
- .ER command 13-24
- .MD command 13-25
- .NB command 13-26
- .PR command 13-27
- .RE command 13-28
- .RJ command 13-29
- .VD command 13-30
- * as a password 10-17
- *(numeric keypad)
 - key 4-25, 6-20
- *(numeric keypad),
 - Ctrl-Alt 4-25, 6-20
- ; command 13-7
- / PCx parameter 12-16
- /ASG parameter 7-76
- /CAC parameter 7-83,
12-12
- /CMD parameter 7-77,
12-10, 12-14
- /EXM parameter 7-84,
12-12
- /MBI parameter 7-81
- /NBC parameter 7-79,
12-7
- /NBS parameter 7-79, 12-8
- /PB parameter 7-79
- /PBx network print
buffers 12-9
- /PRB parameter 7-85,
12-15
- /PRP parameter 7-86,
12-16
- /RDR parameter 7-87
- /REQ parameter 7-84,
12-13
- /RQB parameter 7-85,
12-14
- /SES parameter 7-77,
12-10, 12-14
- /SHB parameter 7-85
- /SHL parameter 7-85
- /SHR parameter 7-87
- /SRV parameter 7-76
- /TSI parameter 7-82, 12-17
- /USN parameter 7-83

A

access

- access rights 10-11
 - changing Server's
 - access rights 10-13
 - different access
 - rights 10-12
 - examples of 10-11
 - fast file 8-10
 - on a Server 10-13
 - Read Only 10-11
 - Read/Write 10-12
 - Read/Write/Create 10-11
 - use of 10-11
 - Write Only 10-11
 - Write/Create 10-11
- adding new users 2-33
- addname 7-10
- alternate directories,
specifying 8-5
- APPEND command
 - use of 10-48, 10-58
- APPEND command, use
of B-2
- application directory
 - example of 10-53
 - sharing 10-52
 - use of 10-52
- Application Profile
 - commands 13-6
- application tasks 5-40
- applications
 - creating batch files
for 10-58
 - how to start using 4-21
 - installing with the
Installation Aid 10-51
 - installing without the
Installation Aid 10-56
 - interrupt by using
network request keys,
steps for 4-26

- interrupt without using
network request keys,
steps for 4-27
- interrupting 4-26, 6-21
- multistation data
processing B-6
- physical resource
sharing B-3
- transaction
 - processing B-11
 - using applications on
the network 6-18
- applications co-existing
with the PC LAN
Program B-7
- applications, install 5-40
- applications, printing
files 4-25, 6-20
- APPS directory, contents
of 10-44
- asterisk as a
password 10-10
- ATTRIBUTE command
 - example of 10-13
 - use of 10-13
- AUTOEXEC.BAT
 - file 2-10, 2-15, 2-20, 2-29,
4-18
- AUTOEXEC.BAT file
- AUTOEXEC.BAT,
definition of 1-19
- AUTOUSER.BAT
 - file 4-18
- AUTOUSER.BAT,
definition of 1-19

B

- backing up the Server's
disk 10-34
- backup, making a backup
copy 2-4, 2-22
- BATCH directory (remote

- computers), contents of 10-47
- BATCH directory (Server computer), contents of 10-48
- batch files, creating 10-58
- beeps, computer 4-11
- broadcast a message 5-7, 7-56
- broadcast message, definition of 1-26
- buffers

C

- calls, function C-1
- CANCEL 10-30
- cancel a network setup 5-39
- cancel message manager setup 11-22
- CANCELLED 10-29
- caution when sharing diskettes 10-8
- change defaults for starting the network 5-6
- change the print queue 5-27
- change the type size on a printer 5-19
- changing menu background color 3-16
- changing the mode of a network printer 8-13
- check the print queue 5-28
- checking close a file 5-42, 7-24
- co-existence of applications with the PC LAN Program B-7

