



Welcome Guide for LANs

HP OfficeShare Network



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Table of Contents

Chapter 1: Using this Guide

Guide Overview	1-1
Setting Up Your Network	1-2
Operating Your Network	1-3
DOS Versions	1-3
What You Need to Know	1-3
If You Need to Know More	1-4
If You Need Help	1-4

Chapter 2: Network Features

Chapter Overview	2-1
Computers on the Network	2-2
Personal Computers	2-2
HP 3000 Servers	2-3
HP 3000, HP 9000, HP 1000, and DEC VAX Computers	2-3
Shared Directories	2-4
Shared Applications	2-4
NetBIOS Applications	2-5
Shared Printers	2-5
Shared Plotters	2-6
Printer and Plotter Spooling	2-7
Terminal Access	2-7
Network File Transfer (NFT)	2-8
Shared Resources with HP Touchscreen PCs	2-8
Expanded Memory Specification (EMS)	2-9

PC NetIPC/RPM 2-9

Chapter 3: Managing the Network

Chapter Overview 3-1

The Network Configuration Utilities 3-2

Shared Resources 3-3

 Shares and Uses 3-3

 Shortnames 3-3

 The SHARE and USE Commands 3-5

 Comparing Shares and Uses 3-5

Node Names and IP Addresses 3-7

Setting Up Terminal Access and NFT 3-8

Loading a Computer's Network Software 3-10

Providing Security 3-11

 Protecting Resources Shared With a PC Workstation 3-11

 Protecting Terminal Access to Computers 3-12

 Protecting Files Transferred With NFT 3-13

Monitoring the Network 3-13

Managing Network Performance 3-14

Troubleshooting Problems on the Network 3-15

Where to go From Here 3-16

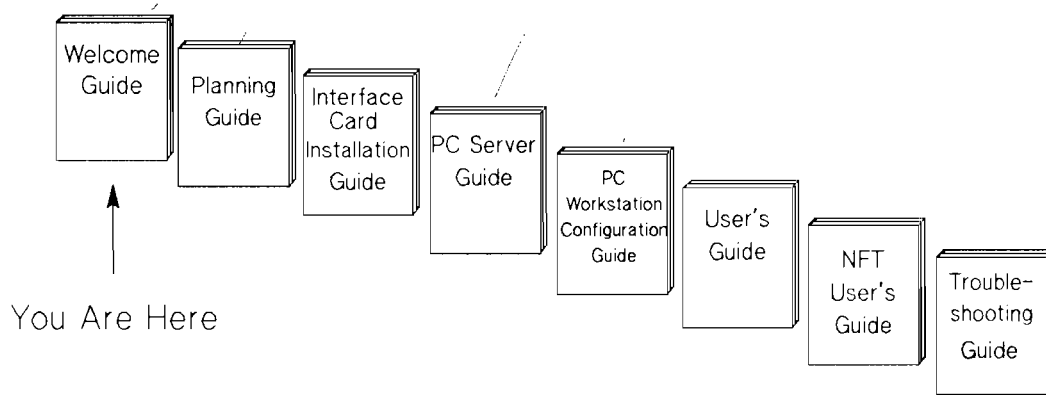
Chapter 4: Additional References

Chapter Overview 4-1

Appendix A: Glossary

Index

Using this Guide



HP OfficeShare Network LAN Guides

Guide Overview

This guide summarizes the tasks involved in setting up and operating your HP OfficeShare Network, describes network features and capabilities, and discusses network management.

Setting Up Your Network

This list summarizes the tasks you perform to plan, install, configure, and start your network. Refer to this list as you proceed through the tasks.

Task to Perform	Guide to Read
<input type="checkbox"/> Learn about the HP OfficeShare Network, its capabilities and features.	<i>Welcome Guide for LANs--HP OfficeShare Network</i>
<input type="checkbox"/> Draw a network map that shows you where each computer is located.	<i>Planning Guide for LANs--HP OfficeShare Network</i>
<input type="checkbox"/> Install the network hardware on each personal computer on the network.	The manual for your hardware interface card
<input type="checkbox"/> Plan, install, configure, and start the Network Services software for each HP 3000, HP 9000, HP 1000, and DEC VAX computer running Network Services. Skip this step if no computers on your network run Network Services.	The network services reference manual for your HP 3000, HP 9000, HP 1000, and DEC VAX computer
<input type="checkbox"/> Plan, install, configure, start the hardware and software for each HP 3000 server on the network. Skip this step if you have no HP 3000 servers.	<i>NS3000/V Network Manager Reference Manual, Resource Sharing: System Management, and Resource Sharing: Utilities</i>
<input type="checkbox"/> Plan, install, configure, and start the PC server network software for each PC server on the network. Skip this step if you have no PC servers.	<i>PC Server Guide for LANs--HP OfficeShare Network</i>
<input type="checkbox"/> Plan, install, configure, and start the PC workstation network software for each PC workstation on the network.	<i>PC Workstation Configuration Guide for LANs--HP OfficeShare Network</i>

Operating Your Network



Once the network is set up, you can use resources shared from servers, transfer files to and from any HP 3000, HP 9000, HP 1000, or DEC VAX computers, and gain terminal access to any HP 3000, HP 9000, HP 1000, or DEC VAX computers on the network. You can also monitor the use of the network from computers on the network that share their resources.

DOS Versions

MS-DOS and PC-DOS are referred to in the HP OfficeShare Network guides as DOS. The HP OfficeShare Network uses DOS versions 3.1, 3.2, and 3.3.

What You Need to Know

To set up personal computers on the network, you should know how to:

- Install hardware, such as interface cards or peripherals.
- Use the **SETUP** utility and the **MODE** command of HP Vectra Personal Computers to include peripherals in the system configuration.
- Use DOS commands and utilities.
- Create a hierarchical directory structure.
- Create batch files (especially **AUTOEXEC.BAT**).
- Use a text editor.

Experience in these areas makes it easier for you to set up personal computers on the network.

If You Need to Know More

If you lack experience in any of the areas listed previously, refer to the user's guide for your personal computer and to a DOS user reference for information and practice. For an introduction to networking in general, the primer *Making the LAN Connection* is available from Hewlett-Packard. Contact any local HP sales office for information on obtaining a copy.

If You Need Help

If you have questions about how to install, configure, or use your HP OfficeShare Network after reading these guides, call the telephone assistance program, HP HelpLine. You can reach the U.S./Canada HP HelpLine at the following toll-free number:

1-800-858-8867

The HP HelpLine is open Monday through Friday from 7 A.M. to 9 P.M. Eastern Standard Time. When you call, a coordinator arranges for an HP support representative to return your call within two working hours. There is no charge for calls that result from a specific documentation defect or software design problem, or if an answer cannot be found.



Network Features

Chapter Overview

The Hewlett-Packard OfficeShare Network is an industry-standard, HP AdvanceNet local area network (LAN) for personal computers. With the HP OfficeShare Network, PCs can be connected to “servers” that share resources such as directories, printers, and plotters. PCs can also be connected to computers for terminal access and Network File Transfer (NFT). This chapter identifies the computers supported on the HP OfficeShare Network and introduces the following capabilities:

- File and directory sharing among PCs attached to an HP Vectra PC server or an HP 3000 server.
- Shared applications, including communication between PCs that use NetBIOS compatible applications.
- Printer and plotter sharing with spooling among PCs attached to an HP Vectra PC server or HP 3000 server.
- Terminal access to HP 3000, HP 9000, HP 1000, and DEC VAX computers.
- Network File Transfer (NFT) capabilities to and from HP 3000, HP 9000, HP 1000, and DEC VAX computers.
- Shared resources (directories, printers, and plotters) with HP Touchscreen PCs running HP ThinLAN for PCs (version A.02.00 or A.03.00), or HP StarLAN 10 for PCs (version A.01.00).

- Expanded Memory Specification (EMS) support for PCs on the network.
- Network InterProcess Communication (NetIPC) and Remote Process Management (RPM) capabilities between PCs and HP 3000s.