- coding applications to co-exist with the PC LAN Program B-7
- command information, how to use 7-3
- command, NETPATH 10-49
- commands
 - doing network commands with batch files 6-24
 - doing network tasks with 6-22
 - format 7-4
 - how to use command information 7-3
 - messenger configuration 6-14
 - receiver configuration 6-15
 - redirector configuration 6-15
 - server configuration 6-13
- commands, PC LAN Program Quick Reference Card 6-3
- commands, reference 6-3, 7-3
- commands, samples of
 - accessing applications on server's disk 8-8
 - adding a name for messages 7-41
 - checking file status 7-26
 - checking status of open files 7-26
 - closing a file 7-27
 - continuing more than one function 7-18
 - continuing printing 7-19

continuing printing on
 a certain printer 7-19
 continuing the
 messenger 7-17
 continuing the
 Redirector 7-16
 continuing the
 server 7-18
 delete using a network
 disk 7-100
 deleting a name for
 messages 7-41
 displaying messages on
 the printer 7-37
 displaying network
 menus 7-12
 displaying status of a
 network printer 7-54
 displaying status of
 your printer 7-54
 forwarding
 messages 7-30
 listing names for
 messages 7-41
 logging messages in a
 file 7-36
 logging messages on a
 network
 computer 7-38
 pausing a specific
 printer 7-49
 pausing all
 printers 7-48
 pausing Disk
 Redirection 7-46
 pausing more than one
 function 7-48
 pausing Print
 Redirection 7-46
 pausing the
 messenger 7-47
 pausing the
 receiver 7-46
 pausing the
 server 7-47
 printing a separator
 page 7-61
 printing your separator
 page 7-61
 sending a file to a
 printer 7-53
 sending a message 7-56
 sending a message to
 all computers 7-57
 sharing a
 directory 7-71
 sharing a disk 7-71
 sharing a printer 7-72
 start logging messages
 again 7-37
 starting the
 messenger 7-90
 starting the messenger
 with parameters 7-90
 starting the
 receiver 7-89
 starting the receiver
 with parameters 7-89
 starting the
 redirector 7-88
 starting the
 server 7-91
 starting the server with
 parameters 7-91
 stop forwarding
 messages 7-30
 stop logging
 messages 7-37
 stop printing a
 separator page 7-62
 stop receiving
 forwarded
 messages 7-30
 stop sharing 7-73
 stop using a network
 directory 7-100
 using a network
 directory 7-99

- using a network directory as a local drive 7-99
- using a network disk 7-98
- using a network disk as a local drive 7-98
- using applications on your disk 8-7
- computer beeps 4-11
- computername 7-11, 7-87
- computername, using with PERMIT command 8-17
- CONFIG.SYS file 6-16, 9-3, 12-9, 12-12
- configuration, choosing a network 6-5
- configuration, network 7-10
- configurations
 - choose a
 - configuration 1-33, 6-5
 - memreq.redirector 6-10
 - messenger 4-7, 6-7
 - receiver 4-8, 6-9
 - redirector 4-7, 6-10
 - server 4-6
 - starting, command for starting 7-75
- continue printing on a network printer 5-37
- continue receiving messages 5-34, 11-20
- continue sharing network devices 5-35
- continue using network disks and directories 5-32
- continue using network printers 5-33
- continuing
- continuing sharing 10-34
- continuing, command for 7-14

- controlling the network
- copying the Network Program 2-4
- copying the PC LAN diskette 2-4
- copying the PC LAN Program Installation Aid diskette 2-22
- critical errors on the Server computer 10-35
- Ctrl-Alt-(numeric keypad) key 4-25, 6-20
- Ctrl-Alt-Break key 4-7, 4-26
- Ctrl-Home key 3-15
- Ctrl-PrtSc key 1-30

D

- data directories
 - access rights for sharing 10-55
 - sharing 10-55
 - use of 10-55
- data files, sharing 10-50
- data integrity, network 10-8
- deciding on a configuration 7-75
- dedicated Server, definition of
- default
- delete a network setup 5-39
- delete message manager setup 11-22
- deleting users from network 10-60
- directories
 - security for sharing 10-9
- directories, organizing 10-40

- directory location in memory 8-10
- dirname 7-8
- disk buffering 9-6
- disk or directory tasks
 - display names for receiving messages 5-28
 - share a directory 5-23
 - share a disk 5-23
 - share a disk or directory temporarily 5-24
 - share a file 5-23
 - stop sharing a directory 5-24
 - stop sharing a disk 5-24
 - stop using a network disk or directory 5-26
 - use a network disk or directory 5-25
- diskettes
- diskettes, caution sharing 10-8
- disks
 - security for sharing 10-9
 - sharing your entire 10-8
- display controller, use of B-3
- display names for receiving messages 5-29, 11-19
- display record locks 5-43
- display the error list 5-42
- display users 5-43
- displaying current users, command for 7-24
- displaying errors, command for 7-20
- DOS
 - *(numeric keypad) key, using the 4-25, 6-20

- commands not to use 1-31
- commands used with the network 1-31
- functions and the network 1-30
- PrtSc key, using the 1-30
- using DOS with the network 1-12
- Using The *(numeric keypad) Key 4-25, 6-20
- Using The PrtSc Key 1-30
- DOS and the PC LAN Program 1-4
- DOS buffers 9-6
- DOS names, definition of 1-12
- DOS names, pictures of 1-12
- double-sided drives
 - installing the Network Program 2-11
- drive specifier 9-13
- drives
 - 3-1/2" 2-16
- drives, indicating number of 9-13

E

- editing
- editing keys on menus 3-16
- enter key 3-13
- entering a command 3-15
- error list 5-42
- error messages A-1, A-9
- error, beeps 4-11
- errors

errors in print queue,
correcting 10-29
errors on shared
printers 10-32
errors, critical 10-35
Esc key 3-14
external commands 7-3

F

fast file access 8-10
FASTOPEN
command 8-10
for performance 12-13
fields on menus 3-10
file control blocks,
command for
specifying 9-8
file sharing 9-9
file, check status of 7-24
file, current users 7-24
file, sharing a single 10-8
files
files, tracking number of
opened 9-11
fixed disk
format, command 7-4
forward messages to
another computer 1-38
forwarding messages to
another computer,
command for 7-28
function calls
function keys
F1 key 3-12

G

getting program ready to
use 2-5
getting started 2-1

H

hardware factors 12-4
help
help key 3-12
high-capacity drives
installing the Network
Program 2-6
HOLD 10-30
horizontal spacing,
command for
setting 8-13

I

IBM Network adapter 2-4
Identifying a computer to
the network 1-14
indicating number of DOS
buffers 9-6
information
messages A-1, A-2
install new
applications 5-40
Installation Aid
APPS directory 10-44
BATCH directory
(remote
computers) 10-47
BATCH directory
(Server
computer) 10-48
copying 2-22
creating profiles 13-3

help for 2-25, 2-34
installing applications
with 10-51
installing without the
Installation Aid 10-56

NETWORK

directory 10-44
organization
created 10-40
profile examples 13-32
profile rules 13-4
profile variables 13-5
PROFILES directory
(remote
computers) 10-48
root directory 10-43
starting, instructions
for 2-24
USERS directory 10-46
USERS MDL
directory 10-46
uses of 2-21
using for fixed disk
installation 2-21

installing

for double-sided
drives 2-11
for high capacity
drives 2-6
for 3-1/2" drive 2-16
for 5-1/4" drives 2-11
general
information 2-5

installing

applications 2-30
installing PC LAN
Program
diskette drives 2-5
for a fixed disk 2-21
for high capacity
drives 2-6
for 3-1/2" drive 2-16
for 5-1/4" drive 2-11

interrupt an

application 1-38

Interrupt 2AH
Interrupt 2FH
Interrupt 21H
interrupting an
application 1-24, 5-40

K

key, *(numeric
keypad) 4-25, 6-20
key, Ctrl-Alt-*(numeric
keypad) 4-25, 6-20
key, Ctrl-Alt-Break 4-7,
4-26
key, Ctrl-PrtSc 1-30
key, PrtSc 1-30
key, Shift-PrtSc 1-30
keys
keys used with
menus 3-12