Computers on the Network

The HP OfficeShare Network supports communication with the following types of computers:

- Personal computers
 - HP Vectra PCs and HP Vectra CS, ES, QS, and RS PCs
 - IBM PC/XT/ATs
 - IBM PS/2s
- HP 3000 computers
- HP 9000 computers
- HP 1000 computers
- DEC VAX computers

Personal Computers

Personal computers on the HP OfficeShare Network can function as PC servers or PC workstations.

PC Servers

PC servers share directories, printers, or plotters with PC workstations. A PC server can control and monitor PC workstation use of shared resources. When a PC is acting as a server, you cannot use it as a PC workstation.

PC Workstations

PC workstations can use the network for performing tasks such as:

- Using the resources of an HP 3000 server or a PC server (such as directories, printers, and plotters) in addition to regular PC operations.
- Communicating as a terminal with HP 3000, HP 9000, HP 1000, or DEC VAX computers using terminal access.
- Using NFT to transfer files to and from HP 3000, HP 9000, HP 1000, or DEC VAX computers.
- Running a variety of applications that take advantage of networking features.
- Running certain NetBIOS-based applications.

HP 3000 Servers

An HP 3000 computer with Resource Sharing software becomes a server and consequently may share directories, printers, plotters, and tape units with PC workstations. An HP 3000 server can control and monitor PC workstation use of shared resources. An HP 3000 computer can be a server and still perform all other functions at the same time.

HP 3000, HP 9000, HP 1000, and DEC VAX Computers

HP 3000, HP 9000, HP 1000, and DEC VAX computers on the network can be used as follows:

- PC workstations can have "terminal access" to such computers. When a PC workstation gains terminal access to a computer, the PC workstation functions as a terminal. Using terminal emulation, the PC accesses applications from the computer.
- Computers can exchange files with each other, as well as with PC workstations, by using NFT.

Shared Directories

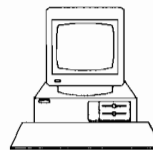
The HP OfficeShare Network allows PC workstations to access files in shared directories on PC servers or HP 3000 servers. Each shared directory appears as a separate disc (D:, E:, F:, etc.) on that PC workstation. Users can store and retrieve files in shared directories that are on PC servers or HP 3000 servers as though the files were on discs in the user's PC workstation. Users don't need to learn new commands to access their shared directories. They need only to know the device letter (D:, E:, F:, etc.) assigned to the directory containing their files.



Server shares
the directories:

C:\USERS\JULIA

C:\PUBLIC



PC workstation uses them
as the shared discs:

D:

E:



PC Workstation's Shared Directories

Shared directories function the same as local DOS directories. The same file name, directory, and pathname guidelines that govern files stored on a local disc apply to files on a shared directory.

Shared Applications

Some applications use the networking features available with DOS 3.1, 3.2, or 3.3. Many of these applications can work without modification on the network. Existing applications written for DOS 2.1 without networking in mind may require extra steps to work properly. Some application packages can be site licensed so that one version of a networked software package may be used simultaneously by multiple users. For complete information about the applications you want to use on the network, please consult an HP Systems Engineer or the HP HelpLine.

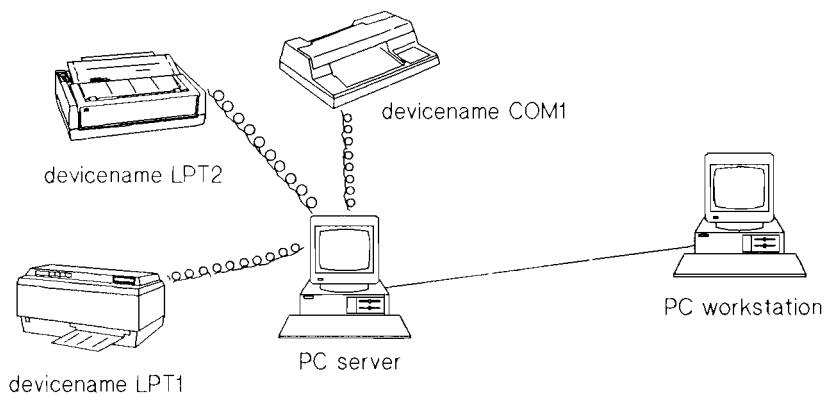
NetBIOS Applications

Certain applications that use the IBM NetBIOS interface are qualified for use on the HP OfficeShare Network. For information about the NetBIOS applications which are currently qualified for use, please consult an HP Systems Engineer or the HP Helpline. Refer to the documentation that comes with your NetBIOS application for information about how to install, configure, and use those applications.

Shared Printers

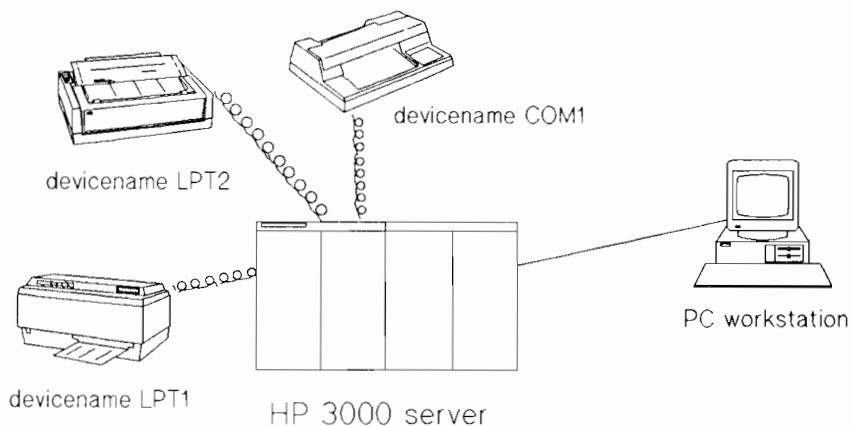
You can share printers attached to an HP 3000 server or an HP Vectra server. Users choose a shared printer by its DOS devicename (LPT1, LPT2, COM1, etc.).

All printers supported by the HP Vectra PC are also supported by the HP OfficeShare Network. All PC workstations on the network can access a shared printer or plotter as if the printer or plotter were attached locally to the PC workstation.



Printers and Plotter Shared from a PC Server

Output files from applications need to contain format information to set up the network printer (such as HP LaserJet Plus, Diablo/630 daisy wheel, dot matrix). If your application cannot format its output files for the network printer, you can still use the printer by means of a printer setup file.



Printers and Plotter Shared from an HP 3000 Server

The HP OfficeShare Network provides you with a way to communicate with printers attached to an HP 3000 server, even if your PC application cannot be configured to that printer. If the PC application cannot be configured for the printer attached to your HP 3000 server, you can configure the PC application for a Diablo/630 printer and use an HP 3000 printer setup file to choose printing features such as type style, paper size, and font. In this way, your PC application can have access to any printer that is supported by an HP 3000.

For More Information About	Refer To
Printer Setup Files	<i>PC Workstation Configuration Guide for LANs--HP OfficeShare Network</i>

Shared Plotters

You can share plotters attached to an HP 3000 server or a PC server. Users choose a shared plotter the same way as a shared printer, by its DOS devicename (LPT1, LPT2, COM1, etc.).

Shared plotters are supported only for applications that do not require two-way communication with the plotter. All plotters supported by the HP Vectra PC that have auto feed capability are also supported by the HP OfficeShare Network.

Printer and Plotter Spooling

Shared printers and shared plotters are spooled over the HP OfficeShare Network. Spooling allows a PC workstation to print or plot to a shared printer or plotter even if either is busy. User files are placed in a queue and printed on a first-come, first-served basis or according to priorities set by the HP 3000 server or PC server operator. A PC workstation can then perform other tasks, rather than waiting for the printer or plotter to finish.

Terminal Access

Your PC workstation can have terminal access with file transfer to an HP 3000 computer with the AdvanceLink application and the network software.

With the HP Terminal Program and the network software, your PC workstation can have terminal access to the following:

- HP 3000 computers
- HP 9000 computers running HP-UX (Series 300, 800)
- HP 1000 computers
- DEC VAX computers

When a PC workstation functions as a terminal, it accesses applications from another computer (through terminal emulation rather than PC applications). The other computer performs all the processing and storage functions for the PC workstation. Terminal access can be used without an HP 3000 server or PC server on the HP OfficeShare Network.