L

Local Area Network
adapter 2-4
locks for a file 7-24
log file
log file for messages 5-11,
11-17
log messages to a
file 1-40, 5-11, 11-17
log messages to a
printer 5-11
log messages to the
display 5-11
log messages, definition
of 1-27
logging messages
look at messages by using
network request keys 5-8

look at messages without
using network request
keys 5-10

M

maintaining the Server's
disk 10-34
managing the Server,
tasks for 10-5
memory
memory requirements
messenger 6-8
number of DOS
buffers 9-6
receiver 6-9
server
configuration 6-6
memory, directory location
in 8-10
menus
change background
color 3-16
Ctrl-Home key 3-15
disk or directory
tasks 4-13
editing keys 3-16
enter key 3-13
entering a
command 3-15
Esc key 3-14
examples 3-7
fields 3-10
help (F1) key 3-12
keys used 3-12
main menu 4-10
Main Menu-Task
selection 3-6
message line 3-10
message tasks 4-14
overview of 4-3
parts of 3-9
printer tasks 4-13

starting the
network 4-5
status line 3-11
tab key 3-13
message 7-9
message buffer (/MBI)
parameter 7-81
message line or
menus 3-10
Message Manager for
TopView, how to
use 11-3
Message Manager tasks
cancel message
manager setup 11-22
continue receiving
messages 11-20
display names for
receiving
messages 11-19
pause receiving
messages 11-20
receive messages for
others 11-18
save message manager
setup 11-21
save messages in a
file 11-17
specify a log file 11-17
stop forwarding
messages 11-19
stop receiving messages
for others 11-18
stop saving messages to
a file 11-18
message tasks
broadcast a
message 5-7
look at by using
network request
keys 5-8
look at without using
network request
keys 5-10

- pause receiving messages 5-33
- receive for others 5-13
- receive without using the network request keys 5-10
- received by using the network request keys 5-8
- refresh your screen 5-10
- save to a file 5-11
- save to a printer 5-11
- save to the display 5-11
- send to all computers 5-7
- send to another computer 5-7
- specify a log file 5-11
- stop forwarding 5-15
- stop receiving messages for others 5-13
- stop saving to a file 5-12
- stop saving to a printer 5-12
- stop saving to the display 5-12
- message, broadcast 1-26
- messages
- messages, error A-1, A-9
- messages, information A-1, A-2
- messages, prompt A-1, A-2
- messenger configuration 1-33, 6-7
- messenger, starting (menus) 4-7
- mouse-pointing device, using a 11-14
- moving the cursor to another field 3-13

- multistation data processing applications
 - DOS extensions for B-6
 - EXEC extensions for B-6
 - Redirector extensions for B-6
 - Sharing extensions for B-6

N

- names
- naming a computer 1-14
- NET ERROR command when to use 10-38
- NET FILE command when to use 10-38
- NET START command
- NET xxx messages A-1, A-9
- NETBIOS 1-4, 7-77
- NETPATH 4-22
- NETPATH, explanation of 10-49
- network
 - buffer (/NBC) parameter 7-79
 - buffer (/NBS) parameter 7-79
 - definition of 1-7
 - getting started using 2-1
 - how it works 1-12
 - how you can use 1-8
 - messages, sending and receiving 1-26
 - printer availability 1-8
 - request keys 1-24
 - requirements for using the network 1-33

- saving a network setup 1-19
- sending messages 1-26
- setting up devices 1-17
- setting up your computer 1-16
- share files 1-10
- share programs 1-9
- sharing devices 1-16
- starting the network 1-14
- stopping 10-35
- tasks to start 2-3
- using applications 1-21
- network adapter 2-4
- network control tasks
 - close a file 5-42
 - display the error list 5-42
 - display users and record locks 5-43
- network data
 - integrity 10-8
- NETWORK directory, contents of 10-44
- network disk buffer pool 12-7
- network error 7-21
- network name 1-14, 1-16
- network name for a device, definition of 1-16
- network name for computer, definition of 1-14
- network name, choosing 10-6
- network path and network name 10-6
- Network Request keys 1-24
 - interrupt on application 4-26
 - interrupting an application 1-24

- interrupting an application, setup for 5-40
- interrupting application 1-41
- selecting for use 4-7
- view messages 1-27, 1-41
- network status tasks
 - display network devices being used 5-30
 - display shared network devices 5-29
- network, definition of 1-7
- new applications, install 5-40

O

- open files 7-24
- opened files, tracking number of 9-11
- operands, list of PC LAN 7-6
- organizing the Server's disk 10-40

P

- parameters, list of PC LAN 7-6
- parameters, NET START command 7-76
- password
 - asterisk as a password 10-10, 10-17
 - example of 10-10
 - for disks and directories 10-9
 - prompt for 10-10, 10-17
 - security 10-9

- security for
- printers 10-17
- path 7-8
- pause a printer 5-36
- pause and continue tasks
 - continue printing on a network printer 5-37
 - continue receiving messages 5-34
 - continue sharing network devices 5-35
 - continue using network disks and directories 5-32
 - continue using network printers 5-33
- pause a printer 5-36
- pause receiving messages 5-33
- pause sharing network devices 5-34
- pause using network disks and directories 5-31
- pause using network printers 5-32
- restart a network printer 5-37
- pause receiving messages 5-33, 11-20
- pause sharing network devices 5-34
- pause using network disks and directories 5-31
- pause using network printers 5-32
- pausing
 - pausing and continuing 10-33
 - pausing printing 10-33
 - pausing sharing 10-33
 - pausing the network, command for 7-43
- PC LAN Program

- copying the PC LAN Program Installation Aid 2-22
- copying the program 2-4
- getting started using 2-1
- installing on a computer 2-5
 - tasks to start 2-3
- PC LAN Program Installation Aid diskette 2-22
- performance
 - considerations 12-3
 - FASTOPEN 12-13
 - hardware factors 12-4
 - options 12-6
 - remote computer options 12-7
 - server options 12-10
 - server work load 12-5
- physical resource sharing applications
 - DOS extensions for B-4
 - EXEC System Call extensions for B-4
 - Redirector Extensions for B-4
- placing messages in a file, command for 7-32
- print a file in condensed type, how to 8-13
- print buffer (/PB) parameter 7-79
- print buffer (/PRB) parameter 7-85
- print file error 7-22
- PRINT NEXT 10-30
- PRINT NOW 10-30
- print on your local printer 5-32

- print priority (/PRP)
 - parameter 7-86
- print queue
 - correcting errors 10-29
 - number of files 10-29
 - status 10-29
 - when to check or change 10-29
- print the default separator
 - page 5-20
- print your separator
 - page 5-20
- printdevice 7-9
- printer and print queue
 - tasks 5-19
- PRINTER ERROR 10-29
- printer errors 10-29
- printers
 - correcting errors 10-32
 - maintenance of 10-32
 - pausing 10-33, 10-34
 - print queue
 - errors 10-29
 - security for sharing 10-17
- printers, sharing 10-14
- printing
 - change the print queue 5-27
 - change the type size 5-19
 - check the print queue 5-28
 - creating a separator
 - page 10-18
 - on your local printer 5-32
 - print the default separator page 5-20, 7-58
 - print your separator
 - page 5-20, 7-58
 - share your printer 5-16
 - stop printing a separator page 5-22
- stop sharing your printer 5-17
- stop using a printer 5-18
- use a network printer 5-18
- using separator pages 10-18
- printing a file, command for 7-50
- printing a screen 1-30
- printing a separator page, command for 7-58
- printing files from applications 4-25, 6-20
- printing what you type 1-30
- printname 7-10
- private directories
 - access rights for sharing 10-54
 - sharing 10-54
 - structure of 10-46
 - use of 10-54
- private directory, definition of 1-14
- profile
 - examples 13-32
 - rules 13-4
 - variables 13-5
- PROFILES directory (remote computers), contents of 10-48
- program interface
 - multistation data processing applications B-6
 - physical resource sharing applications B-3
 - transaction processing applications B-11
- program, copying 2-4, 2-22