Network File Transfer (NFT)

Network File Transfer (NFT) allows you to copy files between your PC workstation and any of the following computers:

- HP 3000 computers
- HP 9000 computers running HP-UX (Series 300, 500, 800)
- HP 1000 computers
- DEC VAX computers

With NFT, you are not limited to just transfers to and from your PC. For example, from your PC workstation, you can transfer files from an HP 9000 computer to an HP 3000 computer, or you can transfer files from your PC workstation to an HP 3000 computer. NFT can be used even if you do not have an HP 3000 server or PC server on the network.

For More Information About	Refer To
NFT	<i>NFT User's Guide--HP OfficeShare Network</i>

Shared Resources with HP Touchscreen PCs

HP Touchscreen PCs can use resources shared from an HP 3000 or PC server on the HP OfficeShare Network using HP ThinLAN for PCs (version A.02.00 or A.03.00), or HP StarLAN 10 for PCs (version B.00.00). This allows Touchscreen PCs to use shared resources from HP 3000 servers or PC servers and to have terminal access to HP 3000 computers. For more information about the capabilities of HP Touchscreen PCs on the network, refer to the HP ThinLAN for PCs manuals or call your HP sales representative.

Expanded Memory Specification (EMS)

The HP OfficeShare Network can run on EMS interface cards that support the LIM 3.20 Expanded Memory Specification. This includes EMS interface cards that support LIM 4.0. Loading part of the OfficeShare software into expanded memory frees some standard RAM, so the PC workstation can run larger applications while the network is loaded. EMS is not supported for PC servers or Touchscreen PCs.

For More Information About	Refer To
Using EMS in a PC workstation	<i>PC Workstation Configuration Guide for LANs--HP OfficeShare Network</i>
Installing and Configuring an EMS interface card	The documentation for your EMS interface card

PC NetIPC/RPM

PC Network InterProcess Communication (NetIPC) and Remote Process Management (RPM) are available for systems analysts or programmers to develop applications that run between a PC workstation and an HP 3000. PC NetIPC/RPM must be purchased separately.

For More Information About	Refer To
PC NetIPC/RPM	<i>PC NetIPC/RPM Programmer's Reference Manual--HP OfficeShare Network</i>
NetIPC/RPM on the HP 3000	<i>NetIPC3000/V Programmer's Reference Manual, and NS3000/V User/Programmer Reference Manual</i>



Managing the Network

Chapter Overview

The HP OfficeShare Network gives you the ability to manage the resources that are shared from HP 3000 and PC servers on the network. You can share resources with specific PC workstations over the network and protect those shared resources from unauthorized use. You can also monitor the use of shared resources. In certain situations, you can change network configuration parameters to improve network performance. Also, the HP OfficeShare Network provides a full range of tools from troubleshooting flowcharts to diagnostic utilities so you can identify and resolve errors when they occur. This chapter introduces you to the following HP OfficeShare Network capabilities:

- Using the network configuration utilities
- Assigning shared resources
- Assigning node names and Internet Protocol (IP) addresses
- Providing Network File Transfer and terminal access
- Loading a computer's network software
- Providing network security
- Monitoring the network
- Managing network performance
- Troubleshooting problems on the network



The Network Configuration Utilities

You can configure servers and PC workstations on the network with the following configuration utilities:

- The RESMGR (Resource Manager) utility and the PSUTIL utility. With these utilities, you can choose which resources are shared from an HP 3000 server. The Shares that you create are implemented immediately, while the HP 3000 server is running on the network. These utilities are part of the Resource Sharing product for the HP 3000.
- The SRVCONFIG (Server Configuration) utility. With this utility, you can choose which resources are shared from a PC server. When a resource is configured for a server with SRVCONFIG, it is referred to as an Automatic Share. With SRVCONFIG, the Shares that you configure are implemented when the PC server software is loaded on the network. SRVCONFIG also enables you to assign a name and address for the PC server.
- The USRCONFIG (User Configuration) utility. With this utility, you can choose which shared resources are used by a particular PC. When a resource is configured for a PC with USRCONFIG, it is referred to as an Automatic Use. With USRCONFIG, the Uses that you configured for each PC workstation are implemented when the PC workstation software is loaded on the network. USRCONFIG also enables you to assign a name and address for the PC workstation.

For More Information About	Refer To
RESMGR	<i>Resource Sharing: Utilities</i>
SRVCONFIG	<i>PC Server Guide for LANs--HP OfficeShare Network</i>
USRCONFIG	<i>PC Workstation Configuration Guide for LANs--HP OfficeShare Network</i>

Shared Resources

The HP OfficeShare Network gives PC workstations access to PC server and HP 3000 server resources such as directories, printers, and plotters.

This section summarizes how the network enables you to share server resources with PC workstations. To understand shared resources, you need to understand three concepts: Shares, Uses, and Shortnames.

Shares and Uses

Two terms used to describe the sharing of resources are **Share** and **Use**:

A **Share** is performed when a server offers a resource (a directory, printer, or plotter) to PC workstations on the network. When a Share has been created on the server, PC workstations can access the shared resource by creating a **Use** to the resource.

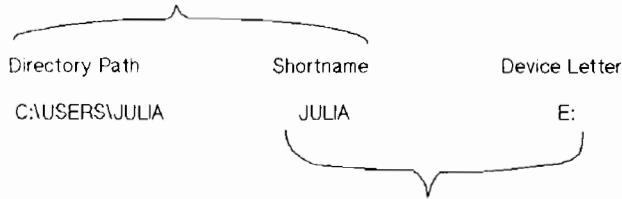
A **Use** is performed to allow a PC workstation to access a resource that has been shared from a server. A resource must first be shared from a server before it can be used by a PC workstation. After the server shares a resource, a PC workstation may access the resource by performing a **Use**.

Shortnames

Both Share and Use refer to a shared resource by a common name, the **Shortname**. Every resource that is shared on the network is assigned a shortname. In this way, both server and PC workstation know which resource is meant. Shortnames can also provide a convenient way for the person in charge of the network to list, organize, and keep track of network resources.



Shared by server



Used by PC workstation



How Shares and Uses Work

For More Information About	Refer To
Sharing resources from an HP 3000 server	<i>Resource Sharing: Utilities</i>
Sharing resources from a PC server	<i>PC Server Guide for LANs--HP OfficeShare Network</i>
Using resources	<i>PC Workstation Configuration Guide for LANs--HP OfficeShare Network, or User's Guide--HP OfficeShare Network</i>
Shortnames	<i>Resource Sharing: Utilities, or PC Server Guide for LANs--HP OfficeShare Network, or PC Workstation Configuration Guide for LANs--HP OfficeShare Network</i>

The SHARE and USE Commands

In addition to setting up automatic Shares and Uses with the configuration utilities, you can establish Shares and Uses with network commands. You can share resources on a PC server or HP 3000 server *while the server is running on the network* by creating a dynamic Share. You can create dynamic Shares with the server's **SHARE** command. This enables you to share a resource without stopping the server.

A user on a PC can connect to a shared resource *while the PC is running on the network* by creating a dynamic Use. You can create a dynamic Use with the PC workstation's **USE** command. This enables you to access a shared resource without stopping your workstation's software.

For More Information About	Refer To
Sharing resources from an HP 3000 server	<i>Resource Sharing: System Management</i> <i>Resource Sharing: Utilities</i>
Sharing resources dynamically on a PC server	<i>PC Server Guide for LANs--HP OfficeShare Network</i>
Using resources dynamically on a PC	<i>User's Guide--HP OfficeShare Network</i>

Comparing Automatic and Dynamic Shares and Uses

Shares and Uses can be done in two ways: automatically (with the network configuration utilities) and dynamically (with the **SHARE** and **USE** commands). Automatic Shares and Uses are done automatically each time the PC server or PC workstation loads the network and are, therefore, more convenient.

The following tables contrast automatic and dynamic Shares with automatic and dynamic Uses.

Automatic Shares and Dynamic Shares

Capability	Description
Automatic Share	The PC server or HP 3000 server automatically implements the Share every time you load its network software. Resources shared automatically are typically those resources most frequently needed by the workstation users. You create automatic Shares with the SRVCONFIG utility (on the PC server) or the RESMGR utility (on the HP 3000 server).
Dynamic Share	Dynamic Shares are created with the SHARE command on a PC server anytime it is running the network software. Such a Share lasts only until you delete it, or the server is stopped or restarted on the network. When the network software is reloaded on the PC server, the dynamic Share is not reestablished automatically.

Automatic Uses and Dynamic Uses

Capability	Description
Automatic Use	The PC automatically establishes these resource Uses every time the workstation user loads the network software. You create automatic Uses with the USRCONFIG utility.
Dynamic Use	A PC user can establish a dynamic Use, using the USE command, anytime the PC workstation is running the network software. Such a Use lasts only until the PC user deletes it or turns off the PC workstation. When the network software is reloaded on the PC workstation, the dynamic Use is not reestablished automatically.

Node Names and IP Addresses

Each computer on the network must have a node name and Internet Protocol (IP) address to communicate on the network. The following sections describe node names and IP addresses.

Node names

Each computer must have a unique node name. It is a good idea to choose a node name that is meaningful, such as the user's name, department's name, or project's name.

For More Information About	Refer To
Node names	<i>PC Workstation Configuration Guide--HP OfficeShare Network</i> , or <i>PC Server Guide--HP OfficeShare Network</i> , or the network services reference manual for your HP 3000, HP 9000, HP1000, or DEC VAX computer

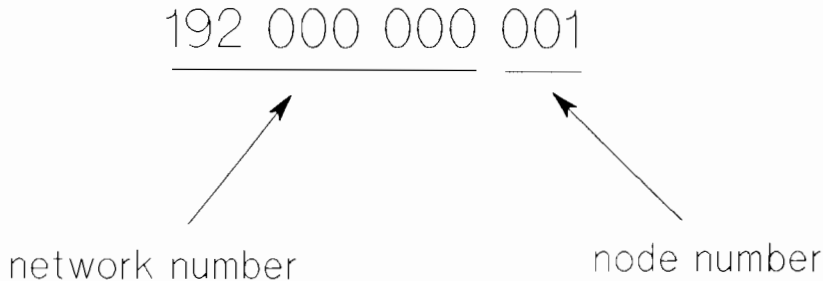
IP Addresses

As with the node name, each computer needs to have a unique IP (internet protocol) address for network communication. An IP address has two parts: a network number and a node number.

network number The network number identifies the network a computer is on. Each computer on the network must share the same network number.

node number The node number identifies a particular computer on a network. Each computer on the network must have a unique node number.

An IP address is made up of four fields of three digits each. The following example illustrates an IP address:



Parts of an IP Address

For More Information About	Refer To
IP addresses	<i>PC Workstation Configuration Guide--HP OfficeShare Network</i> , or <i>PC Server Guide--HP OfficeShare Network</i> , or the network services reference manual for your HP 3000, HP 9000, HP1000, or DEC VAX computer

Setting Up Terminal Access and NFT

To provide terminal access and NFT capability on the network:

- Each PC workstation running terminal access and/or NFT must have the network software installed and properly configured. Each PC workstation using terminal access must also be running either AdvanceLink or the HP Terminal Program.
- Each HP 9000, HP 1000, and DEC VAX computer offering terminal access and/or NFT must have the appropriate Network Services software installed and configured.
- Each HP 3000 computer offering NFT must have the appropriate Network Services software installed and configured. An HP 3000 computer can offer terminal access without the Network Services software.

Each HP 3000, HP 9000, HP 1000, and DEC VAX computer on the network should have a system administrator who is responsible for installing and configuring these services. You should refer to the manuals that come with the Network Services product for instructions on how to install and configure your computer's Network Services software. The following table shows you the networking products that must be running on the computer for terminal access and/or NFT capability.

Network Services Software

Computer	Network Software Product
HP 3000 computer	Network Services/3000 (version A.00.04 or later)
HP 9000 computer (Series 300)	Network Services/9000-300 (release 5.2 or later)
HP 9000 computer (Series 500)	Network Services/9000-500 (release 1.03 or later for NFT)
HP 9000 computer (Series 800)	Network Services/9000-800 (release 2.0 or later)
HP 1000 computer (A Series)	Network Services/1000 (release 5.05 or later for terminal access; release 5.0 or later for NFT)
DEC VAX computer	Network Services for the DEC VAX Computer (release 2.0 or later for terminal access; release 1.1 or later for NFT)

Loading a Computer's Network Software

To load the network software, you run the computer's network loading utility. You must configure a computer for the network before loading the software. When a computer's network software is loaded on the network, the configuration is implemented.

The HP OfficeShare Network uses the following commands and utilities to load computers on the network:

- The SRVLOAD (Server Load) utility loads the network software for PC servers.
- The USRLOAD (User Load) utility loads the network software for each PC workstation on the network.
- The NETCONTROL and NSCONTROL commands load the HP 3000 network software for each HP 3000 server on the network.

For More Information About	Refer To
NETCONTROL and NSCONTROL commands	<i>NS3000/V Network Manager Reference Manual Vol.II</i>
The SRVLOAD utility	<i>PC Server Guide for LANs--HP OfficeShare Network</i>
The USRLOAD utility	<i>PC Workstation Configuration Guide for LANs--HP OfficeShare Network, or User's Guide--HP OfficeShare Network</i>
Loading the Network Services software for the HP 3000, HP 9000, HP 1000, and DEC VAX computers	The reference manuals for your Network Services product

Providing Security

Security is provided for each network service. You can use these security features to:

- Protect resources shared with a PC workstation in three ways:
 - Require a configuration password to gain access to a server.
 - Require a password to gain access to specific resources shared by a server.
 - Control permission levels for directories shared by a server.
- Protect terminal access to all computers on the network.
- Protect files being transferred with NFT.

This section briefly discusses each of these security options.

Protecting Resources Shared With a PC Workstation

You have three kinds of security available for resources shared from an HP 3000 or PC server to a PC workstation: a configuration password, a resource password, and permission levels for shared directories.

A Configuration Password

A configuration password is similar to a logon password for network servers. A configuration password can prevent unauthorized access to the resources a server shares with a PC workstation. If someone loads the PC workstation's network software without supplying the PC workstation user's assigned configuration password, the PC workstation will not set up any automatic Uses to shared resources. The user will have to access resources with the **USE** command. These resources can be protected by a resource password.

A Resource Password

You can assign a password to specific resources shared by a server so that only authorized users on the network can use those resources. Resource passwords can be assigned at the same time the Share is configured.

Permission Levels for Shared Directories

A shared directory, and all files and subdirectories in the shared directory, may have one of three permissions: **Read only**; **Read and Write**; or **Read, Write, and Create**. Directory permissions allow you to limit the operations PC users may perform on the contents of a directory. The permissions apply to all files and subdirectories in the shared directories.

For More Information About	Refer To
Security with an HP 3000 server	<i>Resource Sharing: System Management</i>
Security with a PC server	<i>PC Server Guide for LANs--HP OfficeShare Network</i>
Configuration passwords	<i>PC Workstation Configuration Guide for LANs--HP OfficeShare Network</i>
Resource passwords Permission Levels	<i>PC Server Guide for LANs--HP OfficeShare Network, or Resource Sharing: System Management</i>

Protecting Terminal Access to Computers

The security available with a stand-alone HP 3000, HP 9000, HP 1000, or DEC VAX computer (logon and password protection) also protects the computer's resources when PC users have terminal access to those resources over the network.

For More Information About	Refer To
Security for terminal access	User's manuals and Network Services manuals for your particular HP 3000, HP 9000, HP 1000, or DEC VAX computer

Protecting Files Transferred With NFT

Each file being transferred by NFT uses the security available with a stand-alone HP 3000, HP 9000, HP 1000, or DEC VAX computer.