- programming applications to co-exist with the PC LAN Program B-7
- prompt messages A-1, A-2
- PrtSc key 1-30

R

- Read Only access
 - definition 10-11
 - use 10-11
- Read-Only files 4-22
- Read/Write access
 - definition 10-12
 - use 10-12
- Read/Write/Create access
 - definition 10-11
 - use 10-11
- receive messages 1-40, 5-8
- receive messages by using the network request keys 5-8
- receive messages for others 1-38, 5-13, 11-18
- receive messages without using the network request keys 5-10
- receive request buffer (/RQB) parameter 7-85
- receiver
 - configuration 1-33, 6-9
- receiver, starting (menus) 4-8
- receiving messages 1-27
- receiving messages for others, command for 7-39
- receiving messages with Message Manager 11-15
- record locks 5-43
- record locks for a file 7-24

- redirector
 - configuration 1-33, 6-10
- redirector, starting (menus) 4-7
- reference, command 6-3
- reference, PC LAN Program Quick Reference Card 6-3
- refresh your screen 5-10
- refresh, definition of 1-27, 1-29
- RELEASE 10-30
- remote computer performance options 12-7
- remote computers, definition of 10-4
- restart a network printer 5-37
- restarting, command for 7-14
- return to an application 5-41
- return to main menu 3-15
- return to previous menu 3-14
- Ring Diagnostic 14-7
- root directory, contents of 10-43
- root directory, sharing 10-8

S

- save a message manager setup 11-21
- save a network setup 4-18, 5-37
- save messages in a file 1-40
- save messages to a file 5-11, 11-17

- save messages to a printer 5-11
- save messages to the display 5-11
- save messages, definition of 1-27
- save network setup tasks
 - cancel a network setup 5-39
 - save a network setup 5-37
- saving
- saving message manager, steps for 11-21
- saving PC LAN setup, steps for 4-20, 5-37
- saving your setup, definition of 1-19
- screens
- search sequence 8-6
- security 10-39
- security for disks and directories 10-9
- security for shared printers 10-17
- security, password 7-9
- send a message to all computers 5-7
- send a message to another computer 5-7
- send messages to other computers 1-40
- sending messages 1-26
- sending messages, command for 7-55
- separator page
 - escape character 10-20
 - example of 10-25
 - print a separator page 5-20, 7-58
 - when to use 10-18
- server 6-6
- server configuration 1-33, 6-6
- server error 7-22
- server performance options 12-10
- server work load 12-5
- Server, definition of 10-4
- server, starting (menus) 4-6
- sessions (/SES)
 - parameter 7-77
- setting a path 10-49
- setting file control blocks 9-10
- setting up devices on the network 1-17
- setting up PC LAN Program 4-3
- setting up to share devices, steps for 4-15
- setting up to use network devices, steps for 4-12
- setting up your computer on the network 1-16
- setting up your computer on the network, definition of 1-16
- share a directory 5-23
- share a disk 5-23
- share a disk or directory temporarily 5-24
- share a file 5-23
- share network devices 1-38, 5-23
- share your printer 5-16
- shares (/SHR)
 - parameter 7-87
- sharing
 - applications 10-52
 - data files 10-50
 - directories
 - diskettes, caution 10-8
 - disks
 - entire disk 10-8
 - parallel printer 10-14
 - printers

- security for disks and directories 10-9, 10-17
- serial printer 10-14
- Server using shared disks 10-13
- stopping 10-35
- when to share disks and directories 10-5
- sharing a device temporarily 8-15
- sharing a single file 10-8
- sharing devices on the network 1-16
- sharing devices, command for 7-63
- sharing with different access rights 10-12
- Shift-PrtSc key 1-30
- shortname 7-8, 7-67
- single-sided drives
- specify a log file for messages 5-11, 11-17
- specifying directories to be searched, command for 8-5
- SPOOLING 10-29
- start placing messages in a file, command for 7-32
- start the PC LAN Program 5-5
- starting applications 4-21
- starting PC LAN configurations, command for 7-75
- starting PC LAN menus, command for 7-12
- starting PC LAN, steps for 4-4
- starting programs and applications (TopView) 11-4
- starting the network 1-14
- starting the PC LAN Program
 - status line or menus 3-11
 - status of a file 7-24
 - stop forwarding messages 5-15, 11-19
 - stop placing messages in a file, command for 7-32
 - stop printing a separator page 5-22
 - stop receiving messages for others 5-13, 11-18
 - stop saving messages to a file 5-12, 11-18
 - stop saving messages to a printer 5-12
 - stop saving messages to the display 5-12
 - stop sharing a directory 5-24
 - stop sharing a disk 5-24
 - stop sharing your printer 5-17
 - stop using a printer 5-18
 - stop using network printers temporarily 5-32
 - stopping
 - stopping the network 10-35
 - syntax, command 7-3

T

- tab key 3-13
- tasks
 - cancel network setup 5-37
 - disk or directory messages 5-7
 - 5-23
 - network control 5-42
 - network status 5-27
 - pause and continue 5-31
 - printer and print queue 5-19

- save network setup 5-37
- separator pages 10-18
- starting the network 5-5
- tasks, command and menus used for
- tasks, configuration requirements
 - messenger 6-7
 - receiver 6-9
 - redirector 6-10
 - server 6-6
- tasks, configuration requirements for 1-38
- temporarily share your disk or directory 5-24
- temporary sharing of devices 8-15
- time slice interval (/TSI) parameter 7-82
- Token-Ring Network
 - NET 700 errors 14-3
- transaction processing applications
 - NETBIOS functions for B-12
- transfer messages to another computer 1-38

U

- unable to access error 7-21
- use a network disk or directory 5-25
- use a network printer 5-18
- use network devices 1-40, 4-12
- use of the APPEND Command B-2

- use of the display controller B-3
- user area, AUTOEXEC.BAT file 4-18
- USER MDL directory, contents of 10-46
- user name (/USN) parameter 7-83
- user subdirectories 10-54
- username 7-10
- USERS directory, contents of 10-46
- using
 - stopping 10-35
- using a mouse-pointing device 11-14
- using a network device, command for 7-93
- using applications on the network 4-21
- using applications with the network 1-21
- using commands
 - messenger configuration, commands used with 6-14
 - receiver configuration, commands used with 6-15
 - redirector configuration, commands used with 6-15
 - server configuration, commands used with 6-13
 - setting up to use network devices 6-13
 - starting the network 6-11
- using DOS with the network 1-12

- using menus
 - saving PC LAN
 - setup 4-20
 - setting up to share devices 4-15
 - setting up to use
 - network devices 4-12
 - starting PC LAN 4-4
- Using The *(numeric keypad) Key 4-25, 6-20
- Using The PrtSc Key 1-30

V

- vertical spacing, command for setting 8-13
- video buffer B-14
- viewing messages with Message Manager 11-16

virtual drive 9-13

W

- WAITING 10-29
- Write Only access
 - definition 10-11
 - use 10-11
- Write/Create access
 - definition 10-11
 - use 10-11

Numerics

- 3-1/2" drive
 - installing the Network program 2-16
- 3xxx messages A-1

Continued from inside front cover

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International Business
Machines Corporation
P.O. Box 1328-W
Boca Raton,
Florida 33429-1328

Printed in the
United States of America

84X0495

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