For More Information About	Refer To
Security for NFT	<i>NFT User's Guide--HP OfficeShare Network</i>

Monitoring the Network

HP OfficeShare Network monitoring capabilities allow you to monitor the use of shared resources from an HP 3000 server or PC server. You can:

- List all resources being shared by the server.
- Identify all PC workstations that are currently using shared resources.
- Identify the resources that each PC workstation is using.
- Identify the permission levels of each shared directory.
- Identify the files that are to be printed or plotted and modify the order in which files will be printed or plotted.

You cannot monitor the network from a PC workstation.

For More Information About	Refer To
Monitoring shared resources from an HP 3000 server	<i>Resource Sharing: Utilities</i>
Monitoring shared resources from a PC server	<i>PC Server Guide for LANs--HP OfficeShare Network</i>

Managing Network Performance

Each computer on the network contains a default tuning configuration which provides good performance in most cases. However, under certain circumstances, you can adjust the network configuration values of a PC workstation or HP 3000 server to improve performance. Although you may not want to modify the default configuration immediately after installing the HP OfficeShare Network, information for adjusting network performance is provided.

For More Information About	Refer To
Adjusting network performance on an HP 3000 server	<i>Resource Sharing: System Management NS3000/V Network Manager Reference Manual</i>
Adjusting network performance on a PC workstation	<i>PC Workstation Configuration Guide for LANs--HP OfficeShare Network</i>

Troubleshooting Problems on the Network

The HP OfficeShare Network provides a variety of diagnostic tools to help you troubleshoot the network. The *Troubleshooting Guide for LANs -- HP OfficeShare Network* guide contains troubleshooting flowcharts which show you how to identify and resolve network errors. You have several diagnostic utilities that can be run from PC workstations on the network to help you troubleshoot network errors. These diagnostic utilities are briefly described in the following sections.

The DIAGLINK Utility

The DIAGLINK utility enables you to test the hardware connection between any two computers on the network. The hardware connection includes the interface card and the cable connected to the interface card. Since DIAGLINK runs only without the network software loaded on your PC, you can test the network hardware connection even if you have not configured the network software.

The DIAGNET Utility

The DIAGNET utility enables you to check the network software connection between servers, computers, and PC workstations. Its diagnostic options ensure that the interface is installed properly, and that the tested server or PC workstation can communicate on the network. The diagnostic options also provide network statistics to help you monitor the network performance to a server, computer, or PC workstation.

The Shared Devices Utility

The Shared Devices utility enables you to check shared directory and printer access to an HP 3000 or PC server. Its diagnostic tests enable you to identify malfunctions that may occur while accessing a server's resources.

The PC Diagnostic Utility

The PC Diagnostic utility provides the interface for using the DIAGNET and Shared Devices diagnostic utilities.

For More Information About	Refer To
The diagnostic utilities and troubleshooting from a PC workstation	<i>Troubleshooting Guide for LANs--HP OfficeShare Network</i>
Troubleshooting from an HP 3000, HP 9000, HP 1000, or DEC VAX computer on the network	The troubleshooting manuals for your computer

Where to go From Here

You should now be familiar with the general features of the HP OfficeShare Network and can proceed as follows.

Task to Perform	Guide to Read
Make a map of your network showing where computers and peripherals are located.	<i>Planning Guide for LANs--HP OfficeShare Network</i>

Additional References

Chapter Overview

This chapter lists additional documents you may want or need to consult for more information, either while you are setting up your HP OfficeShare Network or after it is in use. To obtain any of these guides, contact your HP representative.

HP StarLAN Manuals

- *HP StarLAN Interface Card Installation Guide*
- *HP StarLAN Hub Installation Manual*
- *HP 27212A StarLAN Hub Product Note*
- *HP 28647A Bridge Installation and Reference Manual*
- *HP 30265A StarLAN/3000 Link Installation and Reference Manual*



HP ThinLAN Manuals

- *HP ThinLAN Interface Card Installation Guide*
- *HP 28645A ThinLAN Hub Installation Guide*

HP StarLAN 10 Manuals

- *HP 27236A StarLAN 10 Interface Card Installation Guide*
- *HP 28663A StarLAN 10 Hub Installation Manual*
- *HP 28664A Twisted-pair MAU Installation Manual*
- *HP StarLAN 10 Troubleshooting Guide*

LAN Introduction

- *Making the LAN Connection*

NFT Manuals

- *NS Cross-System NFT Reference Manual*

NS/1000 Manuals

- *NS/1000 User/Programmer Reference Manual*
- *NS/1000 Generation and Initialization Manual*
- *NS/1000 Maintenance & Principles of Operation Manual*

NS3000/V Manuals

- *NS3000/V Network Manager Reference Manual, Vols. 1 & 2*
- *NS3000/V User/Programmer Reference Manual*
- *NS3000/V Error Message and Recovery Manual*
- *NetIPC3000/V Programmer's Reference Manual*

Other HP 3000 Networking Manuals

- *LAN/3000 Diagnostic and Troubleshooting Manual*
- *LAN Link Hardware Troubleshooting Manual*
- *LAN Cable and Accessories Installation Manual*
- *LAN/3000 Link, ThinLAN/3000 Link, and StarLAN 10/3000 Link Design Guides*
- *HP 30240A ThinLAN/3000 Link Local Area Network Interface*
- *Controller (LANIC) Installation and Service Manual*
- *NS 3000/V Error Message and Recovery Manual*

Resource Sharing Manuals

- *Resource Sharing: System Management*
- *Resource Sharing: Utilities*
- *Resource Sharing: Host Diagnostics*
- *Resource Sharing: PC Backup (PC User)*
- *Resource Sharing: PC Backup (System Management)*
- *Print Spooler Utility*
- *Print Attending*

NS/9000 Series 300 Manuals

- *HP 98643A LAN/300 Link LANIC Installation Manual*
- *Using Network Services*

- *Installing and Maintaining NS-ARPA Services*
- *Network Services Reference Pages*

NS/9000 Series 500 Manuals

- *NS/9000 LAN User's Guide*
- *NS/9000 LAN Node Manager's Guide*
- *HP 27125A LAN/500 Link LANIC Installation Manual*

NS/9000 Series 800 Manuals

- *NS/9000 Series 800 User/Programmer Reference Manual*
- *NS-ARPA Services/9000 Series 800 Node Manager's Guide*
- *LAN/9000 Series 800 Link LAN Interface Controller (LANIC) Installation and Reference Manual*
- *NS/9000 Series 800 Manual Reference Pages*
- *NS Cross System NFT Reference Manual*
- *NS Cross-System Network Manager Reference Manual*

Network Services for the DEC VAX Computer Manuals

- *Network Services for the DEC VAX Computer*

Terminal Access Manuals

- *AdvanceLink*
- *HP Terminal Program User Manual*

Glossary

- AdvanceLink** An HP software package that allows an HP Vectra PC or IBM PC/XT/AT to communicate as a terminal with an HP 3000 computer on the network. AdvanceLink also allows file transfer with an HP 3000 computer. See also **HP Terminal Program**.
- Attachment Unit Interface cable (AUI cable)** Industry standard cable that attaches a LANIC in an HP 3000, HP 9000, or HP 1000 computer to a ThinMAU on HP ThinLAN cable or to a MAU on HP ThickLAN cable. Also attaches a Twisted-pair MAU to an HP StarLAN 10 Hub, or to a LANIC.
- AUI cable** See **Attachment Unit Interface cable**.
- Automatic Share** A Share made automatically by a PC server every time you load the server's network software.
- Automatic Use** A Use established automatically by a PC workstation every time you load its network software. The automatic Use is in effect until the user disconnects it or until the PC workstation or server is turned off or rebooted.
- Backbone** ThinLAN or ThickLAN cable when used to extend and connect two or more LANs. See **HP ThinLAN cable** and **HP ThickLAN cable**.
- Batch file** Allows several MS-DOS commands to be placed in a file and executed as a single command.

BNC connector	The type of ThinLAN cable connector used with HP ThinLAN cable.
Bridge	See HP StarLAN Bridge
Configuration password	An optional password assigned to a PC workstation's network software that protects users' network resources from unauthorized use.
Configuration values	The values that determine the HP StarLAN, HP ThinLAN, and HP StarLAN 10 network software configuration — such as IP addresses, node names, automatic Shares, and automatic Uses.
Configure	To set up your computer system so that the computer and all peripheral devices can work together. If the computer is part of a network, this can also include loading the appropriate software and establishing the necessary hardware and software connections.
Control codes	Special codes contained in data sent to a peripheral device. The codes determine how the device operates.
Cross-connect block	A standard wall-mounted device which contains a minimum of 50 contact points for connecting twisted-pair cable. A cross-connect block can be used in StarLAN 10 networks to connect individual runs of twisted-pair cable to a 25-pair cable.
Device	A piece of equipment, like a printer, plotter, or disc drive, that expands your system's capabilities.
Device letter	A DOS name for a shared directory or a local disc drive. Examples of device letters are D:, E: and F:.
Devicename	A DOS name for a device attached to a PC workstation or to a network server. Printers and plotters have names such as LPT1, LPT2, or COM1.
Diagnostic Utility	A program that verifies the operation of a computer and related hardware, an operating system, or another program.

Directory	The name for a group of files on a particular disc.
Directory permissions	Controls placed on a user's ability to read from or write to files in a server's shared directory, or to create new files in that directory. Directory permissions consist of read only, read/write, and read/write/create.
Direct Printing	Allows the PC application to control the print format. With direct printing, your printer or plotter capabilities are the same as if the printer or plotter were attached directly to your PC workstation.
DMA channel (Direct Memory Access channel)	Circuitry on an HP StarLAN Interface Card that allows the transfer of data directly from the interface card to the computer's memory and vice versa.
DOS (Disc Operating System)	The computer programs that control the operation of a personal computer. Used in this manual to refer to MS-DOS and IBM PC DOS.
Drive	A disc drive.
Dynamic Share	A Share made from a PC server. The dynamic Share remains until you revoke it or the server is stopped or rebooted.
Dynamic Use	A software connection from a PC workstation to a network resource. The dynamic Use is in effect until the user disconnects it or until the PC workstation or server is turned off.
EMS -- Expanded Memory Specification	Refers to a hardware card you install in your PC workstation that allows your PC workstation to act as if it contains more than 640 Kbytes of RAM, allowing larger programs and data. The HP OfficeShare Network uses EMS when it is available to reduce the amount of memory the network uses in your PC workstation's regular memory.

Escape sequences	Special codes, beginning with the ESC (escape) character, which are contained in data that a network user may send to a peripheral device after the PC workstation network software is loaded on the network. The codes determine how the device operates.
File	A collection of related information that is stored on a disc or directory.
Head Hub	An HP StarLAN Hub that has unshielded twisted-pair cable connecting it to the "TO UPPER HUB" port of another HP StarLAN Hub. Also called an upper-level hub.
Hierarchical directory structure	A directory structure in which each directory may contain other directories as well as files.
HP 3000 server	An HP 3000 computer, using Resource Sharing software, that can share HP 3000 resources with PC workstations. The HP 3000 server can control and monitor PC workstation network activities.
HP 3000 server printer setup	A collection of configuration values that can select the size and orientation of the printer media, the typeface in which to print a file, the number of copies to print, and the language character set in which to print a file. These are used only with HP 3000 servers.
HP StarLAN Bridge	A stand-alone network device that allows an HP StarLAN Hub to be connected to HP ThinLAN cable or HP ThickLAN cable. This connection allows the building of a hybrid network of HP StarLAN, HP ThinLAN, and (via ThinLAN or ThickLAN) HP StarLAN 10 Networks.

HP StarLAN Hub A device that allows the connection of PC workstations, PC servers, and HP 3000 Series 37 and MICRO 3000 Series computers into a StarLAN Network. The HP StarLAN Hub also directs network traffic, retimes and regenerates network signals, and detects network signal collisions. See also **Head Hub** and **Intermediate Hub**.

HP StarLAN Interface Card The interface card that needs to be installed in each personal computer on the HP StarLAN Network for network communication.

HP StarLAN Network HP's 1 Mbit twisted pair, IEEE standard, local area network (LAN) that provides access to shared resources and HP's network services.

HP StarLAN 10 Hub A device that allows the connection of PC workstations, PC servers, and HP 3000, HP 1000, and HP 9000 computers into a StarLAN 10 Network. The HP StarLAN 10 Hub also directs network traffic, retimes and regenerates network signals, and detects network signal collisions. See also **Head Hub** and **Intermediate Hub**.

HP StarLAN 10 Interface Card The interface card that needs to be installed in each personal computer on the HP StarLAN 10 Network for network communication.

HP StarLAN 10 Network HP's 10 Mbit twisted pair local area network (LAN) that provides access to shared resources and HP's network services.

HP Terminal Program A program that allows HP Vectra PCs and IBM PC/XT/ATs terminal access to HP 3000, HP 9000, HP 1000, and DEC VAX computers.

HP ThickLAN cable A thick coaxial cable that conforms to the IEEE 802.3 Type 10BASE5 standard. A single segment can be up to 500 meters long and can support up to 100 nodes (computers).

HP ThinLAN cable	A thin coaxial cable that conforms to the IEEE 802.3 Type 10BASE2 standard. One segment can be up to 185 meters long and can support up to 30 nodes (computers).
HP ThinLAN Hub	A 10Mbit multiport repeater for IEEE 802.3 local area networks. An HP ThinLAN Hub can interconnect up to four HP ThinLAN cable segments to HP ThickLAN cable. An HP ThinLAN Hub can also extend an HP ThinLAN network beyond the limits for a single HP ThinLAN cable segment.
HP ThinLAN Network	HP's ThinLAN cable version of the HP OfficeShare Network that provides access to HP's network services.
HP ThinLAN Interface Card	The interface card that needs to be installed in each personal computer on the HP ThinLAN Network for network communication.
HP Twisted-pair MAU	See Twisted-pair Medium Attachment Unit .
Host Computer	An HP 3000, HP 9000, HP 1000, or DEC VAX computer on the network that provides terminal access to PC workstations.
Hub	See HP StarLAN Hub, HP ThinLAN Hub, or HP StarLAN 10 Hub .
I/O address	Memory locations set aside on a personal computer's I/O (Input/Output) bus for interface cards. An "I/O base address" is the lowest address for a block of interface card memory locations.
IEEE 802.2 and 802.3	Standards developed by the Institute of Electrical and Electronic Engineers that define the physical and logical connections at the lowest levels of a local area network.

In-line connector	Joins pairs of HP ThinLAN cable sections. Attaching to HP ThinLAN cable in the same way as "T" connectors, in-line connectors allow you to easily add computers to your network. Unlike a "T" connector, however, an in-line connector does not attach directly to an HP ThinLAN Interface card.
Interface Card	See HP StarLAN Interface Card , HP ThinLAN Interface Card , or HP StarLAN 10 Interface Card .
Intermediate Hub	An HP StarLAN Hub that is connected to another HP StarLAN Hub by unshielded twisted-pair cable plugged into its "TO UPPER HUB" port. Also called a lower-level hub.
Interrupt channel	Circuitry that allows the HP StarLAN, StarLAN 10, or ThinLAN Interface Card to signal the personal computer that it needs the computer's attention. The computer then takes whatever action is necessary to respond to the request from the interface card.
IP (Internet Protocol) address	The number that identifies the computer to other computers on the network. Each computer on the network must have a unique IP address.
InterProcess Communication (IPC)	See PC Network InterProcess Communication and Remote Process Management .
Jumpers	Small plastic cubes on the HP ThinLAN and HP StarLAN Interface Cards that are open at one end. The open end of each jumper is placed over two pins on a jumper block to denote a value or a setting.
LAN	See Local Area Network .
Jumper pack	See Transceiver select jumper
LANIC	See Local Area Network Interface Controller .

Local	Devices that are directly connected to a computer and are physically located near the computer.
Local Area Network (LAN)	One or more PC workstations and one or more servers or hosts connected together so they can share files, directories, printers, and plotters.
Local Area Network Interface Controller (LANIC)	An interface card that allows an HP 3000, HP 9000, or an HP 1000 to attach to and communicate over an HP ThinLAN Network or an HP StarLAN 10 Network.
Loopback connector	A hardware attachment used to isolate HP StarLAN, ThinLAN, or StarLAN 10 Interface Card problems from cabling problems during network troubleshooting. The ThinLAN Network uses a loopback connector that is different from that used by StarLAN and StarLAN 10 Networks.
Lower-level hub	See Intermediate Hub .
Medium Attachment Unit (MAU)	A device that attaches computers, hubs, and bridges to HP ThickLAN cable. Also called a MAU. See Thin Medium Attachment Unit and Twisted-pair Medium Attachment Unit .
MS-DOS	Abbreviation of Microsoft Disc Operating System. The computer programs that control the operation of a personal computer. MS-DOS is referred to in this guide as DOS.
NetBIOS	A network module that allows users on the HP Office-Share Network to run various applications that use the IBM NetBIOS software interface.

Network File Transfer (NFT)

A network service that allows files to be transferred over the HP OfficeShare Network between your local PC workstation and HP 3000, HP 9000, HP 1000, and DEC VAX computers. You can initiate file transfers from your local PC workstation.

Networked application

Application software that allows concurrent use by multiple users, and protects data from accidental overwriting when several users are accessing it.

Network InterProcess Communication (NetIPC)

See **PC Network InterProcess Communication and Remote Process Management**.

Network Map

A map of the hardware layout of your network. We recommend that you draw a map of your network.

Network resource

A directory, group of files, printer, or plotter shared from a server for PC workstations on the network to use. Also called a **shared resource**.

Network segment

Up to 30 computers on an HP ThinLAN Network that are connected together with a maximum of 185 meters of HP ThinLAN cable. HP ThinLAN Hubs and/or HP Repeater Kits are used to interconnect segments.

Network software

The software that makes it possible for personal computers and HP 3000s and other machines to communicate over the network.

Node

A computer, hub, repeater, or bridge connected to a network.

Node name

The name that identifies a computer to other computers and users of the network. Each computer on the network must have a unique node name.

PAM (Personal Application Manager)	The HP user interface program that allows a user of a PC to perform common DOS functions, such as starting a program, creating a directory, or copying a file, by selecting the function on the screen display.
Password	An optional word or combination of characters assigned to shared resources. The password restricts access to the resource(s) to those who know the correct password. Also see Configuration Password and Resource Password .
Pathname	A unique sequence of names (the device letter, directory name(s), and file name) that locate a directory or file on a local or shared disc. An example of a pathname format is <i>B:WORK\MEMO</i> .
PC	Personal Computer.
PC-DOS	Abbreviation of Personal Computer Disc Operating System. The computer programs that control the operation of a personal computer. PC-DOS is referred to in this guide as DOS.
PC Network InterProcess Communication and Remote Process Management (PC NetIPC/RPM)	A software product that enables software developers to write applications for PC workstations and HP 3000 computers so that the two computers interact and transfer data.
PC server	An HP Vectra PC on the network dedicated to managing directories, printers, and plotters shared by PC workstation users. A PC server controls and monitors resource sharing activities of PC workstation users.

PC server printer setup	An escape sequence or series of control codes that instructs a PC server's printer to perform certain actions (such as a reset or page feed) before printing a file or can determine the appearance of a printout (such as its type font or spacing).
PC Server Worksheet	A worksheet for you to use to plan a PC server's software configuration.
PC workstation	An HP Vectra PC, HP Vectra CS, ES, ES/12, RS/16, RS/20 PC, IBM PC/XT/AT, or PS/2 model 30 computer running network software that allows the PC to use the network.
Peripheral	A device such as a disc drive, printer, or plotter which is considered to be separate from the computer but is attached to and controlled by it.
Permissions	See Directory permissions .
Personal Application Manager (PAM)	See PAM .
Port	An outlet from the computer that is used to connect the computer to a peripheral device. A cable runs between the port and the device. Also, a connector on an HP StarLAN Hub that is used to attach a cable to another HP StarLAN Hub or the StarLAN Interface Card.
12-port modular adaptor	A connecting device with twelve 8-pin modular jacks. It can be attached directly to the 50-pin port on the HP StarLAN 10 Hub and twisted-pair cable can be plugged into each jack. It can be used instead of a cross-connect block for connecting nodes to the hub.
Printer setup	A definition of the appearance of the files a PC workstation sends to a network printer.
Private directory	A directory intended to be used by one user.

Processed Printing	A type of printing that offers the possibility of using an HP 3000 printer when the PC application cannot communicate directly with the printer. This is accomplished via a file which translates Diablo 630/HP 2601 printer specifications to specifications for the actual printer being used. The processed printer setup file can determine font, paper orientation, number of copies, type of media, etc. See also, Direct Printing .
Public directory	A shared directory intended for use by all users on the network.
Redirection	The process of associating a local devicename or device letter with a resource on a network server.
Remote	Designates devices that are connected to the computer through a communication link but are physically located away from the computer.
Remote Process Management (RPM)	See PC Network InterProcess Communication and Remote Process Management .
Repeater	A device that continues signals from one segment of ThinLAN cable to another. A repeater can also join HP ThinLAN and HP ThickLAN cable segments. A repeater consists of a repeater transceiver on both cable segments, with repeater branch cables joining both repeater transceivers to a repeater box. Both HP StarLAN 10 and ThinLAN hubs act as repeaters.
Repeater Kit	A hardware kit for making a repeater link. A Repeater Kit can connect HP ThinLAN cable to HP ThickLAN cable and can also extend a local area network beyond the size limits for a single HP ThinLAN or HP ThickLAN cable segment.
Resource	A shared directory, group of files, printer, or plotter shared from a server for PC workstations to use. Also referred to as a network resource or shared resource .

Resource password	An optional password assigned to a server's resource that prevents unauthorized people from accessing the resource.
Root directory	The directory that is created when you use FORMAT to format a disc. All other directories and files on the device are accessed through the root directory. This directory is represented by a backslash (\) and is sometimes referred to as the main directory.
Section	A cable section is a piece of HP ThinLAN cable that, when joined with other cable sections, forms an entire ThinLAN network cable (or cable segment).
Segment	A cable segment is a functionally complete HP ThinLAN cable. It is made up of one or more HP ThinLAN cable sections connected end-to-end and must have a cable terminator at each end.
Server	An HP Vectra PC or HP 3000 that runs software for managing the network resources used by PC workstations.
Share	A process performed by a server to make the server's shared resources available to PC workstations on the network. (See also Automatic Share and Dynamic Share .)
Shared resource	A directory, group of files, printer, or plotter shared from a server for PC workstations on the network to use. Also called a network resource .
Shortname	A name that represents a shared resource. It is used to represent the resource from the PC workstation or server.
SPOOL directory	The directory on a PC server's disc where files sent to a shared printer or plotter are stored until they can be printed or plotted.

Spooling	The activity of placing output (destined for a printer or plotter) in a directory so that the user can proceed to do useful things while the file is printed or plotted.
StarLAN	See HP StarLAN Network .
StarLAN Bridge	See Bridge .
StarLAN Hub	See HP StarLAN Hub .
StarLAN Interface Card	See HP StarLAN Interface Card .
StarLAN 10	See HP StarLAN 10 Network .
StarLAN 10 Hub	See HP StarLAN 10 Hub .
StarLAN 10 Interface Card	See HP StarLAN 10 Interface Card .
Subdirectory	A directory within another directory.
"T" connector	A connector used to join two ThinLAN cable sections to each other, and to connect the ThinLAN cable to the personal computer on the network. If only one piece of cable is attached, a terminator is attached to the other side of the "T" connector. Also used to connect a ThinMAU to ThinLAN cable.
"T" connector cover	A cover which fits over a "T" connector to protect the connector from damage or accidental grounding.
Terminal	A device consisting of a keyboard and display screen that is used to communicate with a computer. This device does not perform any processing or storage activity but relies on the host computer instead. You can use your personal computer as a terminal by using AdvanceLink or the HP Terminal Program.
Terminal emulator	A program running on a computer which makes it function like a terminal. See AdvanceLink or HP Terminal Program .

Terminator	A piece of hardware that attaches to the "T" connector at the end of the network cable segment and acts like a "cushion" to prevent signals from bouncing back from the end of the cable.
ThickLAN cable	See HP ThickLAN cable .
ThinLAN	See HP ThinLAN Network .
ThinLAN cable	See HP ThinLAN cable .
ThinLAN Hub	See HP ThinLAN Hub .
ThinLAN Interface Card	See HP ThinLAN Interface Card .
ThinMAU	See Thin Medium Attachment Unit .
Thin Medium Attachment Unit (ThinMAU)	The device that attaches computers, hubs, and Bridges to HP ThinLAN cable.
Transceiver jumper pack	A set of jumpers on an HP ThinLAN Interface Card that allows you to change from directing signals from a BNC ThinLAN cable connector to a DIX (Digital-Intel-Xerox) thick cable connector. The DIX setting is used only when the HP ThinLAN Interface Card is to be connected to the HP StarLAN 10 Network.
Troubleshooting	Tracing and correcting configuration errors or hardware malfunctions in a system.
Twelve-port modular adapter	Used to connect unshielded twisted-pair cable to an HP StarLAN 10 Hub. The adapter attaches to the 50-pin port on the hub. Up to 12 nodes in the network can be connected to the 8-pin modular jacks contained on the adapter.
Twisted pair	See Unshielded twisted-pair cable .
Twisted-pair MAU	See Twisted-pair Medium Attachment Unit .

**Twisted-pair
Medium Attach-
ment Unit**

A transceiving device that has an AUI cable and an 8-pin modular plug for unshielded twisted-pair cable connection. Allows computers that have an AUI port to be connected to the HP StarLAN 10 Network with unshielded twisted pair cable. Also called Twisted-pair MAU.

**Unshielded
twisted-pair cable**

The transmission medium by which the nodes and devices on an HP StarLAN Network or HP StarLAN 10 Network communicate.

Upper-level Hub

See **Head Hub**.

Use

A process performed by a PC workstation that allows a PC workstation to access network resources (directories, groups of files, printers, or plotters) shared from a server. A Use allows a PC workstation to use a server's resource as if it belonged to the PC workstation itself. (See also **Automatic Use** and **Dynamic Use**.)

**User Reference
Worksheet**

A worksheet that helps you plan the network software configuration of a user's personal computer. Once the network is operational, this worksheet lets you know what network resources are available.

Workstation

See **PC Workstation**.

**Workstation
Name**

See **Node Name**.



Index

A

AdvanceLink	2-7, A-1
Applications	
Running NetBIOS	2-5
AUI cable	A-1
Automatic Share	3-5 to 3-6, A-1
Automatic Use	3-5 to 3-6, A-1

B

BNC connector	A-1
Bridge	A-2

C

Capabilities	
Overview	2-1
Computers	2-3
Supported	2-2
Configuration password	3-11, A-2
Configuration utilities	3-2
Configuration values	A-2
Configuring network software	
With SRVCONFIG	3-2
With USRCONFIG	3-2

D

DEC VAX computer	
Capabilities	2-3
For NFT	2-8
Device letter	2-4, A-2
Devicename	A-2
For shared plotters	2-6
For shared printers	2-5
DIAGLINK utility	3-15
DIAGNET utility	3-15
Diagnostic utility	3-15, A-2
Direct Printing	A-3
Directory	
Permissions	A-3
Shared	2-4
Directory sharing	2-1
DMA channel	A-3
DOS	1-3, 2-4
Dynamic Share	3-6, A-3
Dynamic Use	3-6, A-3

E

EMS	A-3
Defined	2-9
Specifications	2-9
Expanded Memory Specification	
See EMS	
Expanded Memory Specification (EMS)	2-1

H

Hardware	1-2
Head Hub	A-4
Helpline	1-4, 2-4
Host computer	A-6
HP 1000 computer	

Capabilities	2-3
For NFT	2-8
HP 3000 computer	
For NFT	2-8
Resource Sharing	2-3
Server	2-3
HP 3000 server	1-2, 2-3, A-4
HP 9000 computer	
Capabilities	2-3
For NFT	2-8
HP Terminal Program	2-7
HP Touchscreen PC	
Capabilities	2-8
Hub	
See StarLAN Hub or ThinLAN Hub	

I

I/O address	A-6
Intermediate Hub	A-6
Internet Protocol address	
See IP address	
Interrupt channel	A-6
IP address	3-2, A-7
Defined	3-7
Example	3-8
Network number	3-7
Node number	3-7

L

LAN	
See Local area network	
LANIC	A-7
Loading network software	3-10
With NETCONTROL command	3-10
With NSCONTROL command	3-10
With SRVLOAD utility	3-10

With USRLOAD utility	3-10
Local area network	2-1, A-7
Loopback connector	A-7

M

Managing performance	3-14
Managing the network	
Capabilities	3-1
Overview	3-1
Monitoring capabilities	3-13
MS-DOS	
Versions	1-3

N

NetBIOS	2-1, A-8
Applications	2-5
NETCONTROL	3-10
NetIPC/RPM	
See PC Network InterProcess Communication	
See also Remote Process Management	
Network File Transfer	
See NFT	
Network InterProcess Communication (NetIPC)	2-2
Network map	1-2, A-8
Network number	3-7
Network resource	A-8
Network Services	1-2, 3-9
Network software	A-8
Configuring	3-2
Loading	3-10
NFT	2-3, 2-8, A-8
Security	3-13
Setting up	3-8
With computers	2-8
With your PC workstation	2-8
Node name	3-2, 3-7

Defined	3-7
Node number	3-7
Nodename	A-9
NSCONTROL	3-10

O

Operating the network	
Overview	1-3

P

PC Diagnostic utility	3-16
PC Network Interprocess Communication (NetIPC)	2-9
PC server	1-2, 2-2, A-10
Capabilities	2-2
PC workstation	1-2, 2-2 to 2-3
Capabilities	2-3
Performance	
Managing	3-14
Permission levels	
For directories	3-12
Plotter sharing	2-1
Printer setup file	2-6, A-10
Printer sharing	2-1
Printers	
Shared	2-5
Processed Printing	A-11
PSUTIL	3-2

R

Remote Process Management (RPM)	2-2, 2-9
Repeater	A-11
RESMGR utility	3-2
Resource Manager utility	3-2
Resource password	3-12, A-11

S

Security	
Overview	3-11
Server	A-12
Server Configuration utility	3-2
Server Load utility	3-10
Setup Tasks	1-2
Share	3-3, A-12
See Automatic Share	
See also Dynamic Share	
SHARE command	3-5
Shared applications	2-4
Shared Devices utility	3-15
Shared directories	2-4
Appearing as shared discs	2-4
Device letter	2-4
On PC workstations	2-4
Security	3-12
Shared plotters	2-6
Specifications	2-7
Shared printers	2-5
Devicenames	2-5
Shared resource	2-3, 3-3, A-12
With HP Touchscreen PCs	2-8
Shortname	A-12
Defined	3-3
SPOOL directory	A-12
Spooling	
For Shared Printer/Plotter	2-7
SRVCONFIG utility	3-2
SRVLOAD utility	3-10
StarLAN	
Cable	A-4
Hub	A-5
Interface Card	A-5

T

T connector	A-13
T connector cover	A-13
Terminal	A-13
Terminal access	2-1, 2-3, 2-7
Security	3-12
Setting up	3-8
Terminal Program	A-5
Terminator	A-13
The USRCONFIG utility	3-2
ThickLAN cable	A-5
ThinLAN	
Cable	A-5
Hub	A-5
Interface Card	A-6
ThinMAU	A-14
Touchscreen PC	
See HP Touchscreen PC	
Troubleshooting	3-15, A-14
Twisted pair	A-14

U

Use	A-15
See Automatic Use	
Defined	3-3
See also Dynamic Use	
USE command	3-5
User Reference Worksheet	A-14
USRCONFIG utility	3-2
USRLOAD utility	3-10